AD NUMBER: AD0817507

LIMITATION CHANGES

TO:

Approved for public release; distribution is unlimited.

FROM:

Distribution authorized to US Government Agencies Only; Administrative/Operational Use; 1 Jan 1964. Other requests shall be referred to US Army Natick Laboratories, Natick, MA 01760.

AUTHORITY

USANL dtd 3 Jul 1968

FOOD HABITS SURVEY, VOLUME I, PART 1.

(1) Final Report

(15) DA19-129-QM-2074(N)

(16) 7X84-06-032

Volume I

Part 1

Chapter 1 - Introduction and Scope
Chapter 2 - Recommendations and Analysis
Chapter 3 - Botanical-Zoological Taxonomy
Chapter 4 - Nutritional Analysis
Chapter 5 - Major Area Surveys
(1) Africa (sub-Saharan)
(2) Middle East
(3) Indian Subcontinent
(4) East Asia
(5) Southeast Asia
(6) Austral-Oceania
(7) South and Middle America

Part 2 (paginated separately)
Alphabetical Index of Ethnic Units
Food Habits Cultural Summaries

Human Relations Area Files

New Haven, Connecticut

(11) 1964

(12) 142 p. (172 950)

Chapter 1

INTRODUCTION AND SCOPE

The initial phase of this project was spent in attempting to: (1) define the scope and range of the study (2) design an operating system to facilitate the gathering of data (3) refine existing methodology and devise new methods to cope with special problems of this study, and (4) start the actual collecting and organizing of data as rapidly as possible, since the contract called for a one-year project. The original contract was subsequently extended for an additional year, and the work load of societies to be included was raised from approximately 190 to 380. The actual number of societies covered is 383.

Research Design: It was clear from the outset that a project expected to glean from the literature a total of approximately 500,000 separate items of information (data on 38 different aspects of an average of 35 foods for each of 383 societies) must be carefully designed as to the technique of recording in order to ensure uniformity and comparability of results among the various researchers.

Data Recording Forms: To this end a series of data-recording sheets was designed. These sheets were tested and revised several times before satisfactory versions were obtained. (See Illustrations I-V.)

The first of these (Illustration I) is the Food Data Sheet. This form, the basic detail recording sheet, provides for recording identification of the food source, the foodstuff (portion of the source consumed), the dish prepared from the foodstuff, and 34 categories of data about the food. The first of the 34 categories, I. Major Class, designates the relative importance of the food in the society. Provision is made to indicate whether source (S), foodstuff (F), or dish (D) is being described in category I. Categories II through XI relate only to the foodstuff. Categories XII through XV provide for a simplified step-by-step description of foodstuff preparation into a consumable dish. Categories XVI through XXX relate to the dish. (See Guide to Food Habits Tables, Vol. II, for details.)

The information contained on the food data sheets was then transferred to punch cards (IBM). It is presented in tabular form in Vol. II (Food Habits Tables) of this report.

A second form, Food Culture Data Sheet, was designed (see Illustration II) to record data pertaining to an entire society and not recordable in terms of individual food data sheets (meal times, general preferences, etiquette, identification, acculturation, population and geographic data, etc.). This sheet was designed to record discursive data in general, and the results are presented in Vol. I, part 2 (Food Habits Cultural Summaries).

The third form (see Illustration III) was designed to provide a convenient standard form for the recording of bibliographic references. These references are also presented in Vol. I, Part 2 (Food Habits Cultural Summaries).

Sources of Data: It was obvious that no amount of literature searching could take the place of firsthand observation—mainly because many aspects of food habits have not been reported in the literature in a systematic fashion, even though field workers undoubtedly have the information at hand. To obtain this information it was necessary to design two additional forms to be sent to field workers. The questionnaire equivalents of the Food Data Sheets and the Food Culture Data Sheets (see Illustrations IV and Va and Vb) were prepared and mailed to 66 ethnographers, missionaries, and other field workers. Of this number, 31 were satisfactorily completed and returned.

In addition, interviews were conducted with several individuals from foreign cultures in the New Haven, New York, and Hartford area. The results of these interviews were in all cases cross-checked with the literature to avoid individual bias.

The bulk of the information did, however, come from the literature. All Area Files (about 100) covering cultures in the Southern Hemisphere (contract limitation) were searched as a basic resource. Additional

literature was also searched. Beyond the Area Files it was necessary to compile potential area bibliographies and to secure and search the sources. Works were utilized on a regular basis in German, French, Portuguese, Chinese, Japanese, and Dutch, in addition to English. Materials in Arabic, Korean, Italian, and Russian were also utilized in special cases. In only a very few cases, when primary source materials could not be obtained, were selected secondary or summary works utilized.

The over-all quality and quantity of available resource materials were graded by the researchers on each particular society and these evaluations incorporated into the Food Habits Cultural Summaries. In some cases, societies were rejected from the final results when the evaluations of the resource materials indicated such low quality as to prejudice the over-all standards of the study.

Referencing: Although each item of information in each category of the food data sheets is referenced, it proved impossible to provide this reference on the Food Habits Tables, except to give the major source number for each data sheet, represented by a single entry on the table. This source number refers to the bibliography following each Food Habits Cultural Summary. Thus a researcher using the Food Habits Tables can reasonably expect to find the exact source reference for any specific item of information by consulting the source reference. In a fair number

of cases, however, although a single data sheet might contain information gathered from one major source and several minor sources, no provision could be made for giving more than the major reference. The complete references for each item, including page numbers, are on file at HRAF and can be made available at any time.

Data Quality Control: The basic problem of quality control was to ensure comparable interpretation and research techniques among the various workers on the project. The problem was especially acute due to the wide range of information sought and the difficulties inherent in converting discursive textual information into quantified machine-readable data.

The basic approach used was to concentrate on rational original research design and to make all decisions on data handling into permanent records, available to all involved. Staff meetings were held almost daily during the early part of the program to ensure equal participation in and knowledge of all questions raised and decisions reached by the group. Gradually the need for time-consuming staff meetings lessened as overall familiarity with the concepts increased. A detailed and exhaustive Guide for researchers was prepared, which in revised form is incorporated into this report as the Guide to Food Habits Tables.

A further technique for ensuring uniformity of usage was to channel all data packets (containing Food Data Sheets, Food Culture Data Sheets,

bibliographic forms, nutritional analysis, maps, and miscellaneous xeroxed data) through a single member of the team for final checking and editing. This individual, the botanical and zoological nomenclature expert, maintained a card file of food source name decisions. For example, since there are no botanical distinctions between the plants commonly called squash or pumpkins, it was decided to call all varieties of Cucurbita "squash." The plant that is alternately called cassava, yuca, manihot, etc. in the literature is always referred to in this study as "manioc." In other cases, decisions had to be made devising new standard names for plants with identical names but with basically different botanical antecedents. Taro, for example, is a general name for at least 3 different botanical species. Equally troublesome problems in regard to names for animals, fishes, and insects were encountered (see Vol. I, Chapter 3 on Botany and Zoology Taxonomy).

Individual differences among the researchers in respect to their willingness to make research decisions were also of some concern, though this could not be termed a crucial problem. Some researchers tend to demand more nearly absolute confirmation of data before they are willing to record it. In general, the staff was instructed to be conservative in the amount of interpretation employed, consistent with obtaining useful results. Particular instructions were given to avoid generalizing within a known area. That is, even though it might be

known that a particular foodstuff is widely spread or nearly universal in an area, nothing was to be taken for granted, and foods were to be recorded only if sources specifically identified them as present and consumed. The result of this policy has been to produce more "no information" results than might have been possible with less strict adherence to the rule of nonextrapolation. This situation has the advantage of keeping misleading information to a minimum. In a sense, of course, all results of a quantified nature derived from discursive textual materials may be described as an extrapolation.

Several tests were made (in some cases inadvertently) of the reliability of the coding. These tests came about when two researchers, each without knowledge of the other's work, compiled data sheets on the same society. When compared item for item, the duplicated data sheets were found to differ only in minor details. Major class coding was identical except for one case, in which one researcher utilized subprimary for three root crop staples with root crops general as the primary, whereas another worker had classed all three as primaries. In some cases, one worker had entered "no information" for categories which another had filled with substantive data. It was not possible to determine specifically whether this was a failure to locate the data, a refusal to extrapolate, or an overextrapolation. Repeated checking

failed to discover any patterns of data collection by specific researchers except that certain individuals obviously are less willing than others to "push" the data. On the whole, the data presented are fully comparable. Within the limitations imposed by unequal descriptive literature, it is realistic to assume that the tabulated data reflect the actual situations in the various ethnic and socio-cultural units covered.

Time Depth: The data are presented in the ethnographic present. That is, the most recent materials were employed and older data were used only to substantiate or confirm change or lack of change. Source materials were evaluated in terms of the acculturation situation. In some cases, where contacts with Western civilization have been at a minimum, older sources were used. In others, where change has been rapid and intense, only the very latest sources were utilized. As a base line, subject to the above conditions, no materials of pre-1900 vintage were used under any circumstances. Sources before 1930 were rejected except in very special situations where acculturation effects could be assumed as minor and where no new data were available. Material more than 15 years old has been indicated on the Cultural Summaries as being out of date.

Data Handling: All data for the Food Habits Tables were transferred

on the premises from the original data sheets to IBM punch cards. Each data sheet required three IBM cards to allow for all information, including names which were spelled out with a minimum of abbreviation. The punched data were then transferred to magnetic tape for computer processing. The first computer print-out run was proofread for errors and mislocations of data. The final runs were then made. The tabulation producing the Food Habits Tables (Vol. II) was followed by another run to produce the frequency tabulation reported in the following chapter (Chapter 2, Vol. I).

Surveys and Special Reports: When the specific data had been collected, the researchers then produced brief Area Surveys to provide background and general information on the major areas involved. Special reports by the taxonomist and the nutritionist are also included.

Personnel: The project was fortunate throughout to obtain skillful and well-trained personnel. Though the majority of the 12 researchers involved were anthropologists, several other disciplines were represented, i.e. sociology, political science, botany-zoology, German, and nutrition. The technical staff contributed to an exceptional degree of excellence. The following personnel list includes all individuals on the regular HRAF payroll who directly contributed to the study:

Principal Investigator:	Areas of Investigation
Frank W. Moore, Ph.D.	Oceania, Middle America
Research Associates:	
Frank M. LeBar, Ph.D.	Oceania, Southeast Asia
Hesung Koh, Ph.D.	Asia
Peter J. Wilson, Ph.D.	Caribbean, Madagascar
James R. Leary, Ph.D.	South America
Research Coordinator:	
Timothy J. O'Leary	India, South America, Africa
Research Assistants:	
Robert O. Lagacé	Africa
Sarah Frommer	Africa
Shirley van Buiren	Africa
Amal Vinogradov	Middle East, India, Africa
George Bedell	Middle America
Anne Hall	Botany-Zoology Taxonomy
Jeanne Nagle	Nutrition
Technical:	
George Bedell	Computer and Systems
Ella Gibson	Key Punch and Typing
Helen Reed	Typing
Gladys Page	Typing
Josephine DePonte	Xerography

Illustration I

Initials: AV

T | OWC: MEAIAI | SERIAL: AAI | BINOMIAL: OVIS/ARIES

COMMON NAME: SOURCE: SHEEP

NATIVE NAME: SOURCE:

COMMON NAME: FOOD STUFF: MEAT

NATIVE NAME: FOOD STUFF: LAHM

I Major Class F 1 41		II Distribution by Locality of Food Stuff		III Plentifulness (see II) of Food Stuff		IV Procurement of Food Stuff		V Prestige Value of Food Stuff	
	0	No. Info.	0	No. Info.	0	No. Info.	0	No. Info	0 X
Primary	1	Universally Available	1	Surplus	1	Gather	1	Very high	1
Sub-Primary	2	Generally Available	2 X	Abundant	2	Raise	2 X	High	2
Secondary	3 X	Locally Available	3	Adequate	3 X	Import	3	Medium	3
Complement	4	Not Available	4	Scarce	4	Gather-Raise	4	Low	4
Rejected	5		5	Very scarce	5	Gather-Import	5	Variable	5
Other	6		6	Non-existent	6	Raise-Import	6	No distinction	6
	7		7		7	Gather-Raise-Import	7		7
	8		8		8	Other	8		8
	9	Not Applicable	9	N.A.	9	N.A.	9	N.A	9

VI Character of Food Stuff (A)		VII Character of Food Stuff (B)		VIII Other Uses of Food Stuff		IX Color of Food Stuff		X Number of Other Methods of Preparation of Food Stuff	
No. Info.	0	No Info.	0	No Info.	0 X	No Info.	0 X	No Info.	0
Cereal	1	Fish	1	Medicinal	1	Red - Orange	1	None	1
Roots and misc. starch	2	Milk and products	2	Ritual	2	Yellow	2	Raw	2
Fruits	3	Fats, visible animal	3	Stimulant/Depressive	3	Green	3	Few	3
Sweets	4	Fats, visible vegetable	4	Medicinal-Ritual	4	Blue - Purple	4	Many	4
Legumes	5	Eggs	5	Medicinal - S/D	5	Whitish	5	Raw-few	5 X
Nuts	6		6	Ritual S/D	6	Brownish	6	Raw-many	6
Vegetables	7		7	All above	7	Black	7		7
Meat	8 X	Other	8	Other	8	Other (or varied)	8		8
N.A.	9	N.A	9 X	N.A.	9	N.A.	9	N.A.	9

XI Toxicity of Food Stuff		XII Main Method of Preparation A		XIII Main Method of Preparation B		XIV Main Method of Preparation C		XV Main Method of Preparation D	
No Info.	0 X	No Info.	0	No Info.	0	No Info.	0	No Info.	0
Rejected	1	Cook	1	Cook	1	Cook	1	Cook Raw	1 X
Removed	2	Wash - Soak	2	Wash - Soak	2	Wash - Soak	2	Wash - Soak	2
Counteracted	3	Age	3	Age	3	Age	3	Age	3
Adapted to	4	Pound - Separate	4	Pound - Separate	4	Pound - Separate	4	Pound - Separate	4
Avoided periodically	5	Mix	5	Mix	5	Mix	5	Mix	5
	6	Dry	6	Dry	6	Dry	6	Dry	6
	7	Cake	7	Cake	7	Cake	7	Cake	7
	8	Other	8	Other	8	Other cut up	8 X	Other	8
N.A.	9	N.A.	9 X	N.A.	9 X	N.A.	9	N.A.	9

XVI Preservation of Dish F		XVII Reconstituted Shape of Dish		XVIII Overall Acceptability of Dish		XIX Demographic Differentiation in Use of Dish		XX Sex of User of Dish	
No Info.	0	No Info.	0	No Info.	0	No Info.	0	No Info.	0
Drying - Smoking	1	Flat	1	Highly Preferred	1	Urban primarily	1	Males only	1
Salting - Sugaring	2	Loaves	2	Preferred	2 X	Rural primarily	2	Females only	2
Freezing	3	Spherical	3	Accepted readily	3	Upper class primarily	3	Males primarily	3
Sealing	4	Sticks	4	Acceptable substitute	4	Lower class primarily	4	Females primarily	4
Pickling	5	Noodles	5	Disliked	5	Special groups primarily	5	No differentiation	5 X
Cooking	6	Varied	6 X	Variable	6	2 or more of above	6		6
Store only	7		7	No Preference	7	No differentiation	7 X		7
Other	8	Other	8	Other	8		8		8
N.A.	9 X	N.A.	9	N.A.	9	N.A	9	N.A.	9

XXI Age of User of Dish		XXII Food Taboos on Dish		XXIII Seasonal and Daily Frequency of Dish		XXIV Taste of Dish		XXV Odor of Dish	
No Info.	0	No Info.	0	No Info.	0	No Info.	0 X	No Info.	0 X
Infants primarily	1	Absolute	1	Regularly in Season	1	Salty	1	Spicy	1
Children primarily	2	All people some time	2	Regularly no Season	2 X	Piquant	2	Sour	2
Adolescents primarily	3	Some people all time	3	Occasional in Season	3	Bitter	3	Sweet	3
Adults primarily	4	Some people some time	4	Occasional no Season	4	Sour	4	Foul	4
Elderly primarily	5	None	5 X	Emergency only	5	Strong	5	Mild	5
All but infants	6		6	Special Occasions only	6	Tasteless	6	Odorless	6
All other combinations	7 X		7	3-4 times/week	7	Sweet - Nutty	7		7
No differentiation	8		8		8	Other	8	Other	8
N.A	9	N.A.	9	N.A.	9	N.A	9	N.A	9

XXVI Diurnal (in season) Dish		XXVII Texture of Dish		XXVIII Travel (Dish)		XXIX Dish used in Composite Dishes		XXX	
No Info.	0	No Info.	0	No Info.	0 X	No Info.	0	No Info.	0
Meal food	1 X	Liquid	1	Travel Only	1	Never	1		1
Snack	2	Viscous	2	Travel Also	2	Sometimes	2		2
Undifferentiated	3	Soupy (lumpy)	3		3	Seldom	3		3
	4	Meshed	4		4	Often	4 X		4
	5	Gelatinous	5		5	Always	5		5
	6	Solid-Brittle	6 X		6		6		6
	7	Granular	7		7		7		7
	8	Other	8		8		8		8
N.A	9	N.A.	9	N.A.	9	N.A.	9	N.A	9

COMMON NAME: DISH: MUTTON, BROILED

NATIVE NAME: DISH: LAHM MISHWI

Reference: 1 | 2 | 3 | 4

AAI 1:41

1. IDENTIFICATION			2. LOCATION				3. DEMOGRAPHY	
MEA1	1	N 34 E 36 05 09					1952 00000 581	
T OWC Number	Sub No.	Latitude	Longitude	Min. Alt.	Max. Alt.		Year of Census	Total Population

AV

Names & Information Area Al-Munsif :

A Christian Greek-Orthodox farming village in N. Lebanon. Large number of inhabitants spend most of the year working in the cities of Beirut and Tripoli respectively. 1:26.

Nation Lebanon
Division Province of Mount Lebanon
Range & Area

Village lies in dry limestone area. All water utilized is winter rain collected from the roof tops and stored in large cisterns. Climate is of the classic Mediterranian type: chilly rainy winters and hot rainless summers. 1:21

Trends & Comment

Author's census for 1956. 1:47

est. for pop. of 15.
Lebanon: 1,575,000. Pop. density, Ky = 490/sq mi.

4. FOODS

Bread is the most important single item of food both in its nutritive value and the attitude towards it: "a meal is not a meal if there is no bread." 1:40

Raw meat is eaten occasionally and in very small quantities always mutton; often the specialized organs such as liver and lungs are cut into small pieces, dipped in salt and eaten with bread. 1:42

Sheep are killed only on Sunday and the meat is immediatly bought and consumed, they prefer their meat fresh. Pork and beef are not eaten at all. (no taboos, simple unavailability). 1:42

Tea is taken very sweet and milk is never added to it. Coffee is of the "turkish type", thick and served very hot and sweetened to the drinker's taste. 1:42

The bulk of their olive crop is processed into olive oil which is used both to cook and fry all the dishes and as dressing for the almost daily vegetable salad they eat, 1:42

guests are always offered coffee and often sweets. 1:28

5. COMBINATIONS

Halaawi: a great delicacy obtained from the city is a hard cake that flakes when cut and whose essential ingredients are sugar and mashed sesame seeds. It is very sweet & rich and often eaten with bread. 1:42

Tabuuli is a special popular salad that has mixed greens chopped fine and tossed with cracked wheat that has been previously soaked. The dressing is mixture of lemon juice & olive oil 1:42

6. ORIENTATION

Bread is the "staff of life" and there are set attitudes associated with it, " if you do not eat bread at every meal you'll go hungry". 1:40

There seems to be a general notion that cool foods are preferable in hot weather and hot foods in cool weather, but this is not strictly followed. 1:42

hospitality in food is important part of culture. 1:28

7. HABITS

Villagers regularly eat three meals a day., of which the evening is the largest, except on Sunday when the lunch is main meal. Breakfast is likely to include leftovers from preceding evening meal. Bread is eaten at every meal: eater tearing small piece and holding it between finger and thumb and reaches out to common dish for food. Lunches tend to be small for men and boys who work in fields take thier lunches with them. 1:39

8. CHANGE

Diet is one of most conservative and least acculturated aspects of their material culture. Cooking and serving utensils have been heavily influenced but this only for purposes of more efficiency rather than innovation. 1:43

The villagers see no purpose in changing their basic diet. It satisfies them physically and gastatorially. 1:151

9. NUTRITION

The villagers give the impression of being in excellent health and there is no evidence of physical or mental defects. Medical practices are utilized as a matter of course, two villagers have been doctors before their retirement. 1:54

Every adult consumes 1-2 lbs of bread a day. 1:40

10. ANTHROPOPHAGY

Historic
- [ ] Pres.
- [ ] Abs.

ND info

Current
- [ ] Pres.
- [ ] Abs.

11. NARCOTICS

Majority smoke cigarettes and some of the older ones smoke the water pipe. 1:103

12. CONTAINER

varied.

Illustration III

OWC ME 1A1 No. 1

Author John Gulick

Title Social Structure & Culture Change in a Lebanese Village

Journal, Series &c. Viking Fund Publications in Anthropology No. 21

Editor

Publisher Wenner-Gren Foundation For Anthropological Research

Date 1955 Place New York Pages 191

Call No. HRAF Files

OWC No.

Author

Title

Journal, Series &c.

Editor

Publisher

Date Place Pages

Call No.

OWC No.

Author

Title

Journal, Series &c.

Editor

Publisher

Date Place Pages

Call No.

OWC No.

Author

Title

Journal, Series &c.

Editor

Publisher

Date Place Pages

Call No.

OWC No.

Author

Title

Journal, Series &c.

Editor

Publisher

Date Place Pages

Call No.

OWC No.

Author

Title

Journal, Series &c.

Editor

Publisher

Date Place Pages

Call No.

OWC No.

Author

Title

Journal, Series &c.

Editor

Publisher

Date Place Pages

Call No.

Illustration IV

FS5R1

HRAF FOOD STUDY QUESTIONNAIRE

YOUR NAME William Smith Culture Santa Cruz Island

Common name of source and/or Binomial Yam Dioscorea Alata

Native name of source Hei Kū

Common name of foodstuff Tuber Native name of foodstuff —

1. Is the foodstuff: obtainable throughout the territory of the group you are reporting on X only locally obtainable ___. If generally obtainable, is is also: abundant X adequate ___ scarce ___. If only locally obtainable is it at the same time: abundant ___ adequate ___ scarce ___.

2. Is the foodstuff: gathered, collected, or caught ___ raised X imported from outside the group ___.

3. Is the foodstuff: high prestige (e.g. caviar) ___ low prestige (e.g. pig ears) ___ variable ___ no distinction X

4. Characterize the foodstuff (e.g. cereal, root, vegetable, milk, etc.) Root

5. Are other uses made of the foodstuff, e.g., medicinal, ritual, stimulant, etc. Ritual

6. Indicate the color of the foodstuff (e.g., red, brownish, speckled grey, etc.) Varies - blue, white, brown

7. Is the foodstuff known to be, or thought to be toxic NA. If so, is it: rendered harmless by removal of the toxic agent ___ counteracted by eating in combination with some other foodstuff ___ thought to be toxic only during certain periods and thus only partially avoided ___.

8. Indicate here methods of preservation or storage of foodstuff. Suggested terms: drying, smoking, salting, pickling, canning, etc.
Stored in racks

9. Indicate the most frequent method of preparing the foodstuff for eating by writing in the numbered spaces below the successive processes in the order in which they are undertaken. Suggested terms: boil, steam, bake, marinate, ferment, age, pound, peel, grate, mix, dry, mold. If foodstuff is always eaten raw, indicate this on the first line.

1. Wash + Peel 2. Wrap in leaves 3. Bake in Earth oven 4. —
5. — 6. — 7. — 8. —

10. Indicate here additional or alternative methods of preparation: there is no method other than the one indicated above ___ a few additional methods X many additional methods ___ foodstuff can be eaten raw in addition to being prepared in one or more ways ___.

11. Once a foodstuff is prepared for eating it is termed a dish. Indicate below the names of the dish (e.g. pudding, stew, bread, boiled meat, etc.)
Common name of dish Baked Yam Native name of dish —

12. Characterize, if appropriate, the reconstituted shape of the dish, e.g., loaves, balls, etc. NOT Reconstituted

13. Is the dish: highly preferred ___ preferred ___ accepted readily X disliked ___ eaten only in emergency ___ no preference expressed ___.

14. Is the dish consumed primarily in: urban areas ___ rural areas ___ upper class ___ lower class ___ special (e.g., regional) groups ___ no differentiation X.

15. Is the dish consumed by: males only ___ females only ___ primarily males ___ primarily females ___ no differentiation X.

16. Is the dish consumed by: (primarily) unweaned infants ___ children ___ adolescents ___ aged ___ all but infants X no differentiation ___.

17. Are taboos imposed on consumption of the dish? Y If so, do they apply to: all of the people some of the time ___ some of the people all of the time ___ some of the people some of the time X.

18. Is the dish consumed: pretty regularly when in season ___ only occasionally when in season ___ pretty regularly throughout the year ___ only occasionally throughout the year ___ on special (e.g. ritual, festivals, etc.) occasions only (specify) ___

19. Indicate if possible the taste of the dish by checking one of the following: salty ___ piquant ___ bitter ___ sour ___ strong ___ tasteless ___ sweet-nutty ___ other (specify) bland

20. Indicate if possible the textural appearance of the dish by checking one of the following: liquid ___ viscous ___ soupy (lumpy) ___ mashed ___ gelatinous ___ solid-brittle X granular ___ other (specify) ___

21. Indicate if possible the odor of the dish by checking one of the following: spicy ___ sour ___ sweet ___ foul ___ mild ___ odorless ___ other (specify) musty

22. Is the dish usually consumed: as part of a regular meal ___ as a between meals snack ___ undifferentiated X.

23. Is the dish used as a travel food: exclusively ___ occasionally X never ___.

24. Is the dish combined with other dishes to make a more complex dish (e.g. noodles & meat to make lasagna): always ___ often X sometimes ___ never ___.

Additional comments: Yam is staple crop from August - January. Several variation used

Illustration Va

F54R

HRAF FOOD STUDY
FACE SHEET

Your name Robert L. Carneiro **Name of culture** Kuikuru

Inclusive dates of field work or residence in the field August 1953 -- March 1954

Organizational affiliation (if any) during field period graduate student, University of Michigan

1. **Name of the tribe or group you are reporting on. If it is part of a larger tribe or group, include this name also, e.g., Temiar as a subgroup of Senoi. Include alternative names by which the group is known.**

Kuikuru (Cuicuru, Cuikuru) not part of larger tribe

Do your data refer primarily to some segment of the society, e.g., to a particular town or village; to rural or urban primarily; to upper class rather than lower class. If a town or village, give the name. The Kuikuru consist of one village.
To what extent do you think your data apply to the overall culture unit named above?

There is only one village of Kuikuru in existence.

2. **Locate the group by latitude and longitude if possible.** 12° 33' So. 53° 6' W

If possible, give approximate minimum and maximum altitude of the area normally exploited by the group.

800 feet ± 50

Give the name of the country or political entity in which the group is located. Be as specific as possible, e.g., the Meo in Chiengmai Province of north Thailand. northeastern part of State of Mato Grosso, Brazil

3. **Estimate as best you can the size or range of the territory normally exploited, e.g., in square miles, or by comparison -- "about the size of Rhode Island" or "two days by mule to cross the Lawa territory."**

50 square miles

4. **Estimate the total population of the specific group you are reporting on, e.g., Temiar Senoi rather than Senoi as a whole. Include the date of estimate, e.g., "about 500,000 in the 1920's." [Use community or village population if this seems more appropriate.]**

Kuikuru village had 145 persons in 1954

5. **Give names of surrounding groups with which there is much contact and/or intermarriage.**

Kalapalo, Matipú, Yawalapiti'

6. **Characterize the environment as best you can by checking combinations of items listed below:**

tropical	✓	forest	✓	island - "high"	—
temperate	—	grassland	✓	island - "low" (atoll)	—
arctic	—	scrub	—	maritime	—
high plateau	—	desert	—	lacustrine	✓
lowland	✓	steppe	—	mountain	—

7. **Characterize the economy by numbering one or more of the following, according to relative importance (No. 1 most important).**

hunting	3	seed agriculture	3
gathering	4	root agriculture	1
fishing	2	arboriculture	—
		pastoral	—

8. **Characterize, if possible, the general cultural orientation toward food, e.g., epicurism; fasting; elaboration as in methods of preparation.**

food, like all pleasures in life, is to be enjoyed; a certain amount of elaboration occurs in food preparation, but only to vary and enhance the diet, not as a ritual; fasting occurs at times of childbirth.

Illustration Vb

9. Are there specific mealtimes, and if to how many and at what time of the day or night.

There tend to be three mealtimes a day, 6-7 a.m., 11a.m-1p.m. and 5-6p.m, but there is a good deal of eating between these times, when persons feel hungry.

Is much attention paid to mealtime etiquette or ceremonial. If so, characterize briefly.

There is very little formal ritual, but some etiquette that is generally followed. One should avoid visiting someone while he is eating, and if he does should refrain talking to or staring at the person. A Kuikuru family likes privacy when it eats

Do the sexes eat together or apart. Usually the men are served first, and they begin to eat immediately. But if they finish serving the men before they're pretty well finished eating, the women will join them

10. State, if possible, your estimate of the culture's resistance or amenability to change in diet. Examples of introduced foods accepted or rejected.

The Kuikuru have a passion for sweets, and anything sweet will be readily accepted. They also like salt, and would probably take to salty items easily. With respect to grains and fruits, they probably would be ready to experiment with eating new things, but wouldn't raise them unless it were easy. Leafy vegetables they never have and would probably avoid. Meat, except for monkey meat, they won't touch, and this would be a difficult aversion to change. They have taken readily to rapadura (brown sugar candy), sugar cane, rice, beans, although these have not become established in the culture.

11. Estimate, if possible, the nutritional status of the people, underfed, malnourished, diet adequate, etc. Mention specific nutriments known to be lacking or abundant in the diet.

From the point of view of calories, the Kuikuru are very well off. There is never a shortage of food. Qualitatively, they seem well off also, but it is harder to be sure. Almost their only source of protein is fish, which provides something like 15% of their diet. (Meat provides less than 1%). Their staple food, manioc, which provides 80-85% of their food, is almost pure carbohydrate (1-2% protein, negligible mineral content). If we judge from physique, vigor, and activity, then the Kuikuru must be considered very adequately fed.

12. Check whether cannibalism is present ____no____ or was present some tenuous evidence that it was present in the past – several centuries ago

13. List any narcotics or nonnutritive stimulants used regularly, e.g., coca, tobacco, betel.

Tobacco is smoked by the 5 shamans in the village as part of their curing and diving ritual, and also every evening at a shamans' gathering. No one else in the society smokes. There are no other narcotics or stimulants.

14. Indicate the extent to which foods are packaged or contained for storage, preservation or transport. Which foods are so treated? What is the nature of containers, e.g., leaves, wood bowls, baskets, skins, etc. For ordinary trips, manioc flour is carried in large gourd half bowls. For storage in the village, ears of corn (for seed corn) are tied by the husks and slung over a special scaffold high inside the house. Coarse manioc flour, in the form of loaves, is stored in a large, open-meshed basket, with no lining, usually. Fine manioc flour (tapioca) is stored loose inside a vertical, cylindrical side-like basket lined with leaves. Piqui fruit pulp is stored in the latter type of storage basket under a shallow part of the lake

15. List below those items in the diet which you feel are at all significant. Characterise each by one of the following symbols: (A) a major source of total food supply (B) important but not a staple (C) marginal (D) "go-with" or complementary food, e.g., fish paste, chilies (E) delicacy.

(A) manioc
(B) maize
(C) sweet potatoes
(C) beans
(D) peppers (Capsicum sp.)
*(B) piqui fruit
(C) mangaba fruit
(E) monkey meat
(A) fish
*(B) turtle eggs
(C) turtles
(C) wild fruit
(E) wild grasshoppers

* seasonally important

16. List here foods usually eaten in combination, e.g., meat and potatoes; rice and fish paste; or, as in much of Africa, a main, starchy dish together with a side dish ('sauce').

beiju (manioc cake) and fish paste

17. List any food items which you know to be specifically rejected by the culture, e.g., pork among Malays; milk among Chinese. Indicate by (T) if the rejection involves a religious taboo. meat (except for monkey meat)

Chapter 2

RECOMMENDATIONS AND ANALYSIS

At the outset of this project it was hoped that a series of firm recommendations for food items to be included in supply packages could be made for a limited number of major areas. During the course of collecting data it was discovered that in almost every major area some definite patterns of food preference did emerge but that numerous exceptions could always be found. In short, there is no possible food package assortment that will please every culture. The best that can be expected is that for each major area, a food assortment can be devised which will please the optimum number of different groups. There is no assurance that a package pleasing to the largest number of groups will not seriously displease certain other groups. Therefore, optimum packaging recommendations must consider not only preferences, but dislikes as well and will in the final analysis be a sort of least common denominator.

The recommendations below must be understood to have only statistical validity. That is, the recommended packages will in most cases be acceptable, but in any given case may prove unacceptable. The Food Habits Tables should be consulted in every specific case for exceptions.

Some general recommendations as to types of food can also be made.

1. Foods with which natives are already fully familiar should be supplied with a minimum of pre-processing done. The presentation of raw or only partially processed foodstuffs will enable ritual and/or traditional processing and cooking to be performed by the natives.

2. Foods with which the natives are unfamiliar should be avoided if possible but if it is found desirable to use foods of this sort they should be presented in ready to consume form to prevent problems of preparation.

3. Prepared foods should contain, as a general rule, as little seasoning or spices as possible.

4. Seasonings and spices, particularly "hot" spices should be provided separately since many groups will refuse foods which are not highly seasoned or if they are unable to obtain seasoning.

5. Natives generally desire a "full" feeling. Bulky foods are considered essential. Concentrates, no matter how nutritiously sound, will not be acceptable.

6. Oil in one form or another, very often "fishy" is almost universally desired. Canned meats and fish should have a good quantity of visible oil.

7. Canned fish is generally more acceptable than canned red meat, particularly in Moslem or Moslem-influenced areas since fear of contamination from pork is common. Vegetable oils for canning are also wise.

8. Among red meats, beef, mutton, and pork in descending order are most apt to be acceptable. In general, except in Oceania and India, beef is much safer than pork in terms of acceptability.

9. Chicken or other fowl is undoubtedly the least offensive of all meats, except in east Africa and areas of west Africa.

10. Contents of packages, in detail, should be printed on labels. Since most natives will be unable to read English labels, clear pictures of the type of animal or plant from which the food is derived will be helpful in dispelling native prejudices against packaged foods. In regard to pictures used, artistic merit should be secondary to clear uncluttered simple representation. Also, representations should be selected carefully. For example, a prize purebred American Aberdeen angus steer has very little resemblance to the usual underfed grade native cow.

11. In some situations natives will insist on certain types of food not available to the supplying agency. For example, sago is considered by some groups to be the only "real food." In these

cases it may be possible to devise an "artificial sago" (so labeled) which will be an acceptable substitute. Care should be taken, however, to avoid overselling such substitutes. These cases will be relatively rare, fortunately.

12. It may often be helpful in attaining acceptance of supplied foods if American personnel are observed consuming the identical items (with pleasure, if possible).

Specific Recommendations: On a world-wide basis it is statistically reasonable to recommend a food package containing rice (non-glutinous), chicken, squash, condiments (salt, chilies), and tea or coffee. This assortment will be acceptable to the greatest number of different groups (with the largest populations) and will offend the smallest number of groups. This basic package contains a diet adequate for most purposes and will, depending on amount, offer a diet superior in native eyes to that which they customarily are able to obtain.

Alternately, maize could be substituted for rice. Maize, though a primary food to a larger number of societies than rice, has, however, a lower acceptability rating. Maize has a further disadvantage in that it has very widely diverging methods of

preparation. Dry whole grain maize is relatively difficult to prepare for human consumption and corn meal would be totally unacceptable in many areas. In addition very special types of maize are required for many native dishes such as tortillas, atole, tamales, etc.

Fish could be substituted for chicken and would be acceptable to a large number of groups. Chicken is, however, more generally appreciated and the distribution of non-chicken eaters (Cushitic east Africa and women in parts of West Africa) is more regular and predictable than is the case with non-fish eaters.

Sweet potatoes, bananas, beans, peanuts, papaya, mangoes, onions or tomatoes could be substituted for squash but all have a more restricted range of acceptance.

Milk and eggs are both acceptable to a fairly large number of societies, but an almost equally large number of societies specifically and emphatically reject these products.

The following tables present data showing the relative acceptance of primary and secondary foods.

OVERALL TABLES

	Page
Primary, rank order	23
Secondary, rank order	25
Complementary, rank order	26
Imported, rank order	27
Taboos, rank order	28

Acceptability Scale

1. Highly preferred
2. Preferred
3. Highly Acceptable
4. Acceptable

PRIMARY (STAPLE) FOODS

Listed in Order of Occurrence By Classes (All Societies)

Note: Most societies have more than one primary food resource. Primaries listed for 5 or fewer societies not included.

Acceptability scale:

1. Highly Preferred
2. Preferred
3. Highly Acceptable
4. Acceptable

		No. of Occurrences	Acceptability Level
Cereals			
Maize		171	4
Rice (undifferentiated)	134		1
glutinous	9	161	2
nonglutinous	18		1
Millet		94	4
Sorghum		68	1
Wheat		46	1
Barley		19	3
Buckwheat		9	4
Hungry rice		5	1
Cereals, misc.		71	1
Roots and Tubers			
Manioc (undifferentiated)	38		4
bitter	36	106	4
sweet	32		4
Taro, true	41		4
giant	4	52	4
pulax	7		1
Potato, sweet		51	4
Yams		43	4
Potato, white		10	4
Aboriculture			
Bananas	49	84	4
Plantains	35		4
Coconut		43	4
Breadfruit		21	4
Dates		17	1
Sago		13	4
Pandanus		11	4
Legumes & Misc. Vegetables			
Beans		29	3
Cowpeas		5	1
Peanuts		5	1
Squash		10	4
Domestic Animals			
Cows and zebus		25	1
Fowl (ducks & chicken)		9	1
Sheep		9	1
Goats		8	1
Wild Animals			
Wild animals, misc.		19	2
Fish, misc.	94	105	1
Bonito	11		1
Elephant		5	1
Turtles		5	1

SECONDARY FOOD SOURCES (ALL SOCIETIES)

Listed by rank order of occurrence with acceptability ratings.

	Occurrences	Acceptability
1. Chicken (meat and eggs)	363	2
2. Squash	222	3
3. Cow (meat and milk)	196	3
4. Maize	187	3
5. Pig, domesticated	180	2
6. Goat	166	3
7. Potato, sweet	163	3
8. Banana	160	2
9. Fish (not including specified small)	159	2
10. Beans	137	2
11. Peanut	123	3
12. Sugar cane	120	2
13. Papaya	118	3
14. Rice	111	1
15. Sheep	108	2
16. Mango	107	3
17. Onion	104	2
18. Tomato	103	3
19. Coconut	98	3
20. Taro (all types)	87	3
21. Bee (honey, primarily)	86	1
22. Manioc (unspecified)	85	3
23. Pineapple	84	3
24. Yam	80	3
25. Cucumber	71	3
26. Duck (meat primarily)	67	2
27. Eggplant	66	3
28. Potato, white	66	3
29. Watermelon	66	2
30. Coffee	58	2
31. Okra	58	3
32. Tea	58	2
33. Plantain	55	3
34. Wheat	54	2
35. Cow, Zebu, female (milk primarily)	49	3
36. Orange	49	3
37. Deer	48	3
38. Cowpea	46	3
39. Palm, oil	46	2
40. Turtle (meat and eggs)	46	3
41. Cabbage	45	3
42. Baobab	44	1
43. Palm	44	3
44. Cow, Zebu (meat and milk)	43	3
45. Pea	43	3
46. Dog	42	3
47. Guava	42	3
48. Rat	42	2
49. Breadfruit	41	3
50. Garlic	40	3

	Occurrences	Acceptability
51. Melon	40	3
52. Mushroom	40	3
53. Crab	38	3
54. Fish, misc. small	38	2
55. Lemon	38	3
56. Lizard	38	3
57. Sesame	37	2
58. Guinea fowl	36	2
59. Tamarind	36	2
60. Bambara groundnut	35	1
61. Fig	35	2
62. Antelope	33	1
63. Grape	33	2
64. Manioc, sweet	33	3
65. Bamboo	32	2
66. Buffalo	32	2
67. Shrimp	32	3
68. Larvae, insect	31	3
69. Limes	29	3
70. Millet	29	3
71. Orange, sweet	29	3
72. Pig, wild	28	2
73. Turnip	28	3
74. Avocado	27	2
75. Chick-pea	26	1
76. Gourd, edible	26	3
77. Locust	26	3
78. Jackfruit	25	3
79. Sorghum	26	2

COMPLEMENTARY FOODS

Rank order list of foods used as condiments, sauces, etc. Foods are listed here when used as complements to other foods though they may also be listed under other headings in some cases.

	Occurrences	Acceptability
Chili Pepper (Capsicum)	171	2
* Salt	151	3
Sugar cane (sugar and juice)	62	2
Fish, misc.	57	3
Ginger	54	3
Coconut (grated, cream, etc.)	41	3
Garlic (seasoning only)	40	3
Sesame	38	3
Bees, misc. (honey primarily)	36	1
Palm, misc. (oil primarily)	35	2
Onion (seasoning only)	32	3
Sugar plant	32	2
Pepper, black	30	2
Peanut	22	3
Turmeric	22	3
Coriander	20	3
Cow (beef, milk)	18	3
Cloves	17	3
Soybean (soy sauce primarily)	17	3
Cardamon	16	2
Cinnamon	15	2
Lime (fruit)	15	3
Mint	15	2
Tamarind	15	3
Beans, misc.	14	3
Mustard	11	3
Okra (seasoning only)	11	3
Rice (as a condiment)	11	2
Bean, Locust, African	10	3
Grape (leaves and fruit)	10	3
Manioc (juice primarily)	10	3
Nutmeg	10	3
Chicken	9	3
Saffron	8	2
Shrimp	8	3
Squash	8	3

*Note: Salt appears to have often been ignored in field reports, consequently this figure is probably low.

IMPORTED FOOD PREFERENCES

Arranged in rank order by number of groups importing with acceptability ratings.

	Occurrences as imported	Acceptability
1. Salt	86	2
2. Sugar	70	2
3. Tea	63	2
4. Rice	46	1
5. Coffee	44	2
6. Cow (milk and beef)	42	3
7. Wheat (flour primarily)	34	2
8. Fish, misc. (mainly canned)	32	2
9. Cereals, misc.	17	2
10. Cocoa	11	2
11. Sardines (canned)	11	2
12. Banana	9	2
13. Beans	7	2
14. Onion	7	2
15. Chili Pepper	7	2
16. Shrimp	7	3
17. Orange	6	3
18. Grape	6	2
19. Peanut	6	3
20. Saffron	6	2
21. Cardamon	5	1
22. Date	5	2
23. Maize	5	2
24. Palm, oil	5	2
25. Soybean	5	3

FOOD SOURCES TABOOED

Arranged in rank order by number of groups with any type of taboos.

1. Animals, wild, misc.	114	
Monkeys, misc.	47	
Turtles misc.	45	
Snakes, misc.	25	
Deer, misc.	22	
Peccary	16	
Pig, wild	16	
Lizards, misc.	12	
Tapir	12	
Armadillo	11	
Frogs, misc.	10	
Leopard	10	415
Rat	9	
Antelope	7	
Hippopotamus	7	
Crabs	6	
Elephant, African	6	
Elephant, Asiatic	2	
Flying Fox	6	
Hyena	6	
Paca	6	
Agouti	5	
Crocodile	5	
Porcupine	5	
Squirrel	5	
2. Animal, domestic, misc.	7	
Chicken, domestic (eggs and meat)	75	
Pig, domestic	70	
Cow, domestic (milk and meat)	58	
Dog	29	
Goat	29	
Sheep	27	345
Duck	12	
Cow, Zebu	12	
Cow, Zebu, female	9	
Cat, domestic	9	
Horse	5	
Ass	3	
3. Plants, wild and domestic, misc.	88	
Palms, misc.	25	
Rice	25	
Taro	16	
Maize	15	
Coconut	14	
Banana	13	
Sugar cane	9	
Beans, misc.	7	
Mushroom	7	
Breadfruit	6	
Manioc (both)	6	

Squash	6	
Tomato	6	
Potato, sweet	5	258
Millet	5	
Peanut	5	
4. Fish, misc.	86	
Shark	11	
Eel	7	115
Bonito	6	
Catfish	5	
5. Birds, wild, misc.	51	
Pigeon	7	69
Vulture	6	
Rhea	5	
6. Other		
Bee, neuter	17	
Insects, misc.	15	44
Larvae, misc.	6	
Salt	6	

AREA TABLES

Acceptability Scale

1. **Highly Preferred**
2. **Preferred**
3. **Highly Acceptable**
4. **Acceptable**

AREAS

	Page
AFRICA	32
West	
West Central	
Southern	
East Central	
Nilotic Sudan	
MADAGASCAR	33
MIDDLE EAST	34
Western	
Southern	
Central	
Northern	
Eastern	
ASIA	35
Indian Sub-Continent	
Southeast Asia	
East Asia	
OCEANIA	36
Indo-Oceania	
Australia	
Melanesia	
Micronesia	
Polynesia	
MIDDLE AMERICA	37
SOUTH AMERICA	38
Northern Lowland	
Andean	
Southern Lowland	
Amazonia	
CARIBBEAN	39

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Agni, Bambara, Bobo, Bubi, Diola, Dogon, Ewe, Futajalonke, Guro, Kabure, Kissi, Konkomba, Lobi, Mossi, Dan, Senufo, Minianka, Tenda, Mende, Temne, Kpelle, Bete, Toma, Abron, Tallensi, Ashanti, Higi, Bini, Efik, Ibo, Jukun, Katab, Nupe, Tiv, Ife. Total – 35 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Antelope, misc.	-	-	12	2	-	-
Bambara Groundnut	-	-	11	3	1	3
Banana	2	3	14	3	1	3
Baobab	-	-	15	2	4	2
Beans, misc.	1	3	41	3	10	3
Bees (honey)	-	-	12	1	1	1
Birds, misc.	-	-	5	3	-	-
Cereals, misc.	7	2	-	-	2	2
Chicken	-	-	29	2	1	2
Coconut	-	-	6	2	-	-
Cow (milk and meat)	-	-	22	1	5	1
Cowpea	-	-	9	2	-	-
Dog	-	-	15	2	-	-
Ducks, misc.	-	-	9	2	-	-
Eggplant	-	-	5	3	-	-
Elephant	-	-	7	2	-	-
Fish, misc.	3	3	26	3	2	3
Goats	-	-	29	1	1	1
Gourds, misc.	-	-	6	2	1	2
Guava	-	-	5	3	-	-
Guinea fowl	-	-	15	2	-	-
Hippopotamus	-	-	5	2	-	-
Hungry Rice	2	2	7	2	-	-
Larvae, misc.	-	-	6	2	1	2
Lizard, misc.	-	-	7	2	-	-
Maize	9	3	18	3	1	3
Mango	-	-	12	3	-	-
Manioc	8	3	22	3	3	3
Millet, misc.	13	2	4	2	2	2
Monkeys, misc.	-	-	13	3	-	-
Okra	1	3	19	3	6	3
Onion	1	3	9	3	3	3
Orange	-	-	6	3	-	-
Palms, misc. (oil)	3	2	31	2	11	2
Papaya	-	-	12	3	-	-
Peanut	-	-	23	3	3	3
Pepper, chili	1	2	3	2	19	2
Pig, misc.	-	-	14	1	-	-
Pineapple	-	-	7	3	-	-
Plantain	7	3	6	3	-	-
Plums, misc.	-	-	5	2	1	2
Porcupine	-	-	7	2	-	-
Potato (colcus)	-	-	8	3	-	-
Potato , sweet	-	-	23	3	-	-
Rats, misc.	-	-	15	3	-	-
Rice	13	2	14	2	-	-
Salt	-	-	-	-	12	2

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Sesame	-	-	7	3	2	3
Sheep, misc.	-	-	26	1	1	1
Snails, misc.	-	-	7	1	-	-
Snakes, misc.	-	-	6	2	-	-
Sorghum	13	1	3	1	-	-
Sorrel, red	-	-	8	3	2	3
Squash	-	-	9	3	1	3
Sugar cane	-	-	5	2	-	-
Tamarind	-	-	3	2	3	2
Taro	7	3	12	3	-	-
Termites	-	-	7	1	-	-
Tomato	-	-	18	3	4	3
Yams, misc.	15	3	19	3	-	-

	Imported Foods	Acceptability	Taboos	Rejected
West Africa (35 cultures)				
Animals, misc.	-	-	28	8
Chicken	-	-	7	3
Cow (milk and meat)	6	1	3	2
Dog	-	-	5	2
Maize	1	3	1	-
Manioc	1	3	1	-
Millet	-	-	3	-
Palms, misc. (oil)	2	2	1	-
Peanut	1	3	1	-
Pig	-	-	4	-
Salt	11	2	-	-
Sheep	-	-	3	-
Sugar Plant (sugar)	2	1	-	-
Wheat	3	3	-	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Fang, Bafia, Banen, Koko, Podokwo, Wute, Banda, Ghanu Baya, Mandjia, Bambuti, Azande, Babwa, Bira, Dinga, Holoholo, Kuba, Mangbetu, Mongo, Reza, Bahutu. Total – 20 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Animals, misc.	3	2	6	2	1	2
Ants, misc.	-	-	8	2	-	-
Antelope, misc.	-	-	11	2	-	-
Bambara groundnut	-	-	8	2	-	-
Banana	7	2	12	2	-	-
Beans, misc.	-	-	15	2	-	-
Bees, (honey)	-	-	8	1	-	-
Birds, misc.	-	-	5	2	-	-
Buffalo	-	-	8	2	-	-
Chicken, misc.	-	-	18	3	-	-
Cow, misc.	-	-	4	2	1	2
Dog	-	-	9	2	-	-
Duck, misc.	-	-	6	3	-	-
Elephant, African	-	-	10	2	-	-
Fish, misc.	-	-	19	3	1	3
Goats, misc.	-	-	16	2	1	2
Gourds, misc.	-	-	4	2	1	2
Hippopotamus	-	-	4	2	-	-
Larvae, misc.	-	-	13	2	-	-
Leopard	-	-	6	3	-	-
Lizards, misc.	-	-	4	2	-	-
Maize	7	3	12	3	-	-
Mango, misc.	-	-	8	3	-	-
Manioc	15	3	16	3	3	3
Millets, misc.	5	1	9	1	1	1
Monkey, misc.	-	-	10	2	-	-
Mushroom, misc.	-	-	11	3	1	3
Okra	-	-	6	2	1	2
Palm, misc.	-	-	21	2	7	2
Papaya	-	-	5	2	1	2
Peanut	2	2	17	2	2	2
Pepper, chili	-	-	2	2	18	2
Pig, misc.	-	-	7	3	-	-
Pineapple	-	-	9	2	1	2
Plantain	3	3	8	3	-	-
Plants, misc.	4	2	8	2	7	2
Potato, sweet	3	3	12	3	-	-
Purslane	-	-	5	2	-	-
Rats, misc.	-	-	9	2	1	2
Rice, misc.	-	-	7	3	-	-
Salt	-	-	-	-	7	2
Sesame	-	-	5	3	1	3
Sheep, misc.	-	-	9	2	-	-
Snails, misc.	-	-	5	3	1	3
Snakes, misc.	-	-	5	3	-	-
Sorghum	5	2	3	2	-	-
Sorrel, misc.	-	-	8	2	-	-
Squash, misc.	-	-	14	3	1	3
Sugar cane	-	-	9	1	1	1
Taro	3	3	8	3	-	-
Termites, misc.	-	-	6	1	1	1

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Tomato	-	-	4	3	2	3
Yams, misc.	3	3	15	3	-	-
Yautia	-	-	5	4	-	-

	Imported Foods	Acceptability	Taboos	Rejected
West Central Africa (20 cultures)				
Animals, misc.	-	-	3	-
Antelope, misc.	-	-	2	-
Birds, misc.	-	-	2	-
Buffalo	-	-	1	-
Chicken, misc.	-	-	7	-
Cow, misc.	3	2	-	-
Dog	-	-	3	-
Duck, misc.	-	-	1	-
Elephant, African	-	-	3	-
Fish, misc.	-	-	5	-
Goats, misc.	-	-	4	-
Hippopotamus	-	-	4	1
Leopard	-	-	4	-
Lizards, misc.	-	-	-	3
Manioc	1	3	-	-
Monkey, misc.	-	-	3	-
Mushroom, misc.	-	-	1	-
Peanut	1	2	-	-
Pepper, chili	1	2	-	-
Pig, misc.	-	-	1	-
Porcupine, misc.	-	-	2	-
Rats, misc.	-	-	1	2
Salt	7	2	-	-
Sheep, misc.	-	-	4	-
Shrew	-	-	1	1
Snails, misc.	-	-	1	1
Snakes, misc.	-	-	4	1
Sugar cane	1	1	-	-
Sugar plant (sugar)	2	1	-	-
Tea	1	4	-	-
Turtle	-	-	2	1

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Mbundu, Fort Jameson Ngoni, Ndau, Lenge, Thonga, Yao, Swazi, Sotho, Ambo, Bushmen, Nama, Lovedu, Pedi, Pondo, Venda, Zulu. Total - 16 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Amaranth, misc.	-	-	5	3	-	-
Animals, misc.	6	1	5	1	1	1
Antelope, misc.	-	-	7	2	-	-
Bambara groundnut	1	3	7	3	-	-
Banana	-	-	5	3	-	-
Beans, misc.	1	3	11	3	1	3
Bee (honey)	-	-	7	1	1	1
Birds, misc.	-	-	7	1	-	-
Cereal plants	8	2	-	-	-	-
Chicken	-	-	12	3	-	-
Cow, misc.	3	2	11	2	2	2
Cowpea	2	3	5	3	-	-
Fish, misc.	1	2	6	2	-	-
Goat	-	-	17	2	-	-
Larvae, misc.	-	-	6	2	1	2
Locust, misc.	-	-	6	2	-	-
Maize	12	2	3	2	-	-
Manioc	4	3	3	3	-	-
Millet, misc.	2	2	3	2	1	2
Morula	-	-	9	2	1	2
Onion	-	-	6	3	-	-
Peanut	3	3	5	3	2	3
Palms, misc.	-	-	7	3	-	-
Pig	-	-	5	2	-	-
Plants, misc.	1	3	9	3	1	3
Potato, sweet	-	-	10	3	1	3
Rice	1	3	4	3	-	-
Salt	-	-	-	-	9	2
Sheep	-	-	9	2	-	-
Sorghum	4	2	5	2	2	2
Squash	1	3	9	3	2	3
Sugar cane	-	-	5	2	1	2
Tea	-	-	4	2	2	2
Tomato	-	-	7	3	1	3
Trees, misc.	-	-	11	3	1	3
Watermelon	1	2	7	2	1	2
	-	-				

	Imported Foods	Acceptability	Taboos	Rejected
Southern Africa (16 cultures)				
Animals, misc.	1	1	-	-
Antelope, misc.	-	-	1	-
Bambara Groundnut	-	-	2	-
Banana	-	-	2	-
Bee (honey)	-	-	1	-
Chicken	-	-	7	1
Cow, misc.	1	2	4	-
Fish, misc.	-	-	4	3
Goat	-	-	1	-
Maize	-	-	2	-
Pig	-	-	2	2
Plants, misc.	1	3	-	-
Potato, sweet	1	3	-	-
Rice	-	-	1	-
Salt	4	2	-	-
Sugar plant (sugar)	3	2	-	-
Tea	6	2	-	-
Wheat	1	2	-	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Ganda, Lango, Teso, Bantu Kavirondo, Dorobo, Kamba, Kikuyu, Luo, Masai, Suk, Turkana, Zanzibar, Bajuni, Chagga, Pena, Kindiga, Nyakyusa, Sukuma, Sandawe, Sonjo, Bemba, Ila, Lala, Tonga (Plateau), Nyamwezi, Safwa. Total - 26 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Animals, misc.	13	1	10	1	4	1
Bambara groundnut	-	-	6	3	1	3
Banana	3	3	8	3	-	-
Baobab	-	-	5	3	-	-
Beans, misc.	1	3	13	3	2	3
Bee, misc. (honey)	-	-	8	1	6	1
Cereal plants, misc.	9	3	2	3	1	3
Chicken	-	-	15	2	1	2
Cow, misc.	3	2	20	2	3	2
Cowpea	1	3	5	3	1	3
Cucumber	-	-	6	4	-	-
Duiker, misc.	-	-	8	2	-	-
Fish, misc.	5	3	12	3	1	3
Goat	2	2	17	2	1	2
Maize	10	3	9	3	-	-
Mango	-	-	5	3	-	-
Manioc	4	4	12	4	2	4
Millet, misc.	15	3	10	3	-	-
Mushroom, misc.	-	-	7	3	1	3
Orange	-	-	6	3	-	-
Papaya	-	-	5	3	-	-
Peas, misc.	-	-	10	3	-	-
Peanut	-	-	14	3	1	3
Plants, misc.	4	4	18	4	8	4
Potato, sweet	3	3	14	3	1	3
Rat	-	-	6	2	-	-
Salt	-	-	22	2	11	2
Sesame	-	-	5	3	3	3
Sheep	1	2	13	2	-	-
Sorghum	8	2	5	2	-	-
Squash	-	-	10	3	-	-
Sugar cane	-	-	4	2	2	2
Tea	-	-	4	2	1	2
Tomato	-	-	9	3	1	3
Turtles, misc.	-	-	5	1	-	-

	Imported Foods	Acceptability	Taboos	Rejected
East Central Africa (26 cultures)				
Animals, misc.	-	-	8	-
Banana	-	-	1	-
Beans, misc.	1	3	-	1
Bee, misc. (honey)	-	-	8	-
Chicken	-	-	9	1
Cow, misc.	-	-	6	-
Dog		-	2	2
Duiker, misc.	-	-	2	-
Fish, misc.	-	-	2	2
Goat	-	-	8	1
Hyena	-	-	3	4
Lion	-	-	2	-
Lizard	-	-	1	2
Lungfish	-	-	2	-
Maize	-	-	1	-
Millet	-	-	1	-
Mushroom, misc.	-	-	1	-
Pig	-	-	3	3
Plants, misc.	-	-	2	-
Salt	5	2	-	-
Sheep	-	-	10	-
Snakes	-	-	2	3
Steer	-	-	2	-
Sugar cane	-	-	1	-
Sugar plant (sugar)	4	1	-	-
Tea	8	2	1	-
Turtles, misc.	-	-	4	5
Wart hog	-	-	2	1
Zebra, misc.	-	-	2	-

NILOTIC SUDAN

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Dinka, Nuer, Shilluk. Total – 3 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Animals, misc.	1	1	-	-	-	-
Carp	-	-	1	2	-	-
Cereal plants	1	2	-	-	-	-
Cow, misc.	2	2	4	2	-	-
Cowpea	-	-	3	4	-	-
Fish, misc.	2	3	-	-	-	-
Gazelle	-	-	1	3	-	-
Goat	-	-	3	2	-	-
Hippopotamus	-	-	1	1	-	-
Lotus	-	-	1	3	-	-
Maize	1	5	1	5	-	-
Melon	-	-	1	4	-	-
Nile pike	-	-	1	2	-	-
Palm, Borassus	-	-	1	2	-	-
Plant, misc.	-	-	-	-	1	5
Salt	-	-	-	-	1	4
Sesame	-	-	2	4	-	-
Sheep	1	3	3	3	-	-
Sorghum	3	3	1	3	-	-
Squash	-	-	1	2	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Africa - Nilotic Sudan (3 cultures)				
Chicken	-	-	-	1
Cow, misc.	-	-	2	-
Salt	1	4	-	-
Sheat fish	-	-	1	1

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Androna Tsimihety, Betsileo, Antaisaka, Tanala, Comoros. Total – 5 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Avocado	-	-	2	3	-	-
Banana	1	3	4	3	-	-
Beans, misc.	-	-	5	4	1	4
Bee (honey)	-	-	2	1	1	1
Birds, misc.	-	-	2	2	-	-
Chicken	-	-	4	3	-	-
Coconut	1	3	2	3	-	-
Cow, misc.	-	-	6	2	-	-
Crab, misc.	-	-	2	3	-	-
Duck, misc.	-	-	5	3	-	-
Eel	-	-	3	2	-	-
Eggplant	-	-	2	4	-	-
Fish, misc.	1	3	4	3	-	-
Ginger	-	-	-	-	2	4
Goat	-	-	2	2	-	-
Goose	-	-	3	3	-	-
Grasshopper	-	-	2	2	-	-
Guava	-	-	3	3	-	-
Guinea fowl	-	-	4	3	-	-
Larvae, misc.	-	-	4	2	-	-
Lemon	-	-	2	3	-	-
Lemur	-	-	2	2	-	-
Maize	2	3	3	3	-	-
Manioc	1	3	4	3	-	-
Melon	-	-	2	3	-	-
Orange	-	-	3	1	-	-
Palms, misc.	-	-	3	3	-	-
Papaya	-	-	3	3	-	-
Pea, cajan	-	-	2	4	-	-
Peanut	-	-	3	3	2	3
Pepper, chili	-	-	-	-	5	3
Pig	-	-	5	4	-	-
Pineapple	-	-	3	2	-	-
Potato, sweet	1	3	4	3	-	-
Rice	5	2	-	-	-	-
Salt	-	-	-	-	5	2
Sheep	-	-	2	4	-	-
Squash	-	-	3	3	-	-
Sugar cane	-	-	2	1	1	1
Taro	-	-	3	4	-	-
Tenrec, misc.	-	-	4	3	-	-
Wheat	-	-	-	-	1	5
Yams, misc.	-	-	3	4	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Africa-Madagascar (5 cultures)				
Beans, misc.	-	-	1	-
Chicken	-	-	2	-
Crab, misc.	-	-	1	-
Duck, misc.	-	-	1	-
Ginger	1	4	-	-
Goat	-	-	1	2
Larvae, misc.	-	-	1	-
Lemur	-	-	1	-
Peanut	-	-	1	-
Pig	-	-	5	1
Salt	2	2	-	-
Sheep	-	-	1	1
Taro	-	-	1	-
Tenrec, misc.	-	-	1	-
Wheat	1	5	-	-
Yams, misc.	-	-	1	-

WESTERN MIDDLE EAST

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Fur, Batahin, Adamawa Fulani, Bororo, Hausa, Songhai, Dyerma, Diawara, Teda, Tuareg, Wolof, Lebu, Kabyle, Mzab, Shawiya, Mediouna, Rif. Total - 17 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Animals, misc.	7	2	9	2	-	-
Baobab	-	-	6	3	1	3
Beans, misc.	-	-	22	3	2	3
Bee (honey)	-	-	8	1	-	-
Camel, Arabian	-	-	5	3	-	-
Cereals, misc.	9	2	-	-	-	-
Chicken	1	3	9	3	-	-
Coffee	-	-	5	2	-	-
Cow, misc.	4	2	14	2	-	-
Date, wild	-	-	6	3	-	-
Eggplant, misc.	-	-	0	2	-	-
Fig	1	3	8	3	-	-
Fish, misc.	2	3	7	3	-	-
Garlic	-	-	6	3	1	3
Goat	1	2	19	2	-	-
Grape	-	-	5	2	2	2
Maize	1	2	7	2	-	-
Manioc	-	-	8	3	-	-
Millet, misc.	7	2	6	2	-	-
Okra	-	-	8	3	1	3
Olive	-	-	3	2	2	2
Onion	-	-	14	2	1	2
Palm, misc.	3	2	11	2	-	-
Peanut	-	-	9	3	3	3
Pepper, chili	-	-	7	3	10	3
Plums, misc.	-	-	7	3	-	-
Potato, sweet	-	-	7	3	-	-
Potato, white	-	-	5	3	-	-
Rice	-	-	6	3	-	-
Salt	-	-	-	-	6	2
Sesame	-	-	3	3	2	3
Sheep	-	-	16	2	-	-
Sorghum	8	1	1	1	-	-
Sorrel, red	-	-	7	2	-	-
Squash	-	-	12	3	-	-
Tamarind	-	-	5	2	1	2
Tea	1	1	5	1	-	-
Tomato	-	-	12	3	-	-
Watermelon	-	-	10	2	-	-
Wheat	3	1	6	1	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Western Middle East (10 cultures)				
Beans, misc.	1	3	-	-
Camel, Arabian	2	3	1	1
Chicken	-	-	2	1
Coffee	6	2	-	-
Cow, misc.	1	2	1	-
Dog	-	-	3	2
Fish, misc.	2	3	-	-
Grape	1	2	-	-
Manioc	1	3	-	-
Millet, misc.	-	-	2	-
Olive	1	2	-	-
Palm, misc.	2	2	1	-
Pig	-	-	5	5
Rice	1	3	-	-
Salt	5	2	-	-
Sheep	1	2	-	-
Sorghum	-	-	1	-
Sugar plant (sugar)	6	1	-	-
Tea	5	1	-	-
Wheat	1	1	-	-

SOUTHERN MIDDLE EAST

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Somali, Amhara, Falasha, Kottu Galla, Kafficho, Jimma. Total – 6 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Animals, misc.	5	1	2	1	-	-
Bananas, misc.	1	3	5	3	-	-
Barley	-	-	2	3	-	-
Beans, misc.	-	-	6	2	-	-
Bee (honey)	-	-	3	1	-	-
Cabbage, misc.	1	3	3	3	-	-
Caraway	-	-	-	-	1	4
Cardamom	-	-	-	-	3	2
Cereals, misc.	4	2	1	2	-	-
Chick-pea	1	2	3	2	-	-
Chicken	-	-	3	3	-	-
Citron	-	-	3	4	-	-
Coffee	-	-	5	3	-	-
Coriander	-	-	-	-	3	2
Cow, misc. (meat and milk)	-	-	6	1	-	-
Cumin	-	-	-	-	2	1
Fenugreek	-	-	-	-	2	2
Fish, misc.	-	-	2	4	-	-
Flax	-	-	2	4	1	4
Garlic	-	-	3	4	2	4
Ginger	-	-	-	-	3	2
Goat	-	-	3	2	-	-
Hops	-	-	-	-	1	2
Legumes	1	2	-	-	-	-
Lemon	-	-	3	4	-	-
Lentil	-	-	3	2	-	-
Maize	2	3	4	3	-	-
Millet, misc.	1	3	1	3	-	-
Mustard, misc.	-	-	-	-	3	2
Onion	-	-	3	3	1	3
Pea	-	-	4	2	-	-
Pepper, black	-	-	-	-	1	3
Pepper, chili	-	-	1	1	4	1
Plants, misc.	1	3	2	3	-	-
Potato, white	-	-	3	4	-	-
Ramtil	-	-	2	2	-	-
Rye	-	-	2	3	-	-
Saffron	-	-	-	-	1	1
Salt	-	-	-	-	2	3
Sesame	-	-	1	1	-	-
Shallot	-	-	1	2	-	-
Sheep	1	1	4	1	-	-
Sorghum	2	3	1	3	-	-
Squash	-	-	4	3	-	-
Sugar cane	-	-	2	3	-	-
Sugar plant (sugar)	-	-	-	-	2	1
Sunflower	-	-	1	5	-	-
Taro	1	4	2	4	-	-
Tea	-	-	2	2	-	-
Teff	2	2	-	-	-	-
Tomato	-	-	2	3	-	-
Turmeric	-	-	-	-	1	2
Wheat, misc.	-	-	2	2	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Southern Middle East (6 cultures)				
Animals, misc.	-	-	2	-
Bananas, misc.	1	3	-	-
Cabbage, misc.	-	-	1	-
Caraway	1	4	-	-
Cardamom	1	3	-	-
Chicken	-	-	3	1
Cow, misc. (meat and milk)	-	-	3	-
Cumin	1	1	-	-
Fish, misc.	-	-	2	2
Ginger	1	2	-	-
Goat	-	-	1	-
Hippopotamus	-	-	2	2
Pig	-	-	2	2
Saffron	1	-	-	-
Salt	1	3	-	-
Sheep	-	-	1	-
Sugar plant (sugar)	1	1	-	-
Tea	3	2	-	-
Tomato	-	-	1	-
Turmeric	1	2	-	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Tell Toqaan, Rwala, Syrian Bedouins, Druze-Lebanon, Al-Munsif, Dahr, Hadeth, Jordanian Bedouins, El-Chibayish, Saudi Arabia, Al-Hasa, Bedouin, Yemen, Aden, Hadhramaut, Egyptian Bedouin, Fellahin, Siwans, Bahrain. Total – 19 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Animals, misc.	18	1	10	1	-	-
Apple	-	-	6	3	-	-
Apricot	-	-	9	3	-	-
Banana	-	-	5	3	-	-
Barley	2	3	12	3	-	-
Beans, misc.	-	-	16	3	-	-
Bee (honey)	-	-	4	1	1	1
Camel, Arabian	2	3	6	3	1	3
Cardamom	-	-	-	-	5	1
Cereals, misc.	10	1	-	-	-	-
Chick-pea	-	-	15	3	-	-
Chicken	-	-	13	2	-	-
Coffee	-	-	15	1	1	1
Cow, misc. (meat and milk)	-	-	7	1	-	-
Cucumber	-	-	11	3	-	-
Eggplant	-	-	11	3	-	-
Fig	-	-	9	3	-	-
Fish, misc.	3	2	8	2	-	-
Garlic	-	-	5	3	5	3
Goat	1	2	8	2	-	-
Grape	-	-	12	3	3	3
Lemon	-	-	5	3	-	-
Lentil	3	2	5	2	-	-
Locust	-	-	5	4	-	-
Maize	1	2	4	2	-	-
Mint	-	-	-	-	5	2
Okra	-	-	7	3	-	-
Olive	2	2	4	2	3	2
Onion	1	3	15	3	-	-
Palm, date	10	2	5	2	-	-
Pomegranate	-	-	7	3	1	3
Potato, white	1	3	7	3	-	-
Radish	-	-	6	4	-	-
Rice	3	1	8	1	-	-
Sesame	1	3	2	3	7	3
Sheep	3	1	10	1	2	1
Squash	-	-	15	3	-	-
Sugar cane	-	-	3	1	2	1
Sugar plant (sugar)	-	-	1	1	7	1
Tea	2	2	13	1	1	1
Tomato	-	-	16	3	-	-
Watermelon	-	-	8	2	-	-
Wheat	9	1	1	1	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Central Middle East (19 cultures)				
Animals, misc.	-	-	2	1
Barley	1	3	-	-
Beans, misc.	1	3	-	-
Bee (honey)	-	-	1	-
Camel, Arabian	1	3	2	-
Cardamom	3	1	-	-
Cinnamon	2	3	-	-
Coffee	14	1	-	-
Fig	1	3	-	-
Fish, misc.	3	2	2	-
Lentil	1	2	-	-
Olive	2	2	-	-
Palm, date	2	2	2	-
Pig	-	-	2	2
Rice	3	1	-	-
Salt	3	2	-	-
Sugar cane	3	1	-	-
Sugar plant (sugar)	8	1	-	-
Tea	12	1	-	-
Tomato	-	-	1	-
Tuna (canned)	1	4	-	-

NORTHERN MIDDLE EAST

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Turkey (rural). Total – 1 culture.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Animals, domestic, misc.	1	2	-	-	-	-
Beans	-	-	1	2	-	-
Bee (honey)	-	-	1	1	-	-
Beet	-	-	1	1	-	-
Cereals, misc.	1	2	-	-	-	-
Chick-pea	-	-	1	1	-	-
Coffee	-	-	1	2	-	-
Cow	-	-	1	2	-	-
Chicken	-	-	1	2	-	-
Cucumber	-	-	1	2	-	-
Goat	-	-	1	2	-	-
Grape	-	-	1	2	-	-
Onion	-	-	1	2	-	-
Pistachio	-	-	1	1	-	-
Potato, white	-	-	1	4	-	-
Rice	-	-	1	2	-	-
Sesame	-	-	-	-	1	1
Sheep	-	-	1	1	-	-
Squash	-	-	1	2	-	-
Sugar cane	-	-	1	2	-	-
Tea	-	-	1	2	-	-
Wheat	1	2	-	-	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Northern Middle East (1 culture)				
Chick-pea	1	1	-	-
Coffee	1	2	-	-
Peanut	1	1	-	-
Pistachio	1	1	-	-
Rice	1	2	-	-
Sugar cane	1	2	-	-
Tea	1	2	-	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Rural Iran, Khamseh, Kurds, Afghanistan, Moghol. Total – 5 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Almond	-	-	4	1	-	-
Animals, misc.	8	2	1	2	-	-
Apple	-	-	2	2	-	-
Apricot	-	-	2	2	-	-
Beans, misc.	-	-	4	3	-	-
Beet	-	-	3	3	-	-
Cardamom	-	-	-	-	1	2
Carrot	-	-	2	4	-	-
Cereal plants	3	2	-	-	-	-
Chick-pea	-	-	2	2	-	-
Chicken	-	-	4	2	-	-
Coffee	-	-	2	2	-	-
Cow, misc. (meat and milk)	1	2	2	2	-	-
Cucumber	-	-	4	2	-	-
Eggplant	-	-	2	2	-	-
Fig	-	-	3	2	-	-
Fish, misc.	-	-	2	3	-	-
Garlic	-	-	1	2	1	2
Gazelle	-	-	1	2	-	-
Ginger	-	-	-	-	1	2
Goat	2	1	4	1	-	-
Grape	-	-	5	2	-	-
Lentil	-	-	3	2	-	-
Maize	-	-	2	3	-	-
Mint	-	-	-	-	1	4
Mulberry	1	2	2	2	-	-
Onion	-	-	3	2	-	-
Palm, date	1	3	2	3	-	-
Partridge	-	-	2	2	-	-
Pea	-	-	3	3	-	-
Pear	-	-	1	2	-	-
Pepper, chili	-	-	-	-	1	2
Pomegranate	-	-	3	2	-	-
Potato, white	-	-	2	4	-	-
Rice	2	1	2	1	-	-
Rose	-	-	-	-	1	2
Saffron	-	-	-	-	1	2
Sheep	2	1	3	1	-	-
Squash	-	-	3	3	-	-
Sugar cane	-	-	-	-	1	2
Sugar plant (sugar)	-	-	2	2	1	2
Tea	2	1	3	1	-	-
Tomato	-	-	2	3	-	-
Turnip	-	-	2	4	-	-
Walnut	-	-	2	2	-	-
Watermelon	-	-	3	2	-	-
Wheat	5	1	-	-	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Eastern Middle East (5 cultures)				
Animals, misc.	-	-	1	-
Cereal plants	1	2	-	-
Cocoa	1	2	-	-
Coffee	1	2	-	-
Grape	1	2	-	-
Palm, date	2	3	-	-
Pig	-	-	1	1
Rice	2	1	-	-
Sugar cane	1	2	-	-
Sugar plant (sugar)	2	2	-	-
Tea	5	1	-	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: West Tibetans, Sherpa, Lepcha, Mohla, Kashmiri, Burusho, Agri, Balahis, Coorg, Gujarati, Pahari, Telugu, Karimpur, Baiga, Bhil, Bondo, Gond, Kamar, Kol, Oraon, Santal, Chenchu, Reddi, Toda, Yanadi, Sinhalese, Vedda. Total – 27 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Ants, misc.	-	-	4	2	2	2
Apples, misc.	-	-	3	3	1	3
Apricot	1	3	2	3	2	3
Bamboo	-	-	5	3	1	3
Barley	3	4	3	4	-	-
Beans, misc.	-	-	15	3	-	-
Bee (honey)	1	2	8	2	8	2
Buckwheat	2	3	3	3	-	-
Buffalo, water	-	-	6	2	1	2
Cereals, misc.	8	2	-	-	-	-
Cheerojee	-	-	4	2	1	2
Chickpea	-	-	5	3	-	-
Chicken	-	-	18	3	1	3
Coconut	1	2	5	2	2	2
Cow (meat and milk)	-	-	23	2	2	2
Crab	-	-	4	2	1	2
Cucumber	-	-	6	3	-	-
Deer, misc.	-	-	10	3	1	3
Eggplant	-	-	7	3	-	-
Fig	-	-	13	3	-	-
Fish, misc.	2	3	18	3	1	3
Garlic	-	-	3	3	4	3
Goat	-	-	18	3	-	-
Gourds, misc.	-	-	7	3	-	-
Grape	-	-	2	2	2	2
Jackfruit	-	-	6	3	-	-
Jambolan	-	-	8	2	-	-
Legumes, misc.	6	2	-	-	-	-
Mahua	4	2	9	2	2	2
Maize	7	3	9	3	-	-
Mango	-	-	15	3	1	3
Millet, misc.	20	3	8	3	-	-
Mushroom	-	-	5	2	-	-
Mustard	-	-	3	2	3	2
Onion	-	-	10	3	-	-
Palms, misc.	1	2	17	2	1	2
Cajun pea	-	-	6	2	-	-
Pepper, chili	-	-	6	2	7	2
Pig, misc.	1	2	14	2	1	2
Potato, white	2	2	5	2	1	2
Ramtil	-	-	4	2	1	2
Rat	-	-	6	1	-	-
Rice	13	2	12	2	2	2
Salt	-	-	-	-	9	3
Sheep	1	2	6	3	2	3
Sorghum	3	2	1	2	1	2
Squash	-	-	9	3	-	-

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Sugar cane	-	-	3	2	2	2
Tamarind	-	-	8	n.d.	2	2
Taro	1	3	4	3	-	-
Tea	2	2	4	2	2	2
Wheat	7	2	7	2	-	-
Yak	3	3	1	3	-	-
Yams, misc.	1	3	6	3	-	-

Indian Sub-continent (27 cultures)	Imported Foods	Acceptability	Taboos	Rejected
Animals, misc.	-	-	8	4
Banana	1	3	1	-
Barley	1	4	-	-
Beans, misc.	-	-	2	-
Bee (honey)	-	-	2	-
Buffalo, water	-	-	3	1
Chicken (eggs and meat)	-	-	5	-
Cow (meat and milk)	-	-	10	7
Dog	-	-	1	2
Duck	-	-	2	-
Fish, misc.	-	-	3	-
Goat	-	-	4	-
Millet, misc.	3	3	2	-
Pig, misc.	1	2	11	-
Rice	-	-	3	-
Snakes	-	-	1	2
Sugar Plant (sugar)	2	4	-	-
Tea	4	2	-	-
Yams, misc.	-	-	2	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Tho, Thai-lue, Cambodians, Cham, Lamet, Khmu, Lao (rural), Moi, Muong, Malays, Semai, Semang, Bang Chan, Akha, Burmese (rural), Kachin, Karen, Palaung, Shan (Burma), Garo, Khasi, Purum, Apa Tani, Ao Naga, Sema Naga, Onge, Andamans. Total – 27 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Animals, misc.	2	2	3	2	-	-
Bamboo	-	-	14	3	3	3
Banana	-	-	19	3	-	-
Beans, misc.	3	3	17	3	-	-
Bees, misc.	-	-	6	1	1	1
Birds, misc.	-	-	6	2	-	-
Buckwheat	1	4	2	4	-	-
Buffalo, water	-	-	9	2	-	-
Cardamom	-	-	-	-	2	2
Cauliflower	-	-	1	2	-	-
Cereals, misc.	1	2	-	-	-	-
Chicken	-	-	22	3	-	-
Coconut	-	-	3	3	3	3
Cow (meat and milk)	-	-	13	2	-	-
Crab, misc.	-	-	7	3	1	3
Cucumber	-	-	17	3	-	-
Deer, misc.	-	-	9	2	-	-
Duck	-	-	12	3	-	-
Eggplant	-	-	14	4	-	-
Fish, misc.	12	3	20	3	10	3
Frogs, misc.	-	-	9	2	-	-
Garlic	-	-	1	4	7	4
Ginger	-	-	-	-	13	3
Goat	-	-	11	3	-	-
Lime (fruit)	-	-	2	3	5	3
Maize	4	3	18	3	-	-
Mango	-	-	12	3	1	3
Manioc	1	4	7	4	-	-
Millet, misc.	3	2	5	2	-	-
Mushrooms, misc.	-	-	7	3	3	n.d.
Mustard	-	-	5	3	1	3
Onion	-	-	11	3	6	3
Orange	-	-	10	4	-	-
Palms, misc.	1	3	10	3	1	3
Papaya	-	-	7	4	-	-
Peanut	-	-	4	4	2	4
Pepper, chili	-	-	3	2	17	2
Pig	2	2	20	2	2	2
Pineapple	-	-	6	4	-	-
Pomelo	-	-	4	3	1	3
Potato, sweet	-	-	12	3	-	-
Potato, white	-	-	7	4	-	-
Rats, misc.	-	-	7	3	-	-
Rice, (undifferentiated)	22	2	5	2	1	2
Rice, glutinous	4	2	4	2	-	-
Rice, nonglutinous	5	2	2	2	-	-
Salt	-	-	1	3	13	3
Sesame	-	-	4	2	8	2
Shrimp	-	-	4	3	2	3
Soybean	-	-	4	3	2	3
Squash	-	-	12	3	-	-

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Sugar cane	-	-	7	2	10	2
Tamarind	-	-	3	4	4	4
Taro	-	-	8	4	-	-
Tea	-	-	8	2	1	2
Tomato	-	-	8	3	-	-
Turmeric	-	-	-	-	5	3
Turtle, misc.	3	2	2	2	-	-
Yams, misc.	-	-	11	3	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Southeast Asia (27 cultures)				
Animals, misc.	1	2	1	-
Bamboo	-	-	2	-
Banana	-	-	1	-
Beans, misc.	1	3	-	-
Bees, (honey)	-	-	2	-
Birds, misc.	-	-	2	-
Buffalo, water	-	-	2	-
Cauliflower	1	2	-	-
Chicken	-	-	5	-
Coconut	1	3	-	-
Cow (meat and milk)	-	-	6	2
Crab, misc.	-	-	2	-
Deer, misc.	-	-	2	-
Dog	-	-	5	4
Duck	-	-	2	-
Fish, misc.	4	3	11	1
Frogs, misc.	-	-	3	2
Garlic	2	4	-	-
Goat	1	3	3	-
Monosodium glutanate	1	2	-	-
Mustard	-	-	1	-
Onion	2	3	1	-
Orange	1	4	1	-
Palms, misc.	1	3	1	-
Pig	-	-	11	2
Potato, sweet	1	3	-	-
Potato, white	1	4	1	-
Rats, misc.	-	-	1	1
Rice (undifferentiated)	3	2	-	-
Rice, non-glutinous	1	2	-	-
Salt	11	3	-	-
Shrimp	1	3	1	-
Soy beam	1	3	-	-
Squash	-	-	1	-
Sugar cane	5	2	-	-
Sugar plant (sugar)	2	1	-	-
Taro	-	-	1	-
Tea	7	2	1	-
Tomato	1	3	3	-
Turtle, misc.	-	-	2	-
Wheat	2	3	-	-
Yams, misc.	-	-	1	-

EAST ASIA

Primary, Secondary and Complement with Acceptability Ratings.

Includes: South Korea, Cheju Island, Nagura Mura (Japan), Ainu, Amami Oshima (Ryukuyu), Okinawa, Higashi (Okinawa), Ami, Atayal, Bunun, Yami, Lisu (China), Lisu (Thailand), Lolo, Lolo (Tonkin), Cowrie Shell Miao, Chuan Miao, Black Miao, Red Miao, Vietnam Meo, Thailand Miao, Hainan Miao, Peichang Yao, Linchow Yao, Hua-Lan Yao, Laos Yao, Thailand Yao, Tonkin Yao, Monguor, Tibet. Total - 30 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Bamboo	-	-	7	3	-	-
Barley	4	3	6	3	1	3
Beans, misc.	2	3	14	3	6	3
Buckwheat	4	3	8	3	2	3
Cabbage, misc.	1	3	19	7	-	-
Cereals, misc.	3	3	-	-	-	-
Chicken	-	-	25	3	4	3
Cow, misc.	-	-	10	3	-	-
Duck, misc.	-	-	9	3	1	3
Eggplant	-	-	5	4	-	-
Fish, misc.	3	3	19	3	2	3
Garlic	-	-	1	4	7	4
Ginger	-	-	-	-	9	3
Goat	-	-	6	3	2	3
Maize	6	3	12	3	-	-
Millet, misc.	7	3	11	3	1	3
Onion	-	-	4	4	6	4
Pea	-	-	6	4	2	4
Peanut	-	-	3	3	2	3
Pepper, chili	-	-	3	3	13	3
Pig, misc.	-	-	23	2	6	2
Potato, sweet	6	4	3	4	-	-
Potato, white	1	4	13	4	1	4
Pumpkin	-	-	12	4	-	-
Radish	-	-	9	3	1	3
Rice, undifferentiated	18	2	6	2	4	2
Rice, glutinous	3	2	4	2	3	2
Rice, nonglutinous	7	2	-	-	-	-
Salt	-	-	-	-	16	3
Sorghum, misc.	1	4	3	4	1	4
Soybean	1	3	8	3	6	3
Spinach	-	-	5	4	-	-
Sugar cane	-	-	2	3	6	3
Taro, misc.	4	4	6	4	-	-
Tea	2	2	2	2	1	2
Turnip	-	-	9	4	1	4
Wheat, misc.	1	3	7	3	3	3

	Imported Foods	Acceptability	Taboos	Rejected
East Asia (30 cultures)				
Animals, misc.	-	-	4	-
Chicken	-	-	2	1
Cow (milk-meat)	1	3	1	-
Dog	-	-	5	3
Fish, misc.	-	-	3	-
Horse	-	-	1	3
Peanut	2	3	-	-
Pepper, chili	-	-	2	-
Pigs, misc.	-	-	4	1
Rice	-	-	4	-
Rice, glutinous	1	2	1	-
Saccharin	1	4	-	-
Salt	10	3	-	-
Sheep	-	-	3	-
Shrimp	2	3	-	-
Pumpkin	-	-	2	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Aeta, Apayao, Bontoc Igorot, Central Bisayan, Magahat, Tawsug, Hamunoo, Ifugao, Madukayan, Manobo, Subanun, Bulakan, Tiruray, Iban, Toba-Batak, Minangkabau, Nias, Javanese, Alor-Pagans, Bali, Flores, Belu, Makassarese, Ambon, Kai. Total – 25 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Banana	4	3	17	3	-	-
Beans, misc.	-	-	19	3	-	
Bee (honey)	-	-	5	3	1	3
Birds, misc.	-	-	5	4	-	-
Buffalo	-	-	16	3	1	3
Cabbage	-	-	5	4	-	-
Chicken	-	-	22	3	1	3
Coconut	1	3	15	3	4	3
Coffee	-	-	5	4	-	-
Cow, misc. (meat and milk)	-	-	8	3	1	3
Cowpea	-	-	3	4	-	-
Crabs, misc.	-	-	7	4	-	-
Cucumber	-	-	7	4	-	-
Deer, misc.	-	-	15	3	-	-
Dog	-	-	5	3	-	-
Duck	-	-	7	3	-	-
Durian	-	-	6	3	-	-
Eel	-	-	5	3	-	-
Eggplant	-	-	10	4	-	-
Fish, misc.	5	3	24	3	3	3
Garlic	-	-	-	-	5	4
Ginger	-	-	-	-	9	3
Goat	-	-	13	3	-	-
Jackfruit	-	-	9	3	-	-
Larvae, misc.	-	-	5	4	-	-
Maize	10	4	15	4	-	-
Mango	-	-	12	3	-	
Manioc	5	4	9	4	1	4
Millet, misc.	-	-	5	4	-	-
Monkey	-	-	5	3	-	-
Nutmeg	-	-	-	-	5	4
Onion	-	-	1	4	7	4
Palm, misc.	3	3	21	3	2	3
Papaya	-	-	10	4	-	-
Peanut	-	-	9	3	2	3
Pepper, chili	-	-	6	3	13	3
Pig	1	2	26	2	-	-
Pineapple	-	-	7	3	-	-
Potato, sweet	11	4	13	4	1	4
Rice	17	2	6	2	-	-
Rice, glutinous	2	3	9	3	-	-
Rice, nonglutinous	4	2	-	-	-	-
Salt	-	-	-	-	13	3
Shrimp	-	-	6	2	2	2
Snails, misc.	1	4	4	4	-	-
Squash	-	-	7	4	2	4
Sugar cane	-	-	10	3	6	3
Taro, misc.	3	4	14	4	-	-
Tomato	-	-	7	4	1	4
Trees, misc.	-	-	5	4	6	4
Yams, misc.	3	4	5	4	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Indo-Oceania (25 cultures)				
Banana	-	-	1	-
Buffalo	-	-	2	-
Cl[illegible]	-	-	3	1
Coconut	1	3	1	-
Coffee	-	-	1	-
Cow, misc. (meat and milk)	1	3	1	-
Cowpea	-	-	1	-
Deer, misc.	-	-	3	-
Dog	-	-	3	1
Durian	-	-	1	-
Eel	-	-	2	-
Fish, misc.	5	3	3	1
Maize	-	-	2	-
Monkey	-	-	1	1
Palm, misc.	-	-	3	-
Pig	-	-	15	2
Potato, sweet	-	-	1	-
Rice	-	-	7	-
Rice, glutinous	1	3	3	-
Salt	8	3	2	-
Sardine	1	1	-	-
Shrimp	3	2	-	-
Sugar cane	1	3	3	-
Taro, misc.	1	4	1	-
Tomato	-	-	1	-

OCEANIA - AUSTRALIA

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Wailbri, Aranda, Murngin, Tiwi and Wanindiljaugwa. Total – 5 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Acacia, misc.	1	1	2	1	-	-
Ant, honey	-	-	2	1	-	-
Bandicoot	-	-	2	2	-	-
Bees, misc. (honey)	-	-	4	1	-	-
Cat, marsupial	-	-	2	3	-	-
Crocodile	-	-	2	3	-	-
Cycad	1	3	1	3	-	-
Dugong	-	-	2	2	-	-
Emu	-	-	2	2	-	-
Fish, misc.	1	2	3	2	-	-
Flying Fox	-	-	2	2	-	-
Grubs, misc.	-	-	3	3	-	-
Kangaroo	1	1	1	1	-	-
Lizard, misc.	-	-	4	2	-	-
Nut grass	1	2	1	2	-	-
Opossum, Australian	-	-	2	2	-	-
Orange, native	-	-	2	3	-	-
Palm, misc.	2	3	3	3	-	-
Pandanus	-	-	2	3	-	-
Purslane	1	3	1	3	-	-
Sandalwood	-	-	2	3	-	-
Shellfish, misc.	-	-	2	3	-	-
Tamarind	-	-	2	3	-	-
Truffle, False	-	-	2	3	-	-
Turtle	-	-	2	3	-	-
Wallaby	1	3	2	1	-	-
Water lily, blue	2	3	-	-	-	-
Yam, misc. wild	4	3	-	-	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Australia (5 cultures)				
Acacia, misc.	-	-	1	-
Ant, honey	-	-	1	-
Bandicoot, misc.	-	-	1	-
Cat, marsupial	-	-	1	-
Emu	-	-	2	-
Flying Fox	-	-	1	-
Kangaroo	-	-	1	-
Nut grass	-	-	1	-
Purslane	-	-	1	-

OCEANIA-MELANESIA

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Watut, Arapesh, Kiwai, Marindanin, Kori'i, Orokaiva, Waropen, Wogeo, Kapauku, Tor, Kuni, Trobriands, Lesu, Tanga, Buka, New Georgia, Santa Cruz, Malekula, Lau Fiji, and Viti-I-Loma. Total – 20 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Almond, canarium	-	-	3	2	3	2
" Indian	-	-	2	3	-	-
Banana	4	3	5	3	-	-
Barringtonia	-	-	3	1	-	-
Bat, Misc.	-	-	4	2	-	-
Beans, misc.	-	-	9	3	-	-
Birds, misc., wild	-	-	7	2	-	-
Bonito	-	-	2	2	-	-
Breadfruit	3	3	14	3	-	-
Cabbage, misc.	-	-	2	3	1	2
Cassowary	-	-	4	3	-	-
Chestnut, Tahitian	1	3	4	3	-	-
Chicken	-	-	11	3	-	-
Clam	-	-	3	3	-	-
Coconut	6	2	13	2	3	2
Cow (milk and meat)	-	-	3	2	-	-
Crabs, misc.	1	3	11	3	-	-
Cucumber	-	-	3	3	-	-
Cuscus	-	-	5	2	-	-
Dog	-	-	5	2	-	-
Fish	7	3	25	3	2	2
Flying Fox	-	-	2	3	-	-
Frog	-	-	6	3	-	-
Kangaroo, misc.	-	-	3	2	-	-
Larvae, misc.	-	-	8	2	-	-
Lemon	-	-	1	3	1	3
Limes	-	-	2	3	-	-
Lizards, misc.	-	-	4	2	-	-
Lobsters	-	-	3	3	-	-
Maize	-	-	11	3	-	-
Malay apple	-	-	4	3	-	-
Mango	-	-	5	3	-	-
Manioc, misc.	2	2	8	3	-	-
Melon	-	-	2	3	-	-
Molluscs, misc.	-	-	4	3	-	-
Octapus	-	-	2	3	-	-
Onion	-	-	1	2	1	2
Orange	-	-	5	3	-	-
Palm, sago	4	3	6	3	-	-
Palolo worm	-	-	4	2	-	-
Pandanus	-	-	3	2	-	-
Papaya	-	-	12	3	-	-
Pepper, chili	-	-	1	3	3	3
Pig, misc.	-	-	27	2	-	-
Pigeon, misc.	-	-	6	2	-	-
Pineapple	-	-	6	3	-	-

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Plantain	-	-	3	3	-	-
Potato, sweet	6	3	5	3	1	3
" white	-	-	2	3	-	-
Prawn	-	-	9	2	-	-
Rat	-	-	6	2	-	-
Rice	-	-	3	2	-	-
Salt	-	-	-	-	1	3
Shellfish, misc.	-	-	6	2	-	-
Snail	-	-	2	3	-	-
Snake, misc.	-	-	3	2	-	-
Squash	-	-	10	3	-	-
Sugar cane	-	-	13	3	3	3
Taro, misc.	12	3	7	3	2	3
Tea	-	-	3	2	-	-
Tomato	-	-	4	3	-	-
Turtle, misc.	-	-	11	2	1	2
Yam, misc.	9	3	9	2	-	-
Yautia	-	-	2	3	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Melanesia (20 cultures)				
Almond, canarium	-	-	1	-
Banana	-	-	5	-
Birds, misc. wild	-	-	1	-
Breadfruit	-	-	2	-
Chicken	-	-	2	-
Coconut	1	2	3	-
Cow	3	2	-	-
Crabs, misc.	-	-	1	-
Dog	-	-	1	-
Fish	1	-	5	-
Flying Fox	-	-	1	-
Kangaroo, misc.	-	-	1	-
Lizards, misc.	-	-	-	2
Lobsters	-	-	1	-
Onion	1	1	-	-
Palm, sago	-	-	1	1
Palolo worm	-	-	1	-
Pig, misc.	-	-	10	-
Potato, sweet	-	-	1	-
Rice	3	2	-	-
Shark	-	-	4	-
Snake	-	-	1	2
Sugar cane	2	3	-	-
Taro, misc.	-	-	5	-
Tea	3	-	-	-
Turtle	-	-	4	-
Yam, misc.	-	-	5	-

OCEANIA-MICRONESIA

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Gilberts, Guam, Marshalls, Nauru, Palau, Truk, Ifaluk, Lamotrek. Total – 8 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complement	Accept.
Almond, Indian	-	-	2	2	-	-
Arrowroot, Polynesian	1	3	3	3	-	-
Banana	1	3	6	3	-	-
Beans	-	-	2	3	-	-
Breadfruit	4	2	5	2	-	-
Chicken	-	-	7	2	-	-
Coconut	4	2	6	2	6	2
Cow (milk and meat)	-	-	4	2	-	-
Crabs, misc.	1	2	8	3	1	3
Dodder laurel	-	-	2	3	-	-
Fish	5	2	10	2	1	2
Limes	-	-	1	3	2	3
Mango	-	-	3	2	-	-
Manioc, undifferentiated	1	3	1	3	-	-
Octapus	1	2	2	2	1	2
Pandanus	3	3	2	3	-	-
Papaya	-	-	7	3	-	-
Pepper, chili	-	-	-	-	4	3
Pig	-	-	8	2	-	-
Pineapple	-	-	3	2	-	-
Potato, sweet	2	3	2	3	-	-
Rice	1	2	5	2	-	-
Sardine (canned)	-	-	2	2	1	2
Salt	-	-	-	-	1	3
Shellfish, misc.	1	3	2	3	-	-
Soursop	-	-	2	3	-	-
Soybean	-	-	-	-	2	2
Squash	-	-	5	5	-	-
Sugar cane	-	-	6	3	2	3
Taro, misc.	6	3	5	3	1	3
Tea	-	-	2	2	-	-
Turmeric	-	-	1	2	1	2
Turtle, misc.	-	-	5	2	-	-
Wheat	-	-	3	3	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Micronesia (8 cultures)				
Coconut	-	-	3	-
Cow (milk and meat)	4	2	-	-
Fish, misc.	2	2	2	3
Octopus	-	-	1	1
Rice	5	2	-	-
Salt	1	3	-	-
Sardine (canned)	2	2	-	-
Soy bean	2	2	-	-
Sugar cane	2	2	-	-
Tea	2	2	-	-

OCEANIA-POLYNESIA

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Kapingamarangi, Rennell Island, Tikopia, Ellice Islands, Samoa, Tonga, Gambier, Marquesas, Tuamotu, Easter Islanders, Maori, Cook Islands, Manihiki, Pukapuka. Total - 14 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complement	Accept.
Arrowroot, Polynesian	1	3	4	3	-	-
Avocado	-	-	2	2	-	-
Banana	1	3	11	3	-	-
Breadfruit	6	2	5	3	-	-
Cabbage	-	-	2	3	-	-
Cereals, misc.	2	1	3	3	-	-
Chestnut, Tahitian	-	-	2	3	-	-
Chicken	-	-	9	5	-	-
Coconut	8	3	7	3	5	3
Coffee	-	-	5	2	-	-
Cow (meat and milk)	-	-	6	3	-	-
Crab, misc.	-	-	9	3	1	3
Crayfish, sea	-	-	5	4	-	-
Dracaena	-	-	3	3	-	-
Fish	10	2	21	2	6	3
Goat	-	-	2	3	-	-
Limes	-	-	2	3	1	3
Lobster, spiny	-	-	3	3	-	-
Maize	2	2	2	2	-	-
Manioc, undifferentiated	2	3	3	3	-	-
Octapus	-	-	5	2	1	2
Onion	-	-	2	2	1	2
Pandanus	-	-	9	3	-	-
Papaya	-	-	10	3	-	-
Pea	-	-	2	2	-	-
Pepper, chili	-	-	-	-	3	3
Pig	-	-	9	2	-	-
Pineapple	-	-	4	3	-	-
Plantain	1	2	3	3	-	-
Potato, sweet	6	3	3	3	-	-
Rice	-	-	5	3	-	-
Salt	-	-	-	-	1	2
Seaweed	-	-	2	3	2	3
Shrimp	-	-	4	3	-	-
Squash	-	-	3	3	-	-
Sugar cane	-	-	8	2	-	-
Sugar plant (sugar)	2	-	3	3	5	3
Taro, misc.	13	3	16	3	2	3
Tea	1	2	3	2	-	-
Tomato	-	-	2	3	-	-
Tridacna	-	-	3	3	-	-
Turmeric	-	-	2	3	-	-
Turtle	-	-	11	3	-	-
Vi-apple	-	-	2	3	-	-
Wheat	1	3	2	3	-	-
Yam, misc.	2	3	10	4	-	-

	Imported Foods	Acceptability	Taboos	Rejected
Polynesia (14 cultures)				
Banana	-	-	1	-
Breadfruit	-	-	3	-
Cereals, misc.	5	2	-	-
Chicken	1	3	1	-
Coconut	-	-	1	-
Coffee	5	2	-	-
Cow (meat and milk)	3	4	-	1
Fish	3	2	18	4
Octopus	1	2	2	-
Pig	1	2	2	-
Rice	5	3	-	-
Sugar plant (sugar)	8	3	-	-
Taro	-	-	6	-
Tea	4	2	-	-
Tridacna	-	-	1	-
Turmeric	-	-	1	-
Turtle	-	-	5	-
Wheat	2	3	-	-
Yam, misc.	-	-	1	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Milpa Alta Aztec, Seri, Tarahumara, Tarasco, Tepoztlan, Totonac, Zapotec, Yucatec Maya, Chimaltenango, Chorti, Chinautla, Quiche, Garif, Jicaque, Talamanca. Total – 15 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Animals, misc.	5	5	2	5	-	-
Armadillo	-	-	5	3	-	-
Avocado	-	-	10	4	1	4
Banana	4	4	7	4	-	-
Beans, misc.	11	4	17	4	1	4
Bee (honey)	-	-	7	3	4	3
Cabbage	-	-	5	4	1	4
Cereals, misc.	-	-	3	3	-	-
Chayote	1	4	6	4	-	-
Chicken	2	3	11	3	-	-
Cocoa, misc.	-	-	5	2	1	2
Cow (meat and milk)	1	3	10	3	-	-
Deer, misc.	1	3	8	3	-	-
Fish, misc.	3	3	8	3	-	-
Garlic	-	-	2	4	3	4
Goat	-	-	6	3	-	-
Guava	-	-	8	4	-	-
Lemon	-	-	5	4	-	-
Lime (fruit)	-	-	7	4	2	4
Maize	12	3	4	3	-	-
Mamey-apple	-	-	6	4	-	-
Mango	1	3	9	3	-	-
Manioc	3	4	4	4	-	-
Mombin, misc.	-	-	8	3	-	-
Monkey, misc.	-	-	5	4	-	-
Mushrooms	-	-	5	4	-	-
Onion	-	-	8	3	2	3
Orange, misc.	-	-	15	4	-	-
Palms, misc.	1	4	6	4	-	-
Papaya	-	-	9	4	-	-
Peccary, misc.	-	-	7	4	-	-
Pepper, chili	1	3	3	3	15	3
Pig	1	3	10	3	-	-
Pineapple	-	-	5	3	-	-
Plants, misc.	2	4	4	4	1	4
Potato, sweet	3	4	7	4	-	-
Potato, white	-	-	6	4	1	4
Prickly pear	-	-	7	4	-	-
Rabbit, misc.	-	-	5	4	-	-
Rice	-	-	9	3	-	-
Salt	-	-	-	-	9	4
Sapotes, misc.	-	-	10	4	-	-
Squash, misc.	6	4	8	4	2	4
Squirrel	-	-	5	4	-	-
Sugar cane	-	-	6	3	5	3
Tomato	-	-	10	3	1	3
Turkey	-	-	9	4	-	-
Wheat	-	-	7	3	-	-

Middle America (15 cultures)	Imported Foods	Acceptability	Taboos	Rejected
Animals, misc.	2	5	-	2
Avocado	-	-	1	-
Banana	3	4	-	-
Beans, misc.	-	-	1	-
Cabbage	1	4	-	-
Cereals, misc.	3	3	-	-
Cocoa, misc.	4	2	-	-
Coffee	3	3	-	-
Cow (meat and milk)	4	3	1	1
Fish, misc.	2	3	-	1
Garlic	1	4	-	-
Goat	2	3	-	-
Mango	2	3	-	-
Onion	1	3	1	-
Orange, misc.	2	4	-	-
Papaya	1	4	-	-
Pepper, chili	2	3	-	-
Pig	1	3	-	-
Plants, misc.	-	-	-	1
Potato, white	1	4	-	-
Rice	6	3	-	-
Salt	6	4	-	-
Sardine	2	4	-	-
Sheep, immature	1	2	-	-
Squash, misc.	-	-	1	-
Sugar cane	2	3	-	-
Tomato	2	3	-	-
Wheat	3	3	-	-

SOUTH AMERICA - NORTHERN LOWLAND

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Cuna, Choco, Goajiro, Surinam Javanese, Bush Negroes, Barama River Carib, Macusi, Taulipang, Warrau, Yaruro, Makiritare. Total - 11 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Agouti	-	-	2	3	-	-
Armadillo	-	-	3	3	-	-
Banana	2	3	5	3	-	-
Beans	-	-	4	2	-	-
Bee (honey)	-	-	-	-	2	2
Breadfruit	-	-	2	3	-	-
Chicken (eggs and meat)	-	-	6	2	-	-
Coconut	-	-	2	1	-	-
Crab	-	-	3	3	-	-
Deer	-	-	3	3	-	-
Duck	-	-	2	3	-	-
Fish, misc.	4	3	12	3	-	-
Larvae, misc.	-	-	3	1	-	-
Maize	4	3	6	3	-	-
Manioc (undifferentiated)	2	3	1	3	-	-
" bitter	4	3	2	3	2	3
" sweet	-	-	4	4	-	-
Papaya	-	-	5	3	-	-
Peccary, misc.	-	-	6	3	-	-
Pepper, chili	2	2	1	2	6	3
Pig	-	-	3	3	-	-
Pineapple	-	-	6	3	-	-
Plantain	3	2	7	2	-	-
Potato, sweet	1	3	4	3	-	-
Rice	2	2	-	-	-	-
Salt	-	-	-	-	4	2
Shrimp	-	-	3	2	-	-
Squash	-	-	4	3	-	-
Sugar cane	-	-	7	3	3	3
Tapir	-	-	4	1	-	-
Turtle, misc.	-	-	3	2	-	-
Yam	-	-	9	3	-	-
Yautia	1	3	2	3	-	-

	Imported Foods	Acceptability	Taboos	Rejected
South America, Northern Lowland (11 cultures)				
Agouti	-	-	-	1
Armadillo	-	-	1	-
Beans	-	-	1	-
Chicken (eggs and meat)	-	-	3	-
Deer	-	-	2	-
Duck	1	3	1	-
Fish, misc.	-	-	3	-
Maize	-	-	2	-
Manioc (undifferentiated)	-	-	1	-
" sweet	-	-	1	-
Peccary	-	-	2	-
Pepper, chili	-	-	1	-
Pig	-	-	1	1
Plantain	-	-	1	-
Rice	1	-	1	-
Salt	2	2	-	-
Squash	-	-	1	-
Sugar cane	1	8	2	-
Tapir	-	-	1	-
Turtle	-	-	2	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Cagaba, Paiki, Paez, Cayapa, Quechua-Hualcan, Camba, Aymara, Aritama, Araucanians. Total - 9 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complement	Accept.
Apple	-	-	3	3	-	-
Arracacha	-	-	5	3	-	-
Avocado	-	-	4	3	-	-
Banana	1	3	4	3	-	-
Beans, misc.	1	3	15	3	-	-
Bee (honey)	-	-	1	2	3	2
Cabbage, misc.	-	-	4	3	-	-
Cat	-	-	2	3	-	-
Chicken	-	-	8	3	-	-
Coffee	-	-	3	3	-	-
Coriander	-	-	-	-	2	3
Cow (milk and meat)	-	-	6	3	1	2
Deer, misc.	-	-	6	3	-	-
Duck	-	-	3	3	-	-
Fish	1	2	11	3	-	-
Garlic	-	-	1	3	3	3
Guinea pig	-	-	3	3	-	-
Larvae, misc.	-	-	3	2	-	-
Maize	3	3	7	3	-	-
Mango	-	-	3	3	-	-
Manioc, undifferentiated	3	3	6	3	-	-
Nasturtium, Peruvian	-	-	3	3	-	-
Onion	-	-	6	3	1	2
Papaya	-	-	3	3	-	-
Pepper, chili	-	-	3	3	3	3
Pig	-	-	6	3	1	3
Pineapple	-	-	3	3	-	-
Plantain	4	3	2	3	-	-
Potato, sweet	-	-	6	3	-	-
" white	3	3	2	3	-	-
Quinoa	2	3	1	3	-	-
Rice	1	3	2	3	-	-
Sheep	-	-	4	3	1	3
Squash	-	-	6	3	1	3
Sugar cane	-	-	6	2	2	2
Tapir	-	-	3	2	-	-
Taro	1	3	-	-	-	-
Turtle	-	-	4	3	-	-
Turkey	-	-	4	3	-	-
Ulluco	-	-	2	3	-	-
Wheat	1	3	4	3	-	-
Yam, misc.	-	-	5	3	-	-

	Imported Foods	Acceptability	Taboos	Rejected
South America, Andean (9 cultures)				
Apple	-	-	1	-
Banana	1	3	-	-
Beans, misc.	-	-	1	-
Bee (honey)	-	-	1	-
Cabbage, misc.	-	-	1	-
Cat	-	-	1	-
Chicken	-	-	2	1
Cow (milk and meat)	1	2	3	-
Deer, misc.	-	-	2	-
Duck	-	-	2	1
Fish	1	3	2	-
Guinea pig	-	-	1	-
Larvae, misc.	-	-	2	1
Mango	-	-	1	-
Manioc	-	-	1	-
Onion	-	-	1	-
Pepper, chili	-	-	2	-
Pig	-	-	3	1
Potato, sweet	1	3	-	-
Rice	2	3	-	-
Sheep	-	-	2	-
Sugar cane	2	2	-	-
Tapir	-	-	1	-
Turtle	-	-	3	-
Turkey	-	-	1	-
Wheat	1	3	-	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Mataco, Toba, Tobati, Choroti, Guana, Kaskiha, Chamacoco, Caingang, Guarani, Tenetehara, Timbira, Ramkokamekra. Total - 12 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complement	Accept.
Algaroba	-	-	3	2	-	-
Armadillo	-	-	4	2	-	-
Banana	-	-	4	2	-	-
Beans, misc.	-	-	9	3	-	-
Bee (honey)	-	-	5	1	-	-
Capybara	-	-	3	4	-	-
Cereals, misc.	1	2	-	-	-	-
Chicken	-	-	6	3	-	-
Cow (meat and milk)	1	2	5	2	-	-
Deer, misc.	-	-	5	3	-	-
Fish, misc.	2	2	6	2	-	-
Garlic	-	-	3	2	-	-
Goat	-	-	2	3	-	-
Guava	-	-	2	3	-	-
Guinea fowl	-	-	2	3	-	-
Maize	4	3	6	3	-	-
Mango	-	-	2	3	-	-
Manioc, undifferentiated	2	2	3	3	-	-
" bitter	4	3	1	3	-	-
" sweet	4	3	3	3	-	-
Maté	2	2	1	2	-	-
Monkey, howler	-	-	2	2	-	-
Onion	-	-	4	3	-	-
Oranges	-	-	4	3	-	-
Palms, misc.	1	2	11	2	-	-
Papaya	-	-	2	3	-	-
Peanut	1	3	2	3	1	2
Peccary, misc.	-	-	5	2	-	-
Pepper, chili	-	-	4	3	1	2
Pig	-	-	6	3	-	-
Pineapple	-	-	4	3	-	-
Potato, sweet	4	3	2	3	-	-
Rhea	-	-	6	2	-	-
Rice	1	3	4	3	-	-
Squash	-	-	6	3	-	-
Sugar cane	-	-	2	2	2	2
Tapir	-	-	3	n.d.	-	-
Tomato	-	-	2	3	-	-
Watermelon	-	-	4	3	-	-
Yams, misc.	1	3	4	2	-	-

	Imported Foods	Acceptability	Taboos	Rejected
South America, Southern Lowland (12 cultures)				
Armadillo	-	-	3	-
Beans, misc.	1	3	-	-
Cereals, misc.	1	2	-	-
Chicken	-	-	1	-
Cow (meat and milk)	3	2	2	-
Deer, misc.	-	-	2	1
Fish, misc.	-	-	4	1
Maize	1	3	1	-
Manioc, bitter	1	3	-	1
Monkey, howler	-	-	2	-
Oranges	1	3	-	-
Peccary	-	-	4	1
Pepper, chili	-	-	1	-
Pig	-	-	-	1
Rhea	-	-	4	-
Sugar cane	-	-	1	-
Tapir	-	-	2	-
Tomato	-	-	-	1

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Witoto, Jivaro, Amahuaca, Campa, Chama, Cocama, Piro, Yagua, Zapáro, Chiriguano, Siriono, Aueto, Bacairi, Caraja, Nambicuara, Mamainde, Paressi, Shavante, Kuikuru, Mundurucu, Yanoama, Cubeo, Waiwai. Total – 23 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complement	Accept.
Agouti	1	3	4	2	-	-
Ants, misc.	-	-	6	3	-	-
Armadillos	-	-	5	3	-	-
Arrowroot	-	-	4	3	-	-
Avocado	-	-	3	3	-	-
Banana	6	3	8	3	-	-
Beans, misc.	3	3	15	3	1	n.d.
Bee (honey)	-	-	6	3	3	2
Capybara	-	-	4	3	-	-
Cashew, misc.	-	-	6	3	1	3
Cayman	-	-	3	3	-	-
Chicken (meat and eggs)	-	-	7	3	-	-
Cow (meat and milk)	-	-	2	3	-	-
Deer, misc.	1	3	5	3	-	-
Fish, misc.	9	3	14	3	-	-
Guava	-	-	3	3	-	-
Inga	-	-	3	3	-	-
Larvae, misc.	-	-	6	3	-	-
Lemon	-	-	3	3	-	-
Maize	8	3	16	3	-	-
Mango	-	-	3	3	-	-
Manioc, undifferentiated	3	3	2	3	-	-
" bitter	8	2	3	2	-	-
" sweet	12	3	6	3	-	-
Melon	-	-	3	3	-	-
Monkey, misc.	2	2	11	3	-	-
Orange	-	-	5	3	-	-
Paca	-	-	3	3	-	-
Palms, misc.	1	3	59	3	1	3
Papaya	-	-	10	3	-	-
Peanut	-	-	14	3	-	-
Peccary	2	3	12	3	-	-
Pepper, chili	-	-	5	3	11	3
Pig	-	-	3	3	-	-
Pineapple	-	-	10	3	-	-
Plantain	8	3	4	3	-	-
Potato, sweet	1	2	19	3	-	-
" white	-	-	3	n.d.	-	-
Rhea	-	-	2	3	-	-
Rice	-	-	4	3	1	3
Salt	-	-	1	2	8	2
Squash	-	-	12	4	-	-
Sugar cane	-	-	11	3	5	3
Tapir	2	2	8	3	-	-
Turtles, misc.	1	3	17	3	-	-
Watermelon	-	-	6	3	-	-
Yams, misc.	-	-	20	3	-	-
Yautia, misc.	-	-	7	3	-	-

	Imported Foods	Acceptability	Taboos	Rejected
South America, Amazonia (23 cultures)				
Agouti	-	-	4	-
Ants	-	-	2	1
Armadillo	-	-	5	-
Banana	-	-	1	-
Bee (honey)	-	-	2	-
Capybara	-	-	4	1
Ca/man	-	-	2	-
Chicken (meat and eggs)	-	-	2	-
Cow (milk and meat)	1	3	-	-
Deer, misc.	-	-	4	-
Fish, misc.	-	-	8	-
Inga	-	-	1	-
Larvae, misc.	-	-	1	1
Maize	1	3	-	-
Manioc, bitter	-	-	1	-
" sweet	-	-	2	-
Monkey, misc.	-	-	17	-
Paca	-	-	3	-
Palm, misc.	-	-	6	1
Peanut	-	-	1	-
Peccary	-	-	8	-
Pepper, chili	-	-	2	-
Pig	-	-	1	-
Plantain	-	-	1	-
Potato, sweet	-	-	2	-
Rice	1	3	-	-
Salt	4	2	3	1
Sugar cane	1	-	2	-
Tapir	-	-	3	-
Turtles, misc.	-	-	12	-

Primary, Secondary and Complement with Acceptability Ratings.

Includes: Providencia Island, Modern Carib, Haiti, Jamaica. Total – 4 cultures.

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Amaranth	-	-	3	4	-	-
Animals, domestic	-	-	1	2	1	2
Avocado	-	-	3	3	-	-
Banana	1	3	1	3	-	-
Beans, misc.	2	3	4	3	-	-
Breadfruit	-	-	3	3	-	-
Cabbage	-	-	2	4	-	-
Cashew	-	-	1	4	1	4
Chayote	-	-	2	4	-	-
Chicken	-	-	3	2	-	-
Cocoa	-	-	1	3	1	3
Coconut	-	-	3	3	1	3
Cod	-	-	2	2	-	-
Coffee	-	-	-	-	2	3
Cow	1	3	3	3	-	-
Cowpea	1	4	1	4	-	-
Crabs, misc.	-	-	3	3	1	3
Custard-apple	-	-	2	4	-	-
Fish, misc.	2	2	1	2	-	-
Ginger	-	-	-	-	3	4
Goat	-	-	3	4	-	-
Grapefruit	-	-	2	4	-	-
Guava	-	-	2	3	-	-
Herring	-	-	2	2	-	-
Iguana	-	-	2	4	-	-
Jackfruit	-	-	1	4	-	-
Maize	1	3	3	3	-	-
Mango	-	-	3	2	-	-
Manioc	4	4	2	4	1	4
Oats	-	-	1	4	-	-
Okra	-	-	2	4	-	-
Onion	-	-	1	2	-	-
Orange	-	-	3	3	-	-
Palms, misc.	-	-	2	3	-	-
Papaya	-	-	3	3	-	-
Pea, cajan	-	-	3	4	-	-
Peanut	-	-	2	4	-	-
Pepper, chili	-	-	-	-	4	3
Pig	-	-	3	3	-	-
Pineapple	-	-	4	3	-	-
Plantain	2	3	2	3	-	-
Potato, sweet	2	4	1	4	-	-
Potato, white	-	-	1	2	-	-
Pumpkin	-	-	3	3	-	-
Rice	2	3	1	3	-	-
Salt	-	-	-	-	2	3
Sapodilla	-	-	1	4	-	-
Sardine	-	-	1	1	-	-
Soursop	-	-	2	3	-	-
Star-apple	-	-	2	4	-	-
Sugar cane	-	-	-	-	2	2

Source	Primary	Accept.	Secondary	Accept.	Complements	Accept.
Tamarind	-	-	2	3	-	-
Taro	1	4	1	4	-	-
Tomato	-	-	3	3	1	3
Turtle, misc.	-	-	3	4	-	-
Watermelon	-	-	2	3	-	-
Wheat	-	-	2	3	-	-
Yams, misc.	2	3	2	3	-	-

	Imported Foods	Acceptability	Taboos	Rejected
South America - Caribbean (4 cultures)				
Animals, domestic	1	2	-	-
Cocoa	1	3	-	-
Cod	2	2	-	-
Coffee	1	3	-	-
Cow	1	3	-	-
Herring	2	2	-	-
Oats	1	4	-	-
Onion	1	2	-	-
Orange	-	-	1	-
Potato, white	1	2	-	-
Rice	1	3	-	-
Salt	1	3	-	-
Sardine	1	1	-	-
Sugar cane	1	2	-	-
Tomato	1	3	-	-
Wheat	2	3	-	-

Chapter 3

BOTANICAL-ZOOLOGICAL TAXONOMY

The objectives of the taxonomist were to identify and verify the plant and animal sources used as foods as reported in the analyzed literature of the ethnic groups considered in the project, and in addition to edit the data sheets for consistent usage of terminology of foodstuffs and categorization of foodstuffs.

The first cultures studied were mainly from HRAF file literature sources. In addition to the obvious categories utilized by the researchers, the flora and fauna sections of the files often proved useful for gleaning extra information for identification. Greater certainty of exhaustive coverage of literature was possible with file sources.

Literature sources outside the files showed greater variability in pertinence and coverage and it was much more time consuming to search and cross reference. The questionnaires also varied greatly in amount of detail available.

Since the literature used was not usually intended for such specific uses as detailed analysis of foods, lack of pertinent detail was a major problem involved in this work. Lack of biological knowledge or insufficient detail on the part of the original researchers often made

identification of food sources difficult, and sometimes impossible. In particular, this was true with reference to the staple grain crops in parts of Africa and India. The general term "millet" would be used to describe the grain. This term is loosely applied to a large number of small-seeded grasses and can also be used to cover sorghum, which is itself known by a confusing variety of common names including great or giant millet, and is very often referred to merely as a millet. In many cases use of native terms helped solve these problems, either by reference to other sources, or to the regional listings or dictionaries of vernacular terms. In case of doubt, the vernacular name was relied upon rather than the common supplied in the literature by the author. As stated by Merrill (1945):

> "Native plant names are not to be ignored no matter if the number in actual use is very very great.... We should not be misled by the very loose application of our common English plant names....for among more primitive peoples the plant names in current use are too important to be ignored since such peoples are as a rule in much closer contact with plants than are more advanced peoples."

The literature was often especially vague with reference to domestic animals, giving no mention of the type of cattle, or whether the pigs, sheep or goats were introduced or derived from the species native to the particular geographic areas.

When inconsistencies of identification occurred between sources, citation of expert identification of the materials was accepted in preference to unsubstantiated identification. In the more recent sources accurate identification of plant and animal food sources, with binomials, is often included.

The older sources presented many problems with binomials.

> "Because of confusion in the early development of botanical classification, names long in use for a particular species will be dropped when it is found that an earlier published one actually applied to the same species" (Merrill, 1945).

Recent advances in taxonomy and greater communication between authorities have brought about many changes and there is still lack of agreement of taxonomy in some fields, mainly at the species level but also at the genus level. This, and the question of current priority in nomenclature, were difficulties encountered. No single, comprehensive, up-to-date standard of nomenclature for animals and plants yet exists. Simpson (1945) was used as a standard to solve the problem of synonymy amongst mammals. Gerth van Wijk's voluminous dictionary of plant names, although published between 1911 and 1916, is very comprehensive and was found invaluable in correlating out-dated binomials with current usage.

Uncommon binomials had the source and authority included on the original data sheets but this information could not be included in the Tables. Webster's Second International Unabridged Dictionary was often used in deciding priority of common names. Where there appeared to be no American-English name in common usage the following alternatives were employed for common name source: (a) a general term to identify the type of plant, (b) a concise description taken from the literature, (c) a native term, or (d) the generic name.

As detailed a literature search as time allowed was carried out for reference materials. Those used are included in the bibliography below.

Certain common names for botanical species and varieties are a source of potential confusion. To avoid problems of identification of common food source names a card file was maintained. Following is a list of the more significant of these decisions.

DECISIONS ON COMMON NAMES

Zea Mays L.
The term maize was used consistently for Zea Mays (in preference to Indian corn, corn of mealies) to avoid confusion over the word corn, which, outside the U.S., may apply to the grain of any cereal.

Sorghum vulgare Pers.
Cultivated sorghums are usually referred to as a single species. The term sorghum has been used to cover all the grain sorghum varieties (durra, Kaffir corn, Guinea corn, great millet or giant millet).

Pennisetum typhoideum Rich.
Millet, pearl not millet, bulrush, millet, cattail or millet, spiked.

Eleusine coracana (L.) Gaertn.
Millet, African not millet, finger, ragi or korakan.

Setaria italica (L.) Beauv.
Millet, foxtail not millet, Italian, Hungarian or Siberian.

Manihot esculenta Crantz
Manioc was formerly regarded as two species but now the bitter and sweet forms are treated as varieties of a single species. The term manioc was used in preference to cassava, cassaba, yucca, yuca, mandioca, tapioca or aipin. The name manioc has wide acceptance in American-English usage and also in French.

Colocasia esculenta (L.) Schott.
The term taro has been used for the true taro in preference to coco yam or eddo.

Alocasia macrorrhiza (L.) Schott.
The common English name is giant taro and for the purposes of this study it was called taro, giant. Kape is a term used throughout Oceania for this aroid.

Cyrtosperma chamissonis (Schott) Merrill
The giant swamp taro or pulax with pulaka or puraka as common native names. This was referred to as taro, pulax to distinguish it from Alocasia - the giant taro.

Xanthosoma spp.
Yautia used in preference to malanga or tanier.

Cucurbita spp.
Pumpkins and squashes are gourd fruits which assume very many shapes

and the various horticultural varieties cross readily. In the U.S. the words pumpkin and squash are used indiscriminately. In this study the term squash has been used in preference to pumpkin but where varieties have been identified in the literature, the more specific names have been utilized.

Arachis hypogaea L.
Peanut was used in preference to monkey nut or groundnut to avoid confusion with Bambara groundnut and other plants also referred to as groundnuts.

BIBLIOGRAPHY

* - major reference sources

Bibliographic

Blake, S.F. and Alice C. Atwood. 1942. Geographical guide to floras of the world. U.S.Department of Agriculture. Miscellaneous Publication No. 401. 336 pp.

Fanning, Robert Joseph. 1951. Pacific Islands nutrition bibliography. Pacific Area Bibliographies. University of Hawaii Press, Honolulu.

Leong, P.C. 1952. Nutrition bibliography of Malaya. Pacific Area Bibliographies. University of Hawaii Press, Honolulu. 23 pp.

Merrill, Elmer D. 1937. Polynesian botanical bibliography 1773-1935. Bernice P. Bishop Museum Bulletin No. 144. 194 pp.

Merrill, Elmer D. and E.H. Walker. 1938. A bibliography of Eastern Asiatic botany. Arnold Arboretum, Mass. 71 pp.

Sachet, M-H and F.R.Fosberg. 1955. Micronesian botany: land environment and ecology of coral atolls, vegetation of tropical Pacific Islands. National Academy of Sciences-National Research Council Publication 335. 577 pp.

Smith, Roger C. 1942. Guide to the literature of the zoological sciences. Burgess Publishing Co., Minneapolis. 128 pp.

Utinomi, Huzio. 1952. Bibliography of Micronesia (translation). Pacific Area Bibliographies. University of Hawaii Press, Honolulu. 157 pp.

General

Arber, Agness, 1934. The Gramineae. Cambridge University Press. 480 pp.

Bailey, L.H. 1906. Cyclopedia of American horticulture. 4 volumes. MacMillan and Co., New York. 5th ed.

Bodenheimer, F.S. 1951. Insects as human food. Dr. W. Junk, Publisher. The Hague. 352 pp.

* Bois, D. 1927-1937. Les plantes alimentaires chez tous les peuples et à travers les ages: histoire, utilisation, culture. 4 volumes.

Clute, W.N. 1932. The useful plants of the world. Indianapolis. 220 pp.

Cobley, Leslie S. 1956. An introduction to the botany of tropical crops. Longmans, Green and Co., London. 357 pp.

Copeland, E.B. 1924. Rice. MacMillan and Co., Ltd., London. 352 pp.

* Flower, W.H. and R. Lydekker. 1891. An introduction to the study of mammals, living and extinct. London.

Food and Agriculture Organization of the United Nations. 1949. Food composition tables for international use. FAO Nutritional Studies No. 3. 56 pp.

* Gerth Van Wijk, H.L. 1911-1916. A dictionary of plant names: plant names in Latin, English, French, German and Dutch. 2 volumes.

Grist, D.H. 1955. Rice. Longmans, Green and Co., London. 2nd ed. 333 pp.

* Hedrick, U.P. 1919. Sturtevant's notes on edible plants. State of New York. Department of Agriculture. 27th Annual Report, v. 2 part II. 686 pp.

* Hill, Albert F. 1937. Economic botany: a textbook of useful plants and plant products. McGraw-Hill Book Co., Inc., New York. 592 pp.

Holland, J.H. 1937. Overseas plant products. London. 279 pp.

Hylander, C.J. and O.B.Stanley. 1941. Plants and man. Blakiston Co., Philadelphia. 518 pp.

Lydekker, R. 1912. The ox and its kindred. Methuen and Co., Ltd., London. 271 pp.

* Popenoe, Wilson. 1920. Manual of tropical and subtropical fruits. MacMillan and Co., New York. 474 pp.

Sampson, H.C. 1923. The coconut palm. John Bale, Sons and Danielsson Ltd., London. 262 pp.

Sargent, F.L. 1930. Plants and their uses. Henry Holt and Co., New York. 610 pp.

Schery, Robert W. 1952. Plants for man. Prentice-Hall, Inc., New York. 564 pp.

* Simpson, George Gaylord. 1945. The principles of classification and a classification of mammals. American Museum of Natural History Bulletin v. 85. 350 pp.

Stanford, E.E. 1934. Economic plants. D. Appleton-Century Co., Ltd., New York.

* Vavilov, N.I. 1949-1950. The origin, variation, immunity and breeding of cultivated plants. Chronica Botanica v. 13, nos. 1-6.

Ward, Artemus. 1923. The encyclopedia of food. New York. 596 pp.

Asia

* Burkill, I.H. 1935. A dictionary of the economic products of the Malay Peninsula. 2 volumes. Oxford University Press, London.

* Grey, E.G. 1928. The food of Japan. League of Nations Publications. III. Health. 161 pp.

Henry, A. 1896. A list of plants of Formosa. Asiatic Society of Japan. Transactions v. XXIV: Supplement.

Holttum, R.E. 1954. Plant life in Malaya. Longmans, Green and Co., London. 254 pp.

Leung, Woot-Tsuan Wu, R.K. Pecot and B.K.Watt. 1952. Compositions of foods used in Far Eastern countries. U.S.Department of Agriculture. Bureau of Human Nutrition and Home Economics. Agricultural Handbook No. 34. 62 pp.

Ridley, H.N. 1922-1925. The flora of the Malay Peninsula. 5 volumes. London.

* Tate, G.H.H. 1947. Mammals of Eastern Asia. MacMillan Co., New York. 366 pp.

Thailand Royal Forest Department. 1948. Siamese plant names. Part 1. Botanical names-local names. Bangkok. 504 pp.

T[illegible]edie, M.W.F. and J.L.Harrison. 1954. Malayan animal life. Longmans, Green and Co., London. 237 pp.

Walker, Egbert H. 1954. Important trees of the Ryukyu Islands. U.S. Civil Administration of the Ryukyu Islands (in cooperation with the Pacific Science Board and the National Academy of Sciences) Special Bulletin No. 3. 350 pp.

Walker, Egbert H. 1944. Plants of China and their usefulness to man. Smithsonian Institution Publication 3754.

Ward, F. Kingdon. Botanical and geographical explorations in Tibet. Geographical Journal v. 88:385-413.

Ward, F. Kingdon. 1934. A plant hunter in Tibet. London. 317 pp.

India

Drury, Colonel H. 1873. The useful plants of India. William H. Allen and Co., London. 2nd ed. 512 pp.

Watson, J. Forbes. 1868. Index to the native and scientific names of Indian and other eastern economic plants and products. Trübner and Co., London. 637 pp.

* Watt, Sir George. 1908. The commercial products of India being an abridgement of "The Dictionary of the Economic Products of India." John Murray, London. 1188 pp.

Africa

Battiscombe, E. 1936. Trees and shrubs of Kenya colony. Nairobi, 201 pp.

Corfitzen, W.E. and Grover Kinzy. 1950. Preliminary report on Somalia agricultural projects. Economic Cooperation Administration, Special Mission to Italy. Rome. 42 pp.

Dalziel, John M. 1916. A Hausa botanical vocabulary. T. Fisher Unwin, Ltd., London. 119 pp.

* Dalziel, John M. 1937. The useful plants of West Tropical Africa being an appendix to the flora of West Tropical Africa by J. Hutchinson and J.M. Dalziel. Whitefriars Press, Ltd., London and Tonbridge. 612 pp.

Haagner, Alwin. 1920. South African mammals. H.F. and G. Witherby, London, 248 pp.

Holland, J.H. 1922. The useful plants of Nigeria. Kew Bulletin of Miscellaneous Information. Additional Series IX. 963 pp.

Johnston, Bruce F. 1958. The staple food economics of Western Tropical Africa. Stanford University Press, Stanford. 305 pp.

Lydekker, R. 1926. The game animals of Africa. 2nd ed. Rowland Ward Ltd., London, 483 pp.

Matheson, J.K. and E.W.Bovill. 1950. East African Agriculture. Oxford.

Tothill, J.D. ed. 1948. Agriculture in the Sudan. Oxford University Press, London. 974 pp.

Wildeman, E. de. 1939. Notes sur des plantes médicinales et alimentaires du Congo Belge. Institut Royal Colonial Belge, Section des Sciences Naturelles et Médicales. Memoires. Collection in -8°. Tome IX, fasc. 3. 356 pp.

* Williamson, M.A. 1955. The useful plants of Nyasaland. Government Printer, Nyasaland. 168 pp.

Middle East

Hooper, David. 1937. Useful plants and drugs of Iran and Iraq. Chicago Field Museum of Natural History, Botanical Series v. 9(3):69-241.

Post, George E. no date. Flora of Syria, Palestine and Sinai. 919 pp.

Indo-Oceania

Anderson, Donald. 1951. The plants of Arno Atoll, Marshall Islands. Atoll Research Bulletin No. 7. pp. 1-4, i-vii.

* Barrau, Jaques, 1958. Subsistence agriculture in Melanesia. Bernice P. Bishop Museum Bulletin No. 219. 111 pp.

* Barrau, Jacques. 1961. Subsistence agriculture in Polynesia and Micronesia. Bernice P. Bishop Museum Bulletin No. 223. 94 pp.

Bascom, William. Subsistence farming on Ponape. New Zealand Geographer v.5 :115.

Brown, Elizabeth D.W. and Forest B.H.Brown. 1931. Flora of Southeastern Polynesia. II. Pteridophytes. Bernice P. Bishop Museum Bulletin No. 89. 123 pp.

* Brown, Forest B.H. 1931. Flora of Southeastern Polynesia. I. Monocotyledons. Bernice P. Bishop Museum Bulletin No. 84. 194 pp.

* Brown, Forest B.H. 1935. Flora of Southeastern Polynesia. III. Dicotyledons. Bernice P. Bishop Museum Bulletin No. 130. 386 pp.

Brown, William H. 1921. Minor products of the Philippine forests. Philippine Islands, Department of Agriculture and Natural Resources. Bureau of Forestry. Bulletin no. 22. 3 volumes.

Brown, William H. 1951. Useful plants of the Philippines. v.1. Republic of the Philippines. Department of Agriculture and Natural Resources. Technical Bulletin no. 10.

Brown, William H. 1920. Wild food plants of the Philippines. Philippines Islands. Department of Agriculture and Natural Resources. Bureau of Forestry. Bulletin no. 21. 165 pp.

Brown, William H. and Elmer D. Merrill. 1919. Philippine palms and palm products. Philippine Islands. Department of Agriculture and Natural Resources. Bureau of Forestry. Bulletin No. 18.

* Carter, T.D., J.E. Hill and G.H.H. Tate. 1945. Mammals of the Pacific World. MacMillan Co., New York. 227 pp.

Child, Peter. 1960. Birds of the Gilbert and Ellice Islands Colony. Atoll Research Bulletin No. 74. 38 pp.

Chowning, Ann. 1961. Vernacular plant names in Melanesia. 10th. Pacific Science Congress, Honolulu. p. 137.

Christophersen, E. 1938. Flowering plants of Samoa. Bernice P. Bishop Museum Bulletin No. 154. 77 pp.

Conklin, Harold, C. 1953. Hanunóo-English vocabulary. University of California Publications in Linguistics v. 9. 290 pp.

Curran, C.H. 1945. Insects of the Pacific World. MacMillan Co., New York. 317 pp.

Danielsson, Bengt. 1954. Economy of Raroia Atoll, Tuamotu Archipelago. Atoll Research Bulletin No. 32. 109 pp.

Delacour, Jean and Ernst Mayr. 1946. Birds of the Philippines. MacMillan Co., New York. 309 pp.

Doty, Maxwell S. et al. 1954. Floristics and plant ecology of Raroia Atoll, Tuamotus. Atoll Research Bulletin No. 33. 58 pp.

Evermann, Barton W. and Alvin Seale. 1906. Fishes of the Philippine Islands. U.S. Bureau of Fisheries Bulletin v. 26:49-110.

Ewart, Alfred J. and Clive B. Davies. 1917. The flora of Northern Territory. McCarton, Ltd., and Co., Melbourne. 387 pp.

Glassman, Sidney F. 1952. The flora of Ponape. Bernice P. Bishop Museum Bulletin No. 209. 152 pp.

Guillaumin A. 1954. Lew plantes utiles des Nouvelles Hébrides: Journal d'Agriculture Tropicale et de Botanique Appliquée. v.1 parts 7-11.

Herre, Albert W. and Agustin F. Umali. 1948. English and local common names of Philippine fishes. U.S.Department of the Interior. Fish and Wildlife Service. Circular 14.

Harry, Robert R. 1953. Ichthyological field data of Raroia Atoll, Tuamotu Archipelago. Atoll Research Bulletin No. 18. 190 pp.

Hiatt, Robert W. 1951. Marine zoology study of Arno Atoll, Marshall Islands. Atoll Research Bulletin No. 4. 13 pp.

Hooker, J.D. 1867. Handbook of the New Zealand flora. Reeve and Co., London, 798 pp.

Irvine, F.R. 1957. Wild and emergency foods of the Australian and Tasmanian Aborigines. Oceania v. 28(2)L113-142.

Kanehira, Ryozo. 1933. Flora Micronesia. Tokyo. 468 pp.

Le Soeuf, A.S. and Harry Burrell. 1926. The wild animals of Australasia. George G. Harrap and Co., Ltd., London. 388 pp.

Loveridge, Arthur. 1945. Reptiles of the Pacific World. MacMillan Co., New York. 259 pp.

Luomala, Katharine. 1953. Ethnobotany of the Gilbert Islands. Bernice P. BishopMuseum Bulletin No. 213. 129 pp.

Marshall, Joe T. 1951. Vertebrate ecology of Arno Atoll, Marshall Islands. Atoll Research Bulletin No. 3. 38 pp.

Merrill, Elmer D. 1943. Emergency food plants and poisonous plants of the islands of the Pacific. War Department Technical Manual TM10-420. 149 pp.

* Merrill, Elmer D. 1945. Plant life of the Pacific World. MacMillan Co., New York. 295 pp.

Morrison, J.P.E. 1954. Animal ecology of Raroia Atoll, Tuamotus. Atoll Research Bulletin no. 34. 26 pp.

Moul, Edwin T. 1954. Preliminary report on land animals at Onotoa Atoll, Gilbert Islands. Atoll Research Bulletin No. 28. 28 pp.

Moul, Edwin T. 1957. Preliminary report on the flora of Onotoa Atoll, Gilbert Islands. Atoll Research Bulletin no. 57. 48 pp.

* Nichols, John T. and Paul Bartsch. 1945. Fishes and shells of the Pacific World. MacMillan Co., New York. 201 pp.

Parham, Richenda, H.B. 1943. Fiji native plants with their medicinal and other uses. Polynesian Society Memoir No. 16. 160 pp.

Randall, John E. 1955. Fishes of the Gilbert Islands. Atoll Research Bulletin No. 47. 243 pp.

Roxas, Hilario A. and C. Martin. 1937. A check list of Philippine fishes. Commonwealth of the Philippines. Department of Agriculture and Commerce. Technical Bulletin 6. 314 pp.

Safford, William E. 1929. Cultivated plants of Polynesia and their vernacular names; an index to the origin and migrations of the Polynesians. Bernice P. Bishop Museum Special Publication 7:183-187.

Safford, William E. 1905. The useful plants of the island of Guam. U.S. National Herbarium Contributions v.9 416 pp.

* Schuster, Walter H. and R. Rustami Djajadiredja. 1952. Local common names of Indonesian fishes. N.V. Penerbit W-Van Hoeve-Bandung - S'-Gravenhaje.

Smith, A.C. 1936. Fijian plant studies. Bernice P. Bishop Museum Bulletin No. 141. 166 pp.

* Specht, R.I. and C.P. Mountford. 1958. Records of the American-Australian scientific expedition to Arnhem Land. 3. Botany and plant ecology. Melbourne University Press, Melbourne.. 522 pp.

Steiner, Mona Lisa. 1961. A dictionary of vernacular names of Pacific food plants. Pacific Science Association supported by UNESCO. Mimeographed by the NRC of the Philippines. 371 pp.

Teuira, Henry. 1928. Flora of the Society and Tuamotu Islands. Bernice P. Bishop Museum Bulletin No. 138.

Wilder, G.P. 1931. The flora of Rarotonga. Bernice P. Bishop Museum Bulletin No. 86. 111 pp.

Central and South America

Blake, S.F. 1922. Native names and uses of some plants of Eastern Guatemala and Honduras. U.S. National Herbarium Contributions v.24(4):87-107.

* Dahlgren, B.E. 1936. Index of American palms. Chicago Field Museum of Natural History, Botanical Series v. XIV. Publication 355. 456 pp.

Dahlgren, B.E. and Paul C. Standley. 1944. Edible and poisonous plants of the Caribbean region. U.S. Government Printing Office, Washington. 102 pp.

* Gilmore, Raymond M. 1950. Fauna and ethnozoology of South America. Smithsonian Institution. Bureau of American Ethnology. Bulletin 143. (Handbook of South American Indians v. 6) pp. 345-464.

Herrera, Fortunato, L. 1939. Catalago alfabetica de los nombres vulgares y cientificos de plantas que exista en el Peru. Publicado por le Universidad Mayor de San Marcos, Lima. 363 pp.

Institute of Nutrition of Central America and Panama and the Interdepartmental Committee on Nutrition for National Defense (INCAP-ICNND) 1961 Food composition tables for use in Latin America. Government Printing Office. 144 pp.

* Levi-Strauss, Claude. 1950. The use of wild plants in tropical South America. Smithsonian Institution, Bureau of American Ethnology Bulletin 143 (Handbook of South American Indians v.6) pp. 465-486.

Miller, Gerrit, S. and Remington Kellogg. 1955. List of North American recent mammals. U.S. National Museum Bulletin 205. 954 pp.

Record, Samuel and Robert W. Hess. 1943. Timbers of the New World. Yale University Press, New Haven. 640 pp.

* Sauer, Carl O. 1950. Cultivated plants of South and Central America. Smithsonian Institution. Bureau of American Ethnology Bulletin 143 (Handbook of South American Indians v.6) pp. 487-544.

Standley, Paul C. 1920-1926. Trees and shrubs of Mexico. U.S. National Herbarium Contributions v. 23. parts 1-5.

Chapter 4

NUTRITIONAL ANALYSIS

Jeanne Nagle, Member, American Dietetic Association

In analyzing the diets for this study, all available reference materials have been obtained. In some cases the work which has been done is thorough and extensive. In many instances, however, it has not been possible to make an accurate nutritional analysis. In trying to apply figures from one area to another, one must take into consideration the differences in soil, climate, methods of preparation, etc. -- all of which can affect nutritional components to a considerable degree.

It has also been most difficult to obtain accurate nutritional analysis of many foods eaten by primitive groups. To do this properly a dietitian would have to study and analyze the particular foods as they are grown and utilized in the specific cultures. Thus, general rather than specific statements have been made in regard to the nutritional status of the groups studied, except in cases where definite, accurate information has been found.

Analysis of water in the different areas would likewise have an important effect on nutrition, according to its chemical composition. A scarcity of nutritious food exists in many parts of the world and this is

likewise a factor in regard to malnutrition. The problem of intestinal parasites also has a direct effect upon nutrition since they more often than not make the good nutrients received from food unavailable to their human host. This is a serious health problem which cannot be overlooked in judging the nutritional status of people around the world. In all areas studied the people very definitely need to be encouraged to make better use of their available resources for optimum nutrition.

Following are some general remarks on surveys of the different parts of the world studied. All statements are to be understood as generally, not specifically, true for the entire region treated.

A. Asia

Asian diet tends to be very low in animal protein. Calcium, riboflavin, thiamine, vitamin A and vitamin C are deficient. The fat intake and the total caloric level are low. There are some indications of vitamin A deficiencies here, but fresh vegetables do supply a good source of this. Beri-beri is common here as a result of a thiamine deficiency which derives from the eating of polished rice. Food in general is very scarce and this definitely is one of the most seriously afflicted parts of the world in this respect. Intestinal parasites, such as hookworms, are

frequently seen and the over-all health status of the people is low.

B. India

Malnutrition is quite frequently seen here among infants, children, pregnant women and nursing mothers. Protein malnutrition is largely responsible for the high rate of mortality and morbidity among children of the poor. Vitamin A deficiency is essentially a problem of children because the requirement for the vitamin is greatest in the period of growth. Of the many crippling effects, probably the most devastating is on vision. The number of blind in India runs into the many thousands. Anemia is the result of iron deficiency, malaria and hookworm infestations. Goiter is prevalent in the sub-Himalayan regions due to a deficiency of iodine in the diet. Apart from the deficiency of specific nutrients even the total food intake and caloric intake may be insufficient.

C. Middle East

Vitamins A and C appear to be deficient here and the

amount of riboflavin in the diet also appears to be low. Malnutrition does not seem to be as grave a problem here as elsewhere and the population does not appear to be starving.

D. Oceania

Generally speaking the diet here, for the most part, is deficient in calories, protein, fat, calcium, phosphorus, iron, vitamin A, thiamine, riboflavin and ascorbic acid. The diet does not meet the minimum standards set by the National Research Council though actual malnutrition is not present in most areas. The fermented toddy which the people here drink is a nutritious beverage containing .32% Protein, 13% Carbohydrate and 54 calories per 100 grams. This drink is also a good source of vitamin B. Breadfruit, which is eaten in quantity, furnishes a source of calcium and phosphorus which the people otherwise might not receive. The people here need to be encouraged to make better use of local foods.

E. Central and Middle America

In Mexico the diet tends to be high in carbohydrate and

low in protein. Tortillas, made with ground whole corn which has been soaked in lime water and baked on a griddle, furnish the bread. The lime provided in this fashion supplies some calcium which otherwise would be almost lacking in the diet, which does not usually contain milk or cheese. The use of milk for children should be encouraged and if a change to the American type of bread is made, it should be of the whole-grain or enriched type.

F. South America

A dietary survey conducted in the southern highlands of Peru in recent years revealed two important sources of dietary calcium not previously reported. Mineral and ash calcium ingested as a food spice, and along with coca, raised the calcium intake from the low figures recorded by standard nutritional surveys to a more substantial level. The diet here, however, seems to be lacking many essential nutrients -- namely, iron, riboflavin, vitamin A, and protein. Calcium was thought to be very deficient in this diet with the lack of milk and dairy products but this is questionable due to recent nutrition findings.

In the cities of Paraguay the people seem to have a much better diet than in the country. The protein content of the diet in the cities is considerably higher. Calcium is deficient in both the cities and the country; however, an uncalculated source may exist in "yerba mate," the morning drink. Phosphorus is low in both groups. The iron content is quite high with both groups as the city people eat quite a bit of beef and the country people eat manioc.

G. Africa

The diet in Nigeria is definitely on the starchy side and somewhat deficient in protein, particularly in the south where the tsetse fly makes cattle-raising impossible. In the north, there is more milk--which is frequently allowed to sour into a sort of yogurt--and the people are noticeably taller. In the south, the chief source of calories for the poor is yams or manioc. The native here should use the fruits which grow abundantly but seldom appear at meals. The waters surrounding Nigeria are filled with fish which are seldom used, however.

In Kenya there are two tribes on which many interesting food studies have been done. These two tribes are the Kikuyu and the Masai. The Kikuyu are mainly vegetarian and the Masai are largely carnivorous. The Kikuyu diet is high in carbohydrate and deficient in calcium and animal protein. The women consume more calcium and sodium than do the men. Kwashiorkor is quite prevalent here among the Kikuyu, along with rickets, bone deformities, tropical ulcers, pulmonary conditions, abnormalities in composition of the blood and a high susceptibility to certain diseases. The green leaves here contain large amounts of calcium. Lactifacient red millets contain fourteen times as much calcium and sixteen times as much manganese as ordinary food millets. The diets of both the Kikuyu and Masai are rich in phosphorus.

The Masai diet contains a liberal supply of the mineral elements and a large excess of protein and fat, but is low in carbohydrates. This diet is also quite high in calcium. Intestinal stasis and rheumatoid arthritis are common among the Masai. The diet here

is definitely lacking vegetable food rich in carbohydrate and cellulose. Needless to say, both of these dietaries could be improved with the use of green vegetables, and the Kikuyu diet should also include the use of milk.

Malnutrition is quite common in Africa. Nutritional work will undoubtedly be carried out in the future in view of the unused nutritional potential available.

In many parts of the world, one may be misled at first sight by the good physiques of the people, but it is not unusual to find that life expectancy is short and mortality among children extremely high. The weak or malnourished are not seen walking down the roads and streets. Wherever malnutrition exists, it is always the children who suffer most.

Some of the most serious results of nutritional deficiencies are the following:

Vitamin A	-	Xerophthalmia which results in blindness. Vitot's Spots.
Vitamin D, Calcium, and Phosphorus	-	Rickets
Protein	-	Kwashiorkor
Iodine	-	Goiter

Thiamine	-	Beriberi
Niacin, Thiamine, and Riboflavin	-	Pellagra
Vitamin C (Ascorbic Acid)	-	Scurvy
Calcium, Vitamin C, or Vitamin D and Fluorine	-	Dental Caries
Vitamin K	-	Hemorrhagic disease of infants
Iron, Protein, Vitamin A, and Vitamin C	-	Nutritional Anemia

The important food sources of the minerals and vitamins are:

Vitamin A	-	Liver, egg yolk, butter, cream, green and yellow vegetables.
Vitamin D	-	Irradiated foods, butter, egg yolk, liver.
Vitamin K	-	Leafy vegetables, pork-liver fat, soybean oil and other vegetable oils.
Vitamin C	-	Citrus fruits, strawberries, cantaloupe, tomatoes, sweet peppers, cabbage, potatoes.
Thiamine	-	Pork, liver, meats of organs, whole grains, enriched products, legumes, nuts, potatoes.
Riboflavin	-	Liver, milk, meats, eggs, enriched bread, green leafy vegetables.
Niacin	-	Liver, poultry, meat, fish, whole grains, enriched products, legumes, mushrooms.
Calcium	-	Milk, cheese, some green vegetables, molasses.

Phosphorus	-	Milk, poultry, fish, meats, cheese, nuts, cereals, legumes.
Iron	-	Liver, meat, oysters, legumes, whole grains, green vegetables, dried fruits.
Iodine	-	Sea foods, water and plant life in non-goiterous regions; sodium iodide in iodized salt.

In mentioning the important food sources one should not neglect the fact that many of the foods on which people in different parts of the world exist are good sources of these minerals and vitamins and where their specific nutrient content has been known, mention has been made of this. Manioc, which is a staple food for many people, is a source of calcium, depending mainly upon the amount consumed.

The list of deficiencies is appalling,and it would seem almost impossible for some of these people to live, were it not that we have come to regard deficiency in food to mean not an absolute but a relative deficiency. Fortunately the study of nutrition has shown us that extremely small variations in a dietary may be capable of making what has been an inefficient dietary an exceedingly efficient one.

In recommending changes and providing supplies to the dietaries of these peoples one should be guided by common sense and not recommend changes which would mean a total departure from habits of food

already practiced or the introduction of foods which would be strange and therefore abhorrent to the people. If at all possible, it is essential that their dietary be improved by foods already known to them.

Milk is less widely used than is desirable. The use of nuts and legumes as protein sources should be emphasized. The importance of green leaves cannot be overstressed due to their high vitamin A content. Certain leaves are also quite rich in calcium, such as "Dalrymple" in Nigeria, a plant which can be grown practically anywhere.

Insofar as possible, it would be wise to supply native peoples with enriched foods of types already known to them, rather than attempting to supply totally new foods, no matter how nutritionally desirable.

Sources of Data

1. National Research Council - National Academy of Sciences. Personal communications.

2. Food and Agricultural Organization of the United Nations (North American Regional Office). Personal communications.

3. Woot-Tsuen Wu Leung, et al. Composition of Foods Used in Far Eastern Countries, U.S. Department of Agriculture, Agriculture Handbook No. 34. Washington, 1952.

4. Woot-Tsuen Wu Leung and Marina Flores. Food Composition Table For Use in Latin America. Interdepartmental Committee on Nutrition for National Defense, National Institutes of Health. Bethesda, Maryland, 1961.

5. Platt, B.S. The Composition of Foods. Great Britain, Medical Research Council, Special Report Series No. 297.

6. McCance, R.A. and E.M. Widdowson. Tables of Representative Values of Foods Commonly Used in Tropical Countries. Great Britain, Medical Research Council, Special Report Series No. 302.

7. Campbell, J.A., et al. Food Composition Tables for Use in the Middle East. American University of Beirut, Faculty of Agricultural Sciences, Division of Food Technology and Nutrition, Publication No. 20. April, 1963.

8. Chatfield, Charlotte. Food Composition Tables - Mineral and Vitamins - for International Use. FAO Nutritional Studies No. 11. Rome, 1954.

9. Gopalan, C. and Balasubramanian, S.C. (Aykroyd). The Nutritive Value of Indian Foods and the Planning of Satisfactory Diets. Indian Council of Medical Research, 1963.

10. Food Composition Tables Recommended for Use in the Philippines, 1957.

11. Public Health Reports. Miscellaneous issues. U.S. Department of Health, Education and Welfare, Public Health Service. Washington, D. C.

12. Cooper, Barber, Mitchell and Rynbergen. Nutrition in Health and Disease. 12th edition.

13. Journal of the American Dietetic Association. Miscellaneous issues.

14. Proceedings of the Ninth Pacific Science Congress of the Pacific Science Association, 1957. Volume 15 - Nutrition. The Secretariat, Ninth Pacific Science Congress, Department of Science, Bangkok, Thailand, 1959.

15. Miller, Carey D., et al. Vitamin Values of Foods Used in Hawaii. University of Hawaii, Hawaii Agricultural Experiment Station, Technical Bulletin 30. May 1956.

Chapter 5

MAJOR AREA SURVEYS

This chapter is designed to give an over-all view of the general background and specific nature of the relationships between culture, environment, and food patterns in major areas containing a number of ethnic units.

The surveys are arranged from west to east, starting with Africa:

1. Africa (Sub-Saharan)
2. Middle East
3. Indian Subcontinent
4. East Asia
5. Southeast Asia
6. Austral-Oceania
7. South and Middle America

The major area groupings have been devised for this study on the basis of broad cultural, ethnic, geographical, and economic factors and coincide with previous cultural unit breakdowns to only a limited degree.

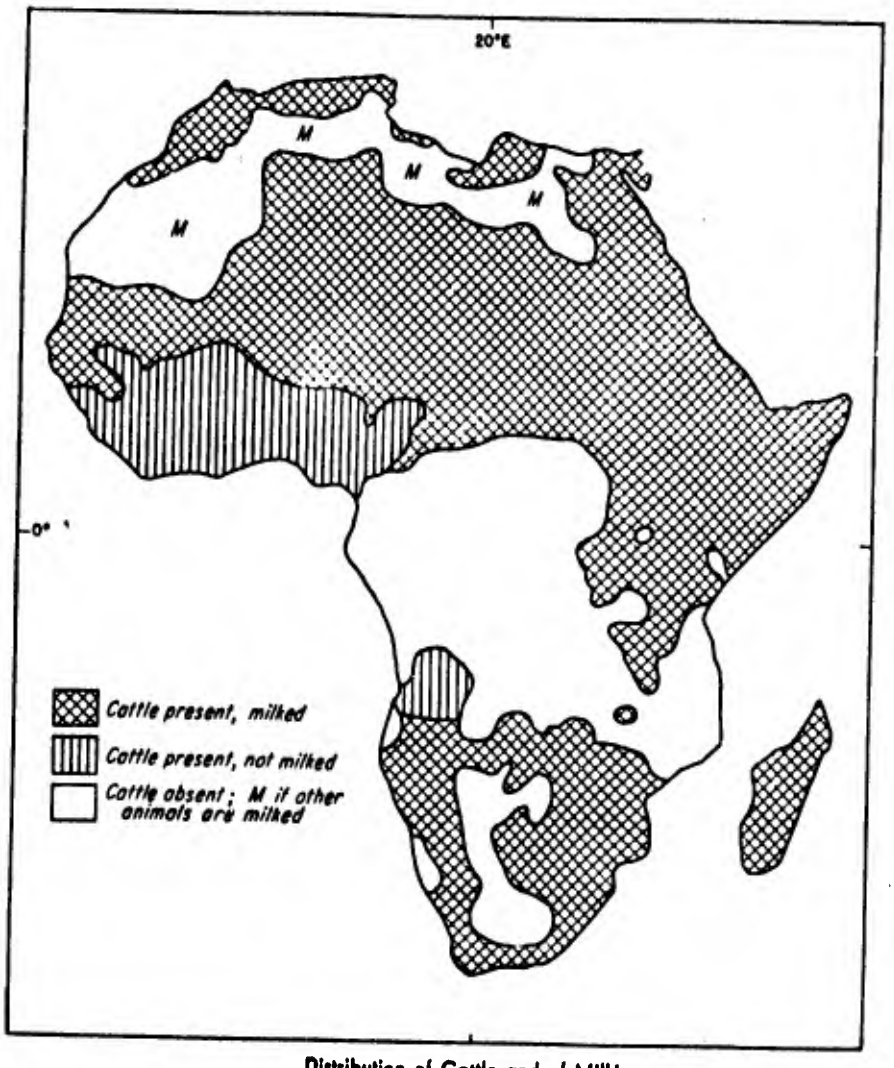
Sub-Saharan Africa

Sub-Saharan Africa as a whole, excluding the Moslem populations of the Sudan, has been divided into six major areas, containing data on 105 ethnic groups. The Negro peoples in this great region, in general, are malnourished. That is, in many cases the quantity of food ingested is sufficient, but quality is lacking. Much of the population depends upon a single staple, which forms as much as 75 per cent to 80 per cent of the caloric intake, with the result that adequate quantities of vitamins, minerals, and other nutrients are not ingested. As a result of these deficiencies, the people generally suffer from chronic liver disease, hypersusceptibility to infectious diseases, and low vitality. In other words, the African inherits "a way of living which virtually commits him to a life pattern which invites physical and mental catastrophe."

Hunting and gathering survive today as the main stay of existence only among a few remnant peoples, such as the Bushmen, the Bambuti, and the Dorobo. As a subsidiary means of subsistence, however, hunting and gathering retain some importance over most of Africa. Fishing is practiced as a subsidiary economic pursuit where geographical conditions permit. In only a few societies, however, is fishing the

dominant activity, and then generally only where the environment does not permit agriculture or animal husbandry as the major industry as, e.g., among the Lebu and the Bajuni.

Animal husbandry as a subsistence activity -- not counting those domesticated species which contribute but slightly to the food supply-- includes the raising of pigs, goats, sheep, cattle, and camels. All of these animals were introduced to the continent from Asia by way of Egypt. The goat, except for the dog the most widespread of African domestic animals, has in many places penetrated even the tropical forest. Sheep are used not for their wool but rather for their flesh and fat tails. The cattle represent varieties of and crosses between the zebu (Bos indicus) and Mediterranean cattle (Bos taurus). While cattle are widespread, they have penetrated the tropical forest zone only to a very limited extent and are excluded from many places by the presence of the tsetse fly. Cows, goats, and camels are milked throughout the area, and over most of it butter is made -- for cosmetic purposes, at least, if not for food. There are a number of purely pastoral societies in Sub-Saharan Africa, mostly in East Africa. Among them are the Masai, the Turkana, and the Hottentot.



Distribution of Cattle and of Milking

Agriculture is practiced everywhere in Sub-Saharan Africa except among the surviving hunters and gatherers and a few of the exclusively fishing and pastoral peoples. Africans grow approximately nine-tenths of the cultivated plant varieties known to man. The plants that have attained the status of an outstanding staple in

at least several of the societies of the subcontinent are listed below. These are listed roughly in order of importance:

Sorghum and pearl millet, in a very large number of societies in Negro Africa and adjacent regions.

Maize, in many societies in the tropical-forest zone and southern Africa and in occasional ones in East Africa and the Sudan.

Manioc, in many societies in the Congo, Equatorial Africa and adjacent regions.

Yams and taro, on the Guinea coast and in a number of societies in the southern Sudan, Cameroons, and the Congo Basin.

Bananas, in many societies in Uganda and the tropical-forest zone.

Rice, in Madagascar, an occasional society in East Africa, and all of coastal West Africa from Senegal to the Ivory Coast.

Eleusine, in a considerable number of societies in East Africa.

Fonio, in a number of societies in the western Sudan.

Legumes, sweet potatoes, and teff, in occasional isolated societies.

As might be expected, the ethnographic and diet coverage in the sources on Sub-Saharan Africa is variable. Among the best described societies are the Pedi, Tallensi, Bemba, Lala, Azande, and Tonga. Also well described are the Lango, Nyamwesi, Sotho, Fang, Sonjo, Bini, Futajalonke, Diola, and Ndiki.

A great deal of acculturation in food habits and kinds of food produced has taken place in the past and is taking place now. Over wide regions of Africa today, plants introduced in recent years from the New World, notably manioc and maize,

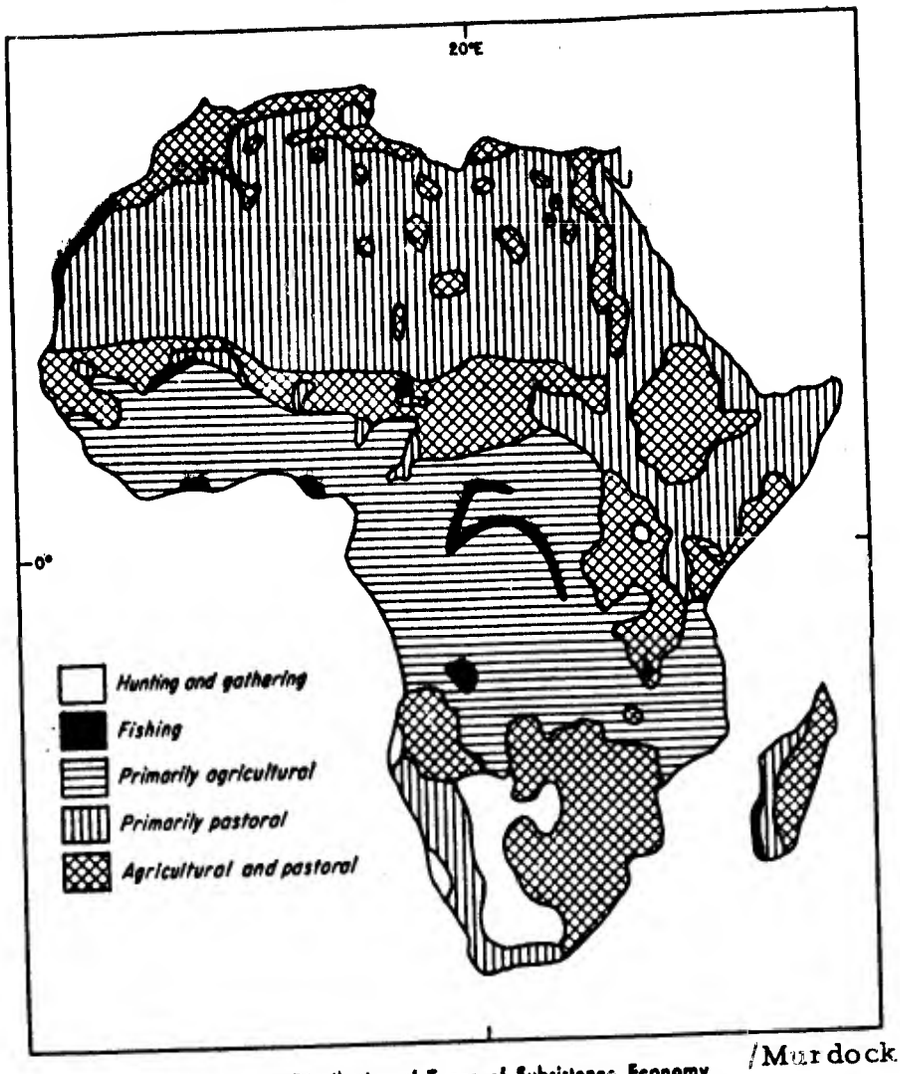
Classification of African Cultivated Plants by Type and Origin

Type	Place of origin				
	West Africa	Ethiopia	Southwest Asia	Southeast Asia	America
Cereal grains	Fonio Pearl millet Sorghum	Eleusine Teff	Barley Wheat	Rice	Maize
Legumes	Cow pea	...	Broad bean Chick pea Lentil Pea	Gram bean Hyacinth bean Pigeon pea Sword bean	Haricot bean Lima bean
Tubers and root crops	Coleus Earth pea Geocarpa bean Guinea yam	Ensete	Beet Chufa Onion Radish	Taro Yam	Malanga Manioc Peanut Sweet potato
Leaf and stalk vegetables	Okra	Cress	Cabbage Lettuce	Jew's mallow	
Vine and ground fruits	Fluted pumpkin Gourd Watermelon	...	Grape Melon	Cucumber Eggplant	Pineapple Pumpkin Squash Tomato
Tree fruits	Akee Tamarind	...	Date palm Fig Pomegranate	Banana Coconut palm Mango	Avocado Papaya
Condiments and indulgents	Kola Roselle	Coffee Fenugreek Kat	Coriander Garlic Opium poppy	Ginger Hemp (hashish) Sugarcane	Cacao Red pepper Tobacco
Textile plants	Ambary Cotton	...	Flax		
Oil plants	Oil palm Sesame	Castor Remtil	Olive Rape		

/Murdock, 1959/

have attained dominant roles as staple crops. At times they are so dominant that the native traditions have no mention of the crops being introduced and insist that they are indigenous. In the past, there have been great migrations of peoples over large areas with concomitant changes in environments and the kinds of food available. Among these were the great Bantu migration down the eastern part of Africa and a more recent migration of the Ngoni and other tribes northward from the Zulu area as a result of war. Another recent case was the migration of the remnants of the Batutsi (Watusi) from Ruanda into the Congo. Within the twentieth century, there has been a tremendous increase in acculturation all over the area, with an increase in nationalism and the attempts of newly-formed nations to emulate the customs of the longer-established nations in the rest of the world. A great deal of detribalization and urbanization has been going on, with the result that traditional diets and food patterns are breaking down and new ones are being formed all over the continent. Accordingly, data for a large part of the area may be out of date.

As mentioned above, Sub-Saharan Africa has been divided into six major areas on such grounds as environment, food patterns, religion, basic economy, historical background, etc. These are very general breakdowns and were made to facilitate the handling of the data.



Distribution of Types of Subsistence Economy /Murdock, 1959/

1. West Africa: This area encompasses the non-Moslem peoples between northern Senegal on the west and southern Nigeria on the east. It includes a number of environments, which can be divided basically into three: the savannas of the Sudan, the mountain forests and grasslands, and the tropical forest areas along the coast. In the first area, grains, cotton, and peanuts are common crops,

and shea butter is made from the oil found in the nuts of the shea tree. This is one of the major cattle-herding areas of Africa, though horses, sheep, goats, and other domestic animals are also kept. The same may be said in general for the second zone, although some crops common to the tropical forest zone are also grown here. The Guinea Coast forms the third zone. The crops and livestock here are similar to those of the Central African areas, though yams are more important than manioc, and bananas are not grown in large quantities. Hunting and gathering groups are rare, agriculture being the predominant form of productivity, together with some fishing. Most of the groups live in what were originally French colonies and have tended to acculturate toward French rather than British cultural patterns.

2. West Central Africa: This is the general area of the Congo Republics and the Cameroun Republic. In the northern part, there are temperate mountain forests and savannas; the economy is mixed agricultural and pastoral, with an emphasis on cereal crops. However, the remainder has relatively constant high temperatures during the year, heavy rainfall, and high humidity. Some of the densest forests in Africa are found here. The region is predominantly inhabited by agricultural peoples who live in distinct villages or settlements and who

have cleared sections of the forests for their farms. Root crops, particularly manioc, yams, and taro are commonly grown, as well as bananas, plantains, palm fruits and other fruits. The people keep domestic goats, sheep, chickens, and ducks. Fish also can be an important addition to the diet. Cattle and other large domestic animals are not kept because of the presence of the tsetse fly. Small bands of Pygmy hunters and gatherers are scattered throughout the area, generally living in symbiotic relationships with the agricultural peoples. Today, this is an area of much change, population movements, and warfare. Accordingly, traditional dietary patterns are probably in a state of flux.

3. Nilotic Sudan: This is primarily a grassland area of pastoral peoples, generally cattle-keepers. Some cereals are grown, and fishing is important in some communities. Because of its isolation, it is probably conservative in dietary patterns, although in the past there has been a good deal of missionary activity in the area. Recently, the Moslem Sudanese Republic has ejected all missionaries and we have little up-to-date knowledge on it. However, there probably has not been a great deal of acculturation.

4. East Central Africa: This includes most of what was British East Africa (Kenya, Uganda, Tanganyika, Zanzibar, Zambia) as well as the former Belgian Trust Territories of Ruanda and Urundi. The northern part is mixed agricultural and pastoral and the southern part generally agricultural. Rainfall is moderate in these areas, and the temperatures are high during the day but drop at night. There are some pockets of tropical forest, such as the Buganda area of Uganda, where plantains and other tropical forest crops are important, but much of the region is grassland, devoted to grain crops and cattle herding. Basic foods are cow's milk prepared in several different ways and various forms of porridge and other prepared grains. Root crops are relatively unimportant. Small domestic animals are found, and there is some fishing in the Lakes area. In some cases, the choice of productive activity has clearly been determined by environment, while in other cases it has been made in terms of the past interests and experience of a particular group. Cattle generally have an importance in excess of their food value, in terms of prestige and trade. Some small groups of hunting and gathering peoples are found. These regions have been the scene of extensive movements of peoples, particularly pastoral peoples, often with considerable warfare.

The whole region is an area of much acculturation under the British sphere of influence. There are large numbers of European settlers scattered through the highlands, while on the coast there is a good deal of Arabic and Indian influence.

5. Southern Africa: This includes Angola, Malawi, Southern Rhodesia, Mozambique, Swaziland, Bechuanaland, Basutoland, and the Union of South Africa. The region can be divided into three different environmental areas. The first is a savanna which extends through the center of the area, including Malawi, Southern Rhodesia, part of Angola, and the Union. Temperatures remain high during most of the year. Cattle herding and grain crop farming are the chief productive techniques, while small domestic animals are also kept. The second is the desert zone in the west, consisting of the Kalahari Desert and its environs. Much of this area is flat grassland, with some bush regions. The Bushmen live in the drier areas, while the cattle herding Hottentot and Bergdama live in the grassier areas. The third zone has a Mediterranean environment and extends from the Cape of Good Hope northeastward to the Limpopo river region. The people of the area around the Cape grow grain crops (wheat, barley, oats) and vegetables and herd cattle and sheep. To the northeast, the area is a high plateau, with

relatively flat, dry grassland and bush country, and a subtropical coastal area. Much of the region has been taken over by European farmers, and the natives generally live on restricted reserves, with their traditional cultures greatly modified.

6. Madagascar (including the Comoros): The island has a climate that is extremely varied, but which can be divided into three geographical zones. A rugged central plateau is relatively cool, with seasonal rainfall. Here, wet rice, grown in terraced fields, is the staple. In the west and south, the plateau slopes to the sea. In these lower areas the climate is hot and dry, and open plains and bush are common. Since the soil is inadequate for agriculture, cattle herding is the main occupation. To the east of the central plateau, an escarpment region, with high rainfall and heavy forests, blends into the eastern coastal zone, which is hot and humid. In these eastern sections, maize, wet and dry rice, taro, and sweet potatoes are grown. The islanders speak mainly a single Malayo-Polynesian language, Malagasy, and many characteristics of their culture indicate extensive contact with Southeast Asia. The Comoros are a mixture of Malagasy, Negro, and Arabic elements and are mainly dependent on fishing and agriculture for their subsistence.

General references on Africa:

1. Murdock, George Peter. Africa: Its Peoples and Their Culture History. New York, McGraw-Hill, 1959.

2. Hance, William S. A Geography of Modern Africa. New York, Columbia University Press, 1964.

3. Herskovits, Melville J. The Human Factor in Changing Africa. New York, Alfred A. Knopf, 1962.

4. Ottenberg, Simon and Phoebe. Cultures and Societies of Africa. New York, Random House, 1960.

5. Smith, Prudence, editor. Africa in Transition. London, Max Reinhardt, 1958.

6. Stamp, L. Dudley. Africa: A Study in Tropical Development. New York, John Wiley & Sons, Inc., 1953.

The Middle East

The term Middle East, as used in this project, refers to the area connecting Negro Africa, Europe, and Asia. The predominantly Moslem nations of the region extend from Turkey in the north to the limits of the Sudan in the south, and from Afghanistan in the east to Morocco in the west. The three exceptions to this religious and political prominence of Islam are Coptic Ethiopia, primarily Christian Lebanon, and Jewish Israel. Approximately 90 per cent of the population are Moslems, 4 per cent are Christians (divided among several denominations), less than 2 per cent are Jewish, and another 2 per cent in southern Sudan belong to African tribal cults. The rest belong to semi-Moslem sects (e.g. the Druze).

Over much of this area, the year is divided into a hot, rainless period and a rainy one in which precipitation may or may not be fully adequate for raising crops. This weather has led to a system of agriculture in which "mixed" farming (the combination of cultivation and animal husbandry) has had little or no place. Farming is generally of the peasant subsistence type. Geographically, the area is characterized by a basic dichotomy between desert and arable lands. Over 90 per cent of the area is desert, or at best grazing steppe, with great extremes of temperature, almost no rain, and a very scanty vegetation of low grass

and drought-resistant bushes. The agricultural areas are, generally speaking, Mediterranean in character, with long, hot, rainless summers, rainy, temperate winters, and a native vegetation ranging from grass to open deciduous forests. The transition from desert to arable land is gradual, with the notable exceptions of the two zones of the Nile and the Tigris-Euphrates valleys. The peoples of the Middle East, in their adaptations to their physical environment, largely conform to this basic dichotomy of desert and cultivated land. The deserts, whether of the plateau and dune type or of the mountain and bolson variety, are the home of nomadic animal-breeding tribes. The arable land, with its very different physical conditions, is the abode of the settled village farmers. The remaining population lives in towns, which generally serve as trade centers for the surrounding areas. About 20 per cent of the region as a whole is composed of urban population; about 65 per cent are settled farmers, and about 15 per cent are nomadic or seminomadic peoples. The urban population is estimated to be more than 10 per cent in Afghanistan, the Sudan, and the Arabian peninsula, but makes up 40 per cent of the population of Lebanon. The nomadic and seminomadic peoples range from none at all in Lebanon to 33 per cent in Afghanistan, Jordan, and the Arabian peninsula. This economic pattern of trade, agriculture, and nomadic pastoralism in close connection is found all

over the region. Complementing this is the cultural influence of Islam. Although non-Moslem minorities exist, and Islam itself has its own schisms, the influence of a single religious system has led to a culture transcending ethnic and linguistic differences. The "Moslem World" is generally valid as a term referring to the region.

Living conditions vary somewhat from one tribe to another and from one settled community to the next, yet these differences seem superficial when juxtaposed with the profound differences which separate the total living conditions of each type of community from those of the others. The nomads can be divided into three major types. The first, the camel nomads, whose main livestock consists of herds of camels and who engage in long seasonal migrations, are found in the dry summer months near the steppe belt within sight of agricultural areas and in the wet winter season deep in the heart of the desert. The camel is generally the main source of livelihood for these nomads, and its milk is a staple food for long periods. Our samples include the Tuareg, Bedouins of Saudi Arabia, Rwala, and Somalis. The second type are the "seminomads," also known as cattle and/or sheep and goat herders, who occupy smaller territories and who stay nearer the villages. Syrian and Jordanian Bedouins, Adamawa Fulani, Bororo, and Teda are of this type. The third kind of nomadism, called "transhumance" is practiced over mountain areas, most

typically in the Iranian Plateau. Here the tribe spends the summer in the mountains and winters in the lower levels of the plateau or in the valleys. The Khamseh, Moghals, and part of the Kurds conform to this pattern. The introduction of mechanized and organized transportation in the deserts has caused a decline in the value of camels, and further, political boundaries have limited the range of migrations. As a result of these changes, many camel nomads are changing to cattle and smaller livestock. The Batahin in the Sudan are an example. Other nomads are either voluntarily or forcefully being settled to cultivate the soil. This transition is taking place in Iran, Iraq, Jordan, eastern Turkey, and around the oil fields of Saudi Arabia.

The most typical way of life in the region is that of the agricultural village. With few exceptions (for example fishing villages in Bahrain, Hadramaut, and the Marsh Arabs), the settled villagers are subsistence farmers, with a very low standard of living. Arable land in the region is restricted, and apart from petroleum, the natural resources are few. Insufficient rainfall limits farming, and the expansion of agriculture depends on increased irrigation plus the arrest of soil erosion. This is further complicated by the great inequality in distribution of wealth and the lack of local capital to provide necessary equipment to exploit available resources.

Generally speaking, the nomads live mainly on cereals, dates, milk, and milk products. The settled farmers, for the most part, consume cereals, pulses, some fruit and vegetables, and to a lesser degree milk and milk products; meat is scarce in the diet of both groups. In general, for lack of information based on systematic nutritional surveys, little can be said about food consumption in the region except that in wide areas there appears to be a deficiency in caloric intake. In a few others (e.g. Turkey) adequate calories are available, but nutritional imbalance is widespread and serious, with a lack of "protective foods" rich in essential vitamins and minerals. Deficiency diseases such as rickets and pellagra are widely reported. Some groups are worse off now than in the past due to increasing pressures on the land (in Egypt especially) and the rising cost of living.

For survey purposes, the region has been divided into three major areas:

1. Middle East: This refers to the non-Arabic-speaking northeastern part, including Turkey, the Zagros range, Iran, and Afghanistan. The principal ethnic groups here speak Ural-Altaic and Iranian languages. The sample includes generalized composite diets for the rural populations of Iran, Turkey, and Afghanistan, an excellent summary on the diet of the Kurds, and adequate ones on the

transhumance nomads: Moghols and the Khamseh confederacy. In all these diets, bread, milk products, and tea are vital. The more prosperous people consume more rice, meat, and vegetables. Clarified butter is the preferred fat. Mulberry, acorn, and walnut flour is used in times of shortage. Taboos are Islamic and include blood, alcoholic beverages, and the flesh of pigs, asses, horses, and carrion eaters.

2. Arab Middle East: The sample includes 18 fairly well described groups, ranging from the true camel nomads (Rwala) to the Marsh Dwellers of southern Iraq. Excellent dietary studies are available for three Christian villages in Lebanon and one Moslem village in northern Syria. Broadly speaking, the basic diet is very similar to that of the group above. Bread is the staff of life and is preferred when made from wheat flour, although most people have to use the cheaper barley, sorghum, or maize flours. Rice is an important food item in Iraq and on the eastern coast of Arabia, while legumes loom large in the diet of the Fellahin. Christians of Lebanon may also eat raw meat and drink arak, a distilled grape wine. The Rwala are unique in that they seem to ignore the Islamic taboos and are reported to eat wild pig, blood of animals, and hyenas.

3. North Africa, Ethiopian Plateau, and the Sudan: This part of Africa is inhabited by people speaking Semitic, Hamitic, or Sudanic languages

and exhibiting various degrees of racial mixture. The Hamitic speakers are represented by the Berbers (Kabyle, Rif, Mzab, and Mediouna) and the Cushitic-speaking Gallas and Somalis. The Amhara speak a Semitic language, while most groups in Chad, Niger, Mali, and Senegal speak Sudanic languages.

The coastal strip of North Africa is inhabited mainly by Berbers (or Berber-Arab mixtures) whose economy ranges from sedentary agriculture to transhumance nomadism. Good information is available on the diets of the Tuareg, Mzab, and rural Morocco. Less satisfactory information is available for the Kabyle and Shawiyeh. In general, the diet is based on cereals supplemented by milk, vegetables, and some meat. Olive oil is the principal fat used in cooking. Fruits (especially grapes and figs) are available in season. Cereals are eaten either in the form of bread or made into the Berber national dish, couscous. To the southeast of this area is the Ethiopian plateau and adjacent Somaliland, inhabited by ethnically different people. The majority are farmers, although many practice secondary animal husbandry. Basic food crops are cereals (including eleusine and teff), ensete, pulses, and oil seeds. Meat and vegetables are highly seasoned and eaten in stew form as a side dish with bread or porridge. Only the Amhara eat raw meat. The Cushitic-speaking Galla, Kafficho, and Somalis reject raw meat, hippopotamus,

all fish, chicken, eggs, and both horse and donkey meat. Pork is universally taboo. Despite the Moslem injunction against alcoholic beverages, all groups indulge in mead and beer drinking.

The last area in this section is the Sudan. It corresponds roughly to that portion of Negro Africa north of the Equator which is under Mohammedan influence. The Sudan is a transitional zone between the arid grasslands and deserts in the north and the humid savannas and forests to the south and southeast. The northern part is generally good cattle country, and groups such as the Bororo and the Adamawa Fulani specialize in cattle breeding. The majority of the tribes are engaged in hoe agriculture (with secondary animal husbandry). Sorghum, millet, and maize are the staple crops. Fishing, gathering, and some hunting supplement the food supply. Good dietary studies are available for the Hausa, Lebu, Wolof, Fur, and Dyerma. The diet of the majority of the groups in the Sudanic zone is fairly uniform: starchy foods are eaten in the form of paste or porridge, with a soup or sauce containing green leaves, onions, and salt, all highly seasoned with red pepper. In the south, red palm oil is added; in the north, peanut oil when available. Meat is eaten occasionally and is usually added to this basic sauce. The use of tea, tobacco, hemp, and kola nut is widespread in the region.

Bibliography of General or Survey Sources

1. Coon, Carleton S. Caravan. New York, Henry Holt and Co., 1951.

2. Fisher, Sydney Nettleton, Ed. Social Forces in the Middle East. Ithaca, New York, Cornell University Press, 1955.

3. Fisher, W. B. The Middle East, A Physical, Social and Regional Geography. London, Methuen, 1950.

4. Murdock, G. P. Africa, Its People and Their Culture History. New York, McGraw-Hill, 1959.

5. Royal Institute of International Affairs. The Middle East: A Political and Functional Survey. 2d ed. London and New York, Royal Institute of International Affairs, 1954.

6. United Nations. Review of Economic Conditions in the Middle East. New York, United Nations, 1952.

Indian Subcontinent

The Indian peninsula (including Pakistan and Ceylon) is clearly marked off from the rest of Asia by a broad line of high mountains. The only open area is in the northwestern hill region, and it was here that the great empires of the past had bases of power on the plateau at Kandahar or on the Punjab Plain. This relative geographical isolation has led to the development of a most complex and diversified culture, held together by a loose and vague Hinduism. In the north, Hinduism's rival religion, Islam, claims a large number of adherents, which has led in recent years to the political split of Pakistan from the rest of the peninsula. Apart from the two great religions of Hinduism and Islam, there are numerous enclaves of primitive tribal religions and "fossils" of ancient faiths, such as the Jains, Parsees, Jews of Cochin, etc. This cultural and ethnic heterogeneity is explained in part by the geographical diversity of the subcontinent. The area has been divided into three macro-regions: The Extra-Peninsular mountain wall in the far North, the Indo-Gangetic Plains, and the Old Peninsular Block in the South. Ceylon, separated from India by a strait only 20 miles wide, has a marked individuality and will be treated separately.

The people of India and Pakistan are predominantly agrarian, and it is estimated that around two-thirds of the population (1951: 438,000,000) live directly from the soil. Agriculture outside the Himalayan region is nearly everywhere governed by the rhythm of the monsoonal year, so that water control and distribution form one of the crucial problems of India. Despite the baffling cultural diversity of India, there is an underlying unity, since the structure

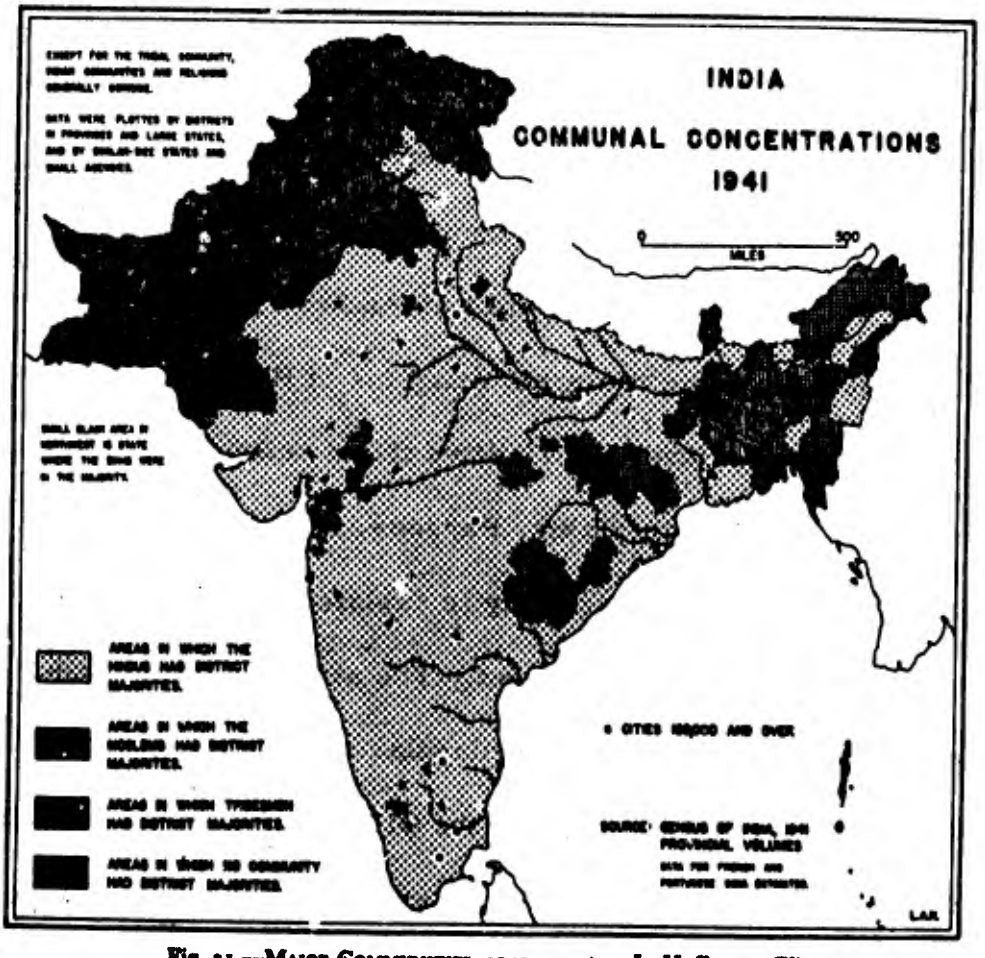


Fig. 31.—Major Communities, 1941; courtesy L. Hoffmann *Gy.*

of the society bears the strong impress of Hinduism, especially its famous caste system. Even groups who are outside Hinduism are influenced by caste attitudes: Indian Christians, Sikhs, some Tibetan peoples, and even Moslems retain traces of caste spirit. There is a rough correlation between ethnic stock and language: The Himalayan peoples (tribes) speak mainly Tibeto-Burmese languages; those of the central hills, Dravidian or yet older Austric languages; the south is almost solidly Dravidian, and the North is mainly Indo-Aryan. Next to religion, language is the greatest divisive force in India (and Pakistan) today. India is still struggling with the problem of a common language (Hindi) for the nation. The official language in Pakistan is, or shortly will be, Urdu.

Probably the best way to approach the formidable task of generalizing on diet in the Indian subcontinent is by using the "community" as a unit. A "community" refers primarily to a religious division, although race, language, caste, geographical localization, and broad cultural distinctions shape them apart. The largest community is that of the Hindus: in 1941 they numbered 251 million, or 66 per cent of the total population. Except for Pakistan, Kashmir, and the northeastern border areas, they are spread all over the Indian peninsula. The Hindus belong to some 3,000 castes and subcastes,

and traditionally each caste prepares its own foods and eats separately. The highest caste, the Brahmans, are strict vegetarians and abstain from all alcoholic drinks. The rest abstain in general from beef (the cow being held sacred), although some very poor and low castes may eat beef occasionally. The Balahis, a low weaver caste from the Nimar District, are considered untouchables by others, since they eat beef and carrion. In general, the lower one goes down the caste ladder, the greater the likelihood that the people will consume meat. The various castes all have their own dietary taboos.

The general Hindu diet is based on cereals (rice, wheat, millet, and barley) supplemented by legumes and a large variety of vegetables, chiefly of the pumpkin and tuber varieties. Milk and milk products are generally desired, but form luxuries for the majority. Clarified butter, vegetable oils (seeds mainly), and coconut oil are the fats used in cooking. Almost all dishes cooked by Hindus are very spicy and pungent. An excellent study is available for Karimpur, a small Hindu village in northern India, which may serve as a sample dietary for the whole region. Rice is the staple par excellence in India, except in regions in the north where the land and climate are unsuitable for its cultivation, where wheat, barley, taro, and white potatoes take over. Apparently white potatoes

were introduced by colonial administrators and missionaries and have become important in many parts of northern India and western Tibet. Most Hindu communities indulge in smoking tobacco and hemp, chewing betel nut, drinking liquor, and even using opium where available. Christianity, which has found most of its converts among low Hindu castes and semi-Hinduized tribes, has banned the use of liquor and narcotics and has forbidden animal sacrifice. The latter prohibition has resulted in lower meat consumption by the villagers, since formerly animals were sacrificed regularly and eaten communally.

Aside from his use of European tobacco and liquor, the Hindu in general is rather conservative in diet and reluctant to try new foods, especially because of the various taboos.

The second community in the Indian subcontinent comprises the Tibetan-speaking tribes, and our sample includes generalized materials on the western Tibet border people, the Sherpas of Nepal, and the Lepcha of Sikkim. The first two groups have a common diet based on wheat and barley and largely supplemented by potatoes. Being Buddhists, they are nominally vegetarians, but most groups are not averse to eating meat of animals that die by accident or are slaughtered by others. Milk curds and butter are important in the diet, as is buttered tea.

Beer and rice liquor are drunk. The Lepcha of Sikkim are interesting in that their diet is more "Indian," based on rice and side dishes of vegetables, which are often spiced. They also raise domestic animals for food and eat any wild animal they can lay hands on. Beverages include tea and millet beer, and a bootleg liquor made from tree ferns.

There is adequate information on all these Tibetan-speaking groups of India.

The third community on the subcontinent are the Moslems. The majority live in Pakistan, with the rest mainly in the contested state of Kashmir. Moslem invasions of the northern part of India date back to the eleventh century. Islam made most of its converts from the lowest Hindu castes. In general, the diet is based on cereals: wheat and barley supplemented by millet and rice. Bread, some meat stew, and a vegetable dish make up the common menu. Animals have to be slaughtered in ritual fashion to be rendered acceptable to a Moslem; the pig and its flesh are taboo, and a general fast during the month of Ramadan is observed. Islam in general prohibits the use of alcoholic beverages.

The next group is the third largest community in India and is comprensively labeled "tribes." This, however, is a very heterogeneous

and very scattered grouping, with two major zones of concentration: The Assam-Burma Hills (see survey on Southeast Asia) and the jungles of central India. The tribes are in general pagan shifting cultivators. They are economically exploited, and more and more they are being degraded by being included in the lowest strata of Hindu society, which usually means that they have to renounce beef eating and shift to a vegetarian diet. The majority still rely on limited hunting for meat and on collecting of wild roots, leaves, and fruits. Staples are again cereals, usually pounded and boiled into porridges and eaten with various curries and chutneys.

Since most of the aboriginal tribes have been pushed back into more inhospitable areas (hills or jungles or both), the majority have to grow millet, Job's-tears, or tubers rather than their preferred rice. Some of them, especially in the south of India, like the Yanadis, are traditional hunters and gatherers, and since both game and plant life is becoming restricted, the Indian government has tried to settle them and interest them in agriculture. The Yanadis have responded favorably, whereas another tribe, the Toda (strict buffalo herders) have refused to take up potato planting and would rather keep to their diet of milk and milk products plus any grain they can get by barter.

All tribes are notorious for being alcoholics. They illegally distill their liquor, and they smoke extensively, both tobacco and hemp, chew betel nut, and occasionally take opium.

To sum up: The food and eating habits of the Indian subcontinent strongly reflect Hindu influences. The diet is inclined to be conservative, and, despite the fact that it is rather similar in its basic elements, it differs in the number and kinds of taboos that apply to the component castes and groups. These differences reflect the stratified social structure and serve to reinforce it.

Ceylon:

The Island of Ceylon is essentially a detached portion of southern India, which it resembles in land form, climatic regions, natural vegetation, and soils. The dominant ethnic group, the Sinhalese, have retained their Buddhism and have had considerable influence on Buddhists in other lands. There also exists on the island a small minority of aboriginal Australoid people, the Veddas, confined to east-central Ceylon. The island has a dual economy and plural society; the indigenous economy is centered on the cultivation of rice on irrigated land. Rice is the basic foodstuff, but is supplemented by various fruits and vegetables grown on "high" land and locally by grain grown by

shifting cultivation. Fishing is also important, although much more could be done to exploit the rich fishing areas of their sea and lagoons. Fish, meats, and vegetables are most often served as curries with boiled rice. It is interesting to note that Hinduism has also left its mark on the theoretically casteless Buddhist society of the Sinhalese. Fishing is considered a low-class occupation, labor tends to be immobile, and there are many food restrictions. Even the aboriginal Vedda have taboos that can be explained as transfers from Hinduism, such as their rejection of beef, water buffalo, eagle, and leopard.

Bibliography:

1. Desai, A.R. Introduction to Rural Sociology in India. Bombay, Vora, 1954.

2. Elwin, Verrier. The Aboriginals. Oxford Pamphlets on Indian Affairs, No. 14, Bombay, Oxford University Press, Indian Branch, 1943.

3. Gilbert, William H. Jr. Peoples of India. Smithsonian Institution War Background Studies, No. 18, Washington, Smithsonian Institution, 1944.

4. Majumdar, D.N. The Races and Cultures of India. Allahabad, Kitabistan, 1944.

5. Brown, Norman W., ed. India, Pakistan, Ceylon. Ithaca, Cornell University Press, 1951.

6. Spate, O. H. K. India and Pakistan, A General and Regional Geography. London, Methuen; New York; E. P. Dutton, 1954.

East Asia

East Asia, separated from the Indian subcontinent on the south and west by the vast Tibetan complex of mountains and plateaus, from Southeast Asia by the mountainous border region, and from Siberia on the north by the Gobi desert, is the home of almost a third of mankind. The most densely populated areas are the fertile lowland plains of the great rivers and the coastal and mountain lowlands of South China, Korea, and Japan. Except for the Ainu and Lolos, who show certain Caucasoid traits, the people of East Asia are predominantly Mongoloid. Linguistically they belong to three major groups: the Sino-Tibetan (Sinitic), Altaic, and Austro-Asiatic linguistic groups. The largest of these is Sinitic, which spreads over China proper, Tibet, Vietnam, Thailand, Laos, and most of Burma. To the north of this group is an equally large population speaking the Altaic languages, composed of Mongols, Manchus, Koreans, Japanese, and some Siberian peoples who are classified under the Tungusic subbranch of this major linguistic family. Included in the family of Austro-Asiatic languages are the Malays, Indonesians, and the aborigines of Formosa. Exceptions are found in the Ainu and Monguor languages included in our Asian samples, which may have Indo-European elements.

/Reischauer and Fairbank, 1960/

Climatically, East Asia can be characterized as having seasonal shifts in winds and precipitation. The great latitudinal spread, orographic factors, and maritime influences (especially in Japan and in island areas) determine the varied climate. The main area has a characteristic temperate zone climate, with cold winters and hot summers. The areas near the Pacific Ocean receive the bulk of their rainfall in the cooler months. The northwest is generally cold and dry while the south coast is humid and subtropical. The distinctive climate, together with the isolation resulting from the great mountain and desert barriers, has given East Asia an agricultural pattern that is quite different from that of the rest of Asia. Since rice grows best in flooded fields and is well adapted to the hot wet summers of this area, the yield per acre of rice is much larger than that of wheat. Thus, rice and other cereals produced from the 20 percent of East Asia's land that is arable supports a heavier population than in most of Europe or West Asia.

Generalizations about the food habits of East Asia will be more meaningful if the variations within its complex are examined first. The cultural samples included in this food study fall into the following four major groups: (1) Northeast Asia (Korea, Cheju, Rural Japan, and the Ryukyu Islands) (2) the Non-Han People of South China and

the northern part of Southeast Asia (3) the North and West Periphery (the Tibetans and Ainu), and (4) the Formosan aborigines. China is not included in the present sample.

1. NORTHEAST ASIA: Despite the mountainous topography, there is intensive rice farming in Northeast Asia, due to an abundant water supply and an extremely favorable climate for agriculture. However, shortage of rice is common, and the problem is most acute in islands like Cheju and the Ryukyus. The common statement that rice is the staple in the East Asian diet needs re-evaluation and qualification. In most regions and among the bulk of the population, the preferred staple, steamed polished rice, is often (if not always) "stretched" by mixing it with other cereals such as barley or millet, or with legumes or potatoes. In some areas such as Cheju and the Ryukyus, rice is eaten only on special occasions by the vast majority of the population. Only during a few months following the harvest can the people afford rice as a significant proportion of their cereal diet, which represents almost 80 percent of their total caloric intake. Thus, cereals are the staple foods, not rice alone as is commonly assumed. Next to cereal foods, vegetables provide the bulk of the diet. A wide variety of both cultivated and wild vegetables are eaten throughout the year. Vegetable pickles, necessary go-along-with

dishes in both Japan and Korea (but not in the Ryukyus), provide vitamins during the winter months. The popular use of noodles and soybean products, the limited use of meat, poultry, eggs, fish, and seaweed, and the lack of dairy products in the diet seem to be common characteristics of all Northeast Asian peoples.

While the Japanese emphasize raw and colorful dishes and do only a minimum of cooking, Koreans use more spices and have developed more elaborate cooking methods. Tea drinking is a part of Japanese diet as well as a ritual, but Koreans use little tea.

2. NON-HAN PEOPLE: A mixture of culturally diverse people, called simply "barbarians" by the Chinese, have long been settled in the highlands of the southwestern provinces of China and in the northern regions of Southeast Asia. These people live in cultural isolation and have developed numerous cultural variations in the course of their adaptation to the local altitude, climate, and to the neighboring dominant cultural groups. They share a common hostility toward the dominant Han or Tai peoples. The Miao and the Lolo are among those known for their strong sense of independence, for their ability to organize and wage war, and for their adaptibility to the environment. In Thailand, the Miao are the most advanced and prosperous of all hill tribes. The Yao and Miao are the

two most widespread non-Han people in southern China and the northern part of Southeast Asia. The Miao were recognized as an ethnically distinct people early in the pre-Han period, when they appeared on the lower middle Yangtze, while the Yao are thought to be the original inhabitants of the South China area.

In spite of numerous cultural variations, they show a remarkable homogeneity in their linguistic patterns, in which many similarities are found between the two groups. Although tentatively classified under the Sino-Tibetan linguistic family by LeBar et al. (1964), there is no authoritative study to relate the Miao-Yao to any known linguistic groups. As to their food patterns, they all share to some extent certain aspects of locally dominant cultural traits. They may be classified under at least three subheadings: A. the Miao; B. the Yao; and C. the Lolo, Lisu, and Monguor.

A. The Miao, further subdivided into the Red, Black, Blue, White, Flowery, and other groups, were estimated at about 2, 700, 000 people in 1953. They are found in Kweichow and its neighboring provinces and in North Vietnam, Laos, and northern Thailand. Some groups eat maize porridge while others have glutinous rice as their major staple. However, both maize and glutinous rice seem to be used by all groups either as a primary or as a subprimary foodstuff. Sour dishes and pickled

vegetables are common, and red pepper is the most important condiment. The use of animal blood for food, the scarcity of meat, and the popularity of betel nut chewing seem to be common denominators.

B. The Yao, less numerous than the Miao, are estimated at about 800,000, of which 660,000 live in mainland China. They are dispersed throughout Hunan province, Hainan, Indochina, and northern Thailand. Some cultivate irrigated rice, while others engage in slash-and-burn techniques of shifting cultivation suitable to their environment. There are local variations among the Yao, particularly in regard to social organization, as reflected in residence patterns and family organization. The Kwangtung Yao and the eastern Kwangshi Yao provide examples of differing social organization.

Nonglutinous rice is the major staple, supplemented by maize and tubers. Unlike some Miao groups, neither maize nor tubers are primaries, but are eaten only as supplementary foods. Hot peppers and sour foods are also popular among the Yao. Meat is eaten only on special occasions. Widespread consumption of rice wine and some use of opium are recorded, but there is no account of betel chewing. The so-called "Hainan Miao" are considered by some authorities to be Yao from a linguistic point of view, and their food habits support this hypothesis.

The Miao of Hainan, unlike other Miao people, eat rice gruel and do not like maize.

C. The third subgroup in terms of their food patterns are the Lolo and Lisu, together with the Lahu and Akha of the Tibeto-Burman linguistic group. The Monguor diet also seems to fall into this pattern. This subgroup is found throughout the mountainous areas of Yunan, extending north into southwestern Szechwan, east into western Kweichow, and south into northern Indochina. The Lisu claim their original homeland to be the north, in the direction of Tibet, and their food patterns reflect some Tibetan influence. Unlike other non-Han people, the Lolo have Caucasoid physical features and are said to have a connection with Iranian or Indo-Afghan people. Lolo society is divided into two endogamous castes: an aristocratic landowning elite called the Black Bones, or Nos u, and their serfs, the White Bones or White Lolo. Many subgroups are distinguished and known by the color of their dress, their occupation or location, or by the name of a particular ruling family. The Black Lisu and the Lolo of China traditionally are warriors, while the Lolo of Tonkin are peaceful. The Chinese Communists call them "I" or "Yi," and in 1951 designated their major area of concentration, the Liangshan, as an Autonomous Chou. The Communists have been trying

to penetrate the area by exploiting the dissatifactions of the White Lolo serfs and slaves. Prior to World War I, the area of the Upper Salween was largely outside effective Chinese administrative control. The Chinese controlled the importation of salt as the sole means of control over these hill tribes, who had no salt and valued it highly for both men and horses. The horse is vital to Lolo warriors.

The diet of the Lolo of China is characterized by buckwheat cakes and porridge, supplemented by vegetable soup which may contain chicken. The Lolo of the Southeast Asian mainland eat rice and a kind of curry with vegetables. Meat is rare and eaten only on special occasions. The Lisu diet seems to be similar to that of Lolo.

The Monguor, known as Tujen or aborigines to the Chinese, comprise another non-Han group of people who share similar food habits with the Lolo. They live on the border of Kansu and Chinghai provinces in the westernmost part of China. Like Tibetans, they prefer tea and barley (rather than buckwheat) porridge as staples, supplemented by some vegetables. Meat, together with milk products, was once the staple food but has now become a luxury.

3. NORTH AND WEST PERIPHERY: Among the predominantly cereal-eating people of East Asia the Tibetans and Ainu are the only people who

consume a considerable quantity of meat (or fish), milk, and milk products, with little or no vegetables. Although geographically separated -- Tibet being in the northwesternmost part of East Asia and the Ainu being in the north of Japan in the eastern corner of this area -- the two peoples have a common ecological situation, including extreme cold. Despite the Tibetans' religious prohibition against eating meat and in spite of the Japanese effort to assimilate the Ainu to cereal culture, a high proportion of protein intake in the form of meat and dairy products can still be seen in both areas. Hot liquids, in the form of tea or soup, which accompany the cereal porridge (for the Tibetans barley, and for the Ainu, millet) are also characteristic of the food pattern. Due to the cooler temperatures in this region, it is possible to eat raw meat or fish and to preserve the maximum protein and vitamin value of these foodstuffs without danger of spoilage. When available, wild plants are preferred to cultivated vegetables as food.

4. FORMOSAN ABORIGINES: The mountain tribes of Formosa, closely allied to the Indonesians in ethnic type, language, and culture, dwell in three different habitats -- temperate, subtemperate, and subtropical zones -- with varying temperatures due to latitude and altitude. They subsist on Italian millet, rice, sweet potatoes, and taro,

supplemented by meat and fish. The tribes who dwell in the temperate or subtemperate zone depend primarily on cereals and secondarily on tuber or root crops; whereas the reverse is true among those in the subtropical or tropical zone. Millet gruel or millet and other cereals mixed is their staple dish. Pigs are found among all tribes, and chickens and other domestic fowl are lacking only among the Yami of Botel Tobago Island. The Yami are linguistically and culturally more akin to the Batanese of the northernmost Philippine Island than to the rest of the Formosan Aborigines. Unlike the rest of this group, the Yami do not smoke or drink, and they domesticate wild fowls. Salt is very scarce among all the Formosan Aborigines.

To sum up, the diet of East Asia in general is a high-carbohydrate, moderate-protein, and low-fat diet. The use of rice in combination with other cereals, plus a fair amount of legumes and vegetables, a limited amount of meat, poultry, fish, and eggs, a lack of dairy products, and the limited use of vegetable oils for cooking, seem to characterize the East Asian diet.

Unlike India or the Middle Eastern societies, there are few food taboos or class or caste differences in relation to food consumption. Geographic, economic, and seasonal factors seem to be the major variables of the East Asian food pattern.

Although many new foods, such as soft drinks, sweets, coffee, canned milk, etc. have been introduced to East Asia, especially during and since World War II, the basic diet seems to be unaffected. Unlike Western societies, dessert is not a part of the regular meal, though drinking of cereal wine and the smoking of tobacco seems to be enjoyed by most of the people in East Asia, especially men and older people.

BIBLIOGRAPHICAL COMMENTS:

1. Northeast Asia - there has been a general disinterest in food as a research topic, and relatively little has been written about food habits by East Asian scholars. As a whole, quantitative data is missing, and the subject of nutrition has received attention from East Asian and Western scholars only in recent years, and in very superficial ways. Data on Cheju Island and rural Japan are based exclusively on the special food study questionnaire survey prepared for this study. There is no single written work on the foods (nor any ethnography) of Cheju.

2. Non-Han Peoples - despite the interest in non-Han people by Japanese, Chinese, and some French scholars, the ethnographic data are very inadequate. Considerable research was necessary even to delineate the cultural unit, to say nothing of the problem posed by the inadequacy of the information on the food habits of the non-Han people. However, field study reports like those of Bernatzik (1947), Yang (1961),

De Beauclair (1960), Fortune (1939), and Wang (1936) shed some light on this seemingly impossible area of study. Ethnic Groups of Mainland Southeast Asia, prepared by LeBar et al. (1964) helped the present study greatly. For bibliographical reference see: Takemura, Takuji, "Contribution of Chinese Ethnology to the Study of Non-Han Tribes in South and West China," Shakai Jinruigaku (Social Anthropology), Vol. 1: 62-74; Vol. 2: 65-75; and Vol. 3: 54-61.

3. North and West Periphery - literature on Tibet and Ainu is scarce, and information is often contradictory. Although English and French sources were consulted, the bulk of the data, especially on the Ainu, came from Japanese sources. The Ainu dictionary was invaluable for this study. For bibliographical information see: Gusinde, Martin and Chiye Sano, An Annotated Bibliography of Ainu Studies by Japanese Scholars, Nagoya, Nanzan University, 1962.

4. Formosan Aborigines - there is some literature in Western languages and a considerable amount of Chinese and Japanese language sources on these people. Many outstanding scholars, most of whom were formerly at the Taihaoku Imperial University in Formosa, have contributed. Segawa, K. (1954) is the best single source in Japanese on the food habits of the Formosan aborigines. On the whole, the Japanese colonial administration reports proved to be most valuable.

General Information on East Asia:

Reischauer, Edwin O. and John K. Fairbank. East Asia: The Great Tradition. Boston, Houghton Mifflin, 1958.

Cressy, George B. Asia's Lands and Peoples. New York, McGraw-Hill, 1951.

Wickizer, V. D. and M. K. Bennet. The Rice Economy of Monsoon Asia. Stanford University, Food Research Institute, 1941.

Toa Minzoku Meii (Japanese Dictionary of Ethnic Groups in East Asia), Tokyo, Teigoku gakushi In, 1943.

Southeast Asia

Southeast Asia is here defined to include Upper Burma on the west, most of the former French Indo-China, and Malaya.

Historically, Southeast Asia has been a zone of convergence for Indian and Chinese cultures and a bridge between the Euopean West and East Asia. The pressure of long-continuing Chinese expansion has caused the migration of many East Asians southward and brought about an enormous variety of ethnic, linguistic, and religious differences.

In additions to sizable minorities who reside in the highlands of each country (such as the Karens, Shans, and Talaings in Burma; the Karens, Lao-Tai, and Cambodians in northern Thailand and the Malays in the southern part; and the Thai, Chams, and Mois in Indochina) a significant minority group present in most of these countries is the relatively unassimilated Chinese who migrated to these regions within the last century and are engaged in various commercial activities. In Malaya, the Chinese account for about one third of the population. In this predominantly Mongoloid area, the Semang, and Sakai of the Malay Peninsula, and the Andaman Islanders are Negritoes.

Linguistically, the people of Southeast Asia belong to the Sinitic, the Austro-Asiatic, and the Mon-Khmer families. Differences between each ethnic group and the local and regional dialects make the linguistic map of this area a complex one, and religious diversity adds further to this heterogeneous scene. Burma, Thailand, and Cambodia are predominantly Hinayana or Theravada Buddhist and Vietnam is eclectically Confucian with a large Christian minority. The underlying dominant religious structure, however, seems to be a deep rooted layer of animism. In general, the cultural impact of the Hindu and Moslem religion is greater on the upper class or ruling class than on the general population. The Chinese cultural force which filtered through all of Southeast Asia seems to be greater than has generally been believed.

Climatically, Southeast Asia can be characterized by its wet summer and dry winters. High temperatures, which vary little throughout the year, and abundant rainfall (which varies radically from season to season and from place to place) make most of Southeast Asia, except some highland regions, a year-round growing area. About 60 per cent of the land is still in forest and woodland in an area running north-south across the continental countries to the Malay Penninsula, but there are also some agricultural regions: the Irrawaddy central dry zone and

delta, the lower Chao Phya basin, the Cambodian flats and Cochin-China delta of Tonkin; and the lower courses of innumerable lesser streams.

The people of Southeast Asia range from migrant food gatherers and hunters in the jungles to subsistence farmers in the plains. About three-fourths of the total working population is engaged in agriculture, fishing, or in elementary forest exploitation. Only 8.5 per cent of the total area is under cultivation, leaving a vast agricultural frontier yet to be cultivated. About 60 per cent of the cultivated area is devoted to rice, with 12 per cent in maize and 4.3 per cent in root crops such as manioc, sweet potatoes, and yams. In spite of their nonintensive cultivation of the land, the people of Southeast Asia live in an area of major food surplus, and are able to export food due to the relatively low density of population.

A generalization about their food habits can be made in the following three different patterns corresponding roughly to the levels of agricultural development: (1) Hunting and gathering people of the Andaman Islands and the aborigines of Malaya (2) indigenous mountain people who are engaged in shifting agriculture, and (3) sedentary rice

cultivators. The last group may be again subdivided according to their staple food into (a) glutinous rice eaters and (b) nonglutinous rice eaters. Among the nonglutinous rice eaters there seem to be two patterns of diet, one based on those who received Indian influence and consume curry dishes in quantity and the other one those in the southeastern corner of the continent, where curry is rare as a condiment.

1. HUNTING AND GATHERING PEOPLE: Among people in Southeast Asia who obtain most of their food by collecting edible wild plants and by hunting and fishing are the Negrito Semang of the Malay Peninsula and the Onge and Andamans of the Andaman Islands. While the Andamans and Onge utilize meat and fish, the Semang are gatherers of wild plants and are largely vegetarians.

The Andamans and Onge eat wild pigs and marine turtles as their staple foods. Insects, some wild yams, and some wild roots supplement their diets. Salt is very scarce and is considered undesirable.

The Semang and Semai of Malay are gatherers who subsist primarily on wild plants, especially roots and tubers. The Semang have intimate knowledge of edible plants and have developed elaborate techniques of food preservation and of processing poisonous substances for food.

2. SHIFTING CULTIVATORS: On the higher slopes and ridges away from the damp valleys and in the relatively isolated communities along the borders of India, Pakistan, and Burma, and in other mountainous areas of Southeast Asia, people are engaged in shifting cultivation. They cultivate upland rice, millet, and Job's-tears and also engage in some hunting and gathering. Included in these groups are the Garo, Khasi, Purum, Apa Tani, Ao Naga, Sema Naga, and Akha. Although they have adopted cultural elements from their neighbors to some extent, these people are relatively isolated from other people and are referred to as the "aboriginal tribes" of India, Burma, or Malay. In these areas, where soils are poor and the rate of soil erosion high, the people eat cereals as their major staples supplemented by yams. The amount of rice consumed in these regions seems to be negligible in terms of their total food intake. Meat of both wild and domesticated animals is highly valued, but is scarce and consumed only during feasts and special occasions. Curry varies in importance from group to group. Use of insects, sago palms, and wild root crops, is noteworthy. Bananas and coffee are also cultivated by the shifting cultivation method, and are used either as food or cash crops.

3. SEDENTARY AGRICULTURISTS: By far the most important grain for both shifting and sedentary cultivators in Southeast Asia is rice. A

remarkably large number of distinct varieties of cultivated rice may be found, but the two major classes are upland or dry rice and lowland or wet rice. Upland rice is grown by shifting cultivation and can be grown anywhere provided that the rainfall is sufficiently heavy and the temperature and soil suitable. In contrast, the cultivation of wet rice requires a more sophisticated technique and much more water. Glutinous rice and nonglutinous varieties also require different conditions of growth. Thus the staple cereal of the people on the Southeast Asian mainland seems to be either one or the other kind of rice but seldom both.

A. Glutinous rice eaters

Glutinous rice matures in the relatively short period of about four months, making it a safe crop for a district whose rainy season is unreliable and seldom longer than four and a half months. The people of the highlands, where rainfall is scant during the short wet season, eat glutinous rice as their staple. These people are represented in our samples by the Khmu, Lamet, Lao, Muong and Thai-Lue. Maize, chilies, some wild tubers, wild animals, and insects are prominent secondary foods. Among the Lao and Thai-Lue, fish is an important item of diet. Meat is valued by all, but is rather scarce. Tea is a popular drink and some chewing of betel is practiced. In the higher altitudes, some opium is grown, but mainly as a cash crop, with relatively little local consumption.

B. Nonglutinous rice eaters

The major proportion of the population of Southeast Asia subsists on rice of the nonglutinous variety. The Cambodians, Moi, Chams, Tho, and Thai, Burmese, Kachins, Karens, Palaungs, Shans, and Malays all have either sufficient rainfall or direct access to rivers where wet-rice cultivation is possible. Among the nonglutinous rice eaters, two main variations in their diet patterns can be observed: that of the eastern lower part of the continent, where people consume mainly vegetables and fish with their rice, and that of the Burmese and the western half of the lowlanders, including Malayans, who eat curry dishes in quantity. Some vegetables, legumes, maize, and pepper are cultivated in these regions and are consumed either in a curried dish or separately.

In summary, the people of Southeast Asia depend primarily on rice, fish and curry. The proportion of wild roots, tubers, animals, and insects in their total food intake seems to be greater than in Northeast Asia, although the degree to which collecting, hunting, and fishing contributes to the food supply varies with seasons and among different people. Cattle do not fit well into the ecology of Southeast Asia, nor into the religious tradition of the people. Buddhists and Hindus do not eat beef, Moslems will not eat pork, and the native believers in

animism have similar inhibitions about their totemic animals. Buffalo and small oxen which serve primarily as draft animals seem to be the only source of domesticated meat supply. Fish, which supplies calcium, iodine, and salt as well as animal protein, has always been an important item, second only to rice. The emphasis on fresh water fishing rather than on deep sea fishing and the utilization of fish paste and fish sauce are unique features of this region. Their use of chilies, and sesame seeds as condiments is similar to the Chinese and other Northeast Asian people, but the use of curry is an Indian influence. The popularity of noodles among almost all the people in Southeast and Northeast Asia may be attributed to Chinese influence. The use of the fingers in eating is not practiced in Northeast Asia.

Southeast Asia, which was once known as the "rice granary of Asia" and contributed more than two thirds of all the rice in international trade, is currently receiving foods from elsewhere, and in recent years rice has been imported from the United States, Brazil, Egypt, and Australia. The rice surplus of the past disappeared, due to the population increase and the lack of improvement in agricultural methods. These are signs that the eating habits of these people are changing, especially among the urban dwellers and artisans. Slices of bread covered with tomato, chili, or fish sauce are now to be seen in

the hands of children and artisans in Malaya. Potatoes are regularly used in their curries, and corn is used more frequently both as a vegetable and as a snack. Thus, the rice consumption per capita increased during the past century but the opposite trend has been evident during the present century.

BIBLIOGRAPHICAL COMMENTS:

Although there are useful general surveys on the food resources of this area in Japanese and in English, mainly published by colonial offices, ethnographic data which contain the food habits of various ethnic groups of mainland Southeast Asia are scarce indeed. Unlike Northeast Asia, no strong literary tradition has developed to record the past in a form other than mythical. The literature in this region is essentially in French and English, with some Japanese and Chinese. A few detailed ethnographic accounts in English and French, together with the food questionnaire prepared exclusively for this study (such as that on the Garo, Semai, and Thai-Lue) and the Ethnic Groups of Mainland Southeast Asia prepared by LeBar, et al. have been invaluable for these sections of the study. For general information see:

Ginsburg, Norton, ed. The Pattern of Asia, Englewood Cliffs, N. J., Prentice-Hall, Inc., 1958, pp. 290-320, 391-457.

Dobby, E. H. G. Southeast Asia. New York, John Wiley and Sons, Inc., 1950.

Thayer, Philip W., ed. Southeast Asia in the Coming World. Baltimore, Johns Hopkins Press, 1953.

LeBar, Frank M. et al. Ethnic Groups of Mainland Southeast Asia. New Haven, Human Relations Area Files, 1964.

Austral-Oceania

In terms of distances, Austral-Oceania is an extremely large area with, however, a relatively small land mass. In addition to the continent of Australia, there are thousands of islands ranging in size from New Guinea and Borneo, among the largest in the world, down to bits of palm-covered coral, only a few acres in extent. There are three kinds of Pacific (or tropical) islands: the volcanic peak or range, surrounded by a coral reef; the coral mass, which has been thrown up to a height of a few hundred feet and is surrounded by a coral reef; and the atoll, which is simply a low coral reef, circular in shape, enclosing a lagoon instead of a land mass, and with a series of palm-covered islets, often miles long but seldom exceeding 400 yards in width.

These islands and archipelagoes for many years have been the home of different types of seafaring people. These seem to have come into the Pacific from the general direction of Southeast Asia in a series of waves. There is still a great deal of traveling and migration among the different areas, the most recent being a general movement of Chinese peoples into the Indonesian area.

The native ecologies are based generally, with the exception of Australia, on cultivation, but no grain crops are indigenous to the Pacific. The natives have relied mainly on root vegetables such as taro and yams,

and on sago, breadfruit, bananas, and, particularly in the eastern Pacific, on the coconut. In recent years, there has been a definite trend away from taro, the traditional root crop, and to a lesser extent from yams, toward manioc and sweet potatoes. The reason for this trend is that there are more calories gained per acre from manioc and sweet potatoes. Furthermore, manioc in particular needs no storage, since it can be left in the ground until needed. This trend is found all over the area, but it is particularly noticeable in Polynesia. In French Polynesia there is in most areas an almost total rejection of the traditional economy. Commercial fishing, plantation agriculture, and the production of copra has taken over. Most of the food (between 80 and 90 per cent) is imported. Gardens are totally neglected, especially when copra prices are high.

Fishing is an important activity on the smaller islands and in the coastal regions of the larger ones, where fish are frequently exchanged with inland peoples for vegetable produce.

Some general sources on the area include:

1. Keesing, Felix, M. The South Seas in the Modern World. Rev. ed. New York, John Day, 1945.

2. Oliver, Douglas L. The Pacific Islands. Cambridge, Harvard University Press, 1951.

3. Robson, R. W. The Pacific Islands Handbook 1944 (North American Edition). New York, MacMillan, 1945.

4. Taylor, C. R. H. A Pacific Bibliography. Wellington, New Zealand, Polynesian Society, 1951.

For this study, the Pacific has been divided into five major areas: Indo-Pacific, Australia, Melanesia, Micronesia, and Polynesia.

1. Indo-Pacific: This area might be further divided into two major subareas: the Philippines and Indonesia. The map shows the Indo-Pacific area as a vast jumble of archipelagoes and races, jammed into the Far Western Pacific Ocean, providing a set of close-packed stepping stones between Southeast Asia and Australia and a natural division between the Pacific and the Indian Oceans. In physical features and in vegetation, the Indo-Pacific area is similar to the other Pacific areas, but in all circumstances controlled by human culture it is very closely allied to Asia. The primitive cultures here are very heterogeneous. For many centuries the area has been affected by religious, political, and economic influences from India and China and from Europeans (Spanish, Dutch, American, and Portuguese). The cultures range from those of nomadic hunters and gatherers (particularly in Borneo) to highly developed native states ruled by rajahs and sultans. Most of these groups are agricultural, with rice the common crop, although maize, manioc, sweet potatoes, and fish are also highly important.

Some general sources on the area are:

1. Ginsburg, Norton. The Pattern of Asia. Englewood Cliffs, N. J., Prentice-Hall, 1958.

2. Dobby, E. H. G. Southeast Asia, 2d ed. New York, John Wiley, 1951.

3. Kennedy, Raymond. Bibliography of Indonesian Peoples and Cultures, 2d rev. ed. New Haven, HRAF Press, 1962.

4. Eggan, Fred, et al. Selected Bibliography of the Philippines. New Haven, HRAF Press, 1956.

The Indonesian subarea consists mainly of the Republic of Indonesia, along with the portions of Malaysia located on the island of Borneo. It does not include West Irian (western New Guinea). This is the area generally known as the East Indies, that group of islands from the Sulu Sea southward terminating at the eastern end of Weber's Line, west of New Guinea. This region is one of broadly similar ethnic groups dispersed through a sprawling island world, of similar physical environments, and of similar human adjustments to it. The larger land areas are sufficiently penetrated by stretches of sea to make them accessible, so that man has been able to enter the region easily. The response to this, generally in terms of the agricultural possibilities of the land, ranges from the millions found in the relatively restricted area of Java to the forest-covered emptinesses of Borneo. The whole area encompasses some 650,000 square miles and about 82,500,000 people, of whom the greater proportion live on the island of Java. The climate is always warm, generally equable at around 80 degrees Fahrenheit, with differing vegetation covers relative to the rainfall pattern and variations in topography.

The great majority of the people are Malayans in physical type and in language. There are some Negrito populations remaining in small enclaves in the area. Some 80 to 90 per cent of the people are Moslems, which accounts for the absence of pork in the area. There are a large number of Christians, some Hindus on Bali, and a number of pagan tribes. The main crops are dry and wet rice, maize, manioc, soy beans, peanuts, and sweet potatoes. Fishing is important, since fish is the favorite protein food of the inhabitants. Fish are also raised in ponds. As noted above, there has been much Chinese immigration, generally to the cities, in recent years.

The Philippine subarea consists of the Republic of the Philippines (population estimated at around 21,000,000). There are more than 7,000 islands in the area, but most of the land area of 115,600 square miles is concentrated in a few large islands, mainly Luzon and Mindanao. There is a far greater range of environments in this area than in Indonesia, since the area generally runs from north to south, rather than from east to west as in Indonesia. There is, therefore, a difference in seasons, rainfall patterns, and temperatures. The islands are generally rather mountainous, but there are areas of plains in some of the larger islands. Though the vast majority are from closely related cultures, there is a diversity of races and cultures in the islands. There are some Negroid and Veddoid remnant populations, but most of the rest are Malayan

in background. In terms of religion, there are three main groupings: pagans in the interior of the larger islands, Christians in the northern islands, and Moslems in the southern islands. Therefore, there is a variety of concomitant dietary patterns. For social reasons, agriculture aiming at both food and trade has become more commercialized in the Philippines than elsewhere, and maximum return, rather than sustained return, has been the farming objective. Double cropping is very common.

The staple food of the whole area has generally been understood to be rice, but in the central Philippines, maize has taken its place, and root crops are perhaps more significant in caloric terms. Rice is still the preferred food in most places. While they may occupy only a small acreage in any holding, yams, sweet potatoes, and manioc are vital to the local diet and are very widely grown. Large quantities of legumes and savory or peppery vegetables are cultivated. Most of the population is vegetarian by obligation rather than by religious conviction. The chief source of animal protein is fish from inshore fishing, which is consumed exclusively in the local trade. In some areas, the collecting of wild foods is important. Animal husbandry is negligible, except for draft animals, such as zebu and carabao.

2. Australia: This is the largest land mass of any area in the Pacific, about 3,000,000 square miles. However, the environment is so stringent that, aboriginally, probably only about 300,000 people lived in this huge area. The eastern and southeastern coasts are temperate and well-drained, and the same is true for a small area on the southwestern coast. Melville and Bathurst Islands and parts of the northern coastline have a subtropical and tropical environment, but most of the rest of the continent is unproductive bushland or desert.

The best general sources on Australia's native peoples are:

1. Elkin, A. P. The Australian Aborigines. Garden City, New York, Doubleday Anchor Book N37, 1964.
2. Greenway, John. Bibliography of the Australian Aborigines and the Native Peoples of Torres Straits to 1959. Sydney, Angus and Robertson, 1963.

The Australian aborigines constitute a separate racial stock, partaking of Veddoid, Negrito, and Ainoid characteristics. They are a hunting and food-gathering people and display an extraordinary conservatism in their economic technique, primarily due to the nature of the environment. In the past, they did not practice any form of gardening or animal husbandry. This food-gathering life is parasitical; they were absolutely dependent on what nature produced without any assistance on their part. This still holds true for a large part of the interior, although in other areas contact with white Australians has changed the

situation. Not being able to reject the white man and his cattle, they have gradually adapted to both. They "sit down" near a homestead, supply the labor which the settler can get nowhere else, and in return obtain food, tobacco, clothes, and other articles for which they have developed a taste.

There are now about 50, 000 full-blooded aborigines and about 30, 000 mixed-bloods left in Australia, in addition to those who have been submerged in the white population. The full-bloods seem to be increasing in number. A small proportion of the full-bloods are living on government reserves in the north, particularly in Arnhem Land, and have adhered to their traditional, nomadic life. The great majority of them, however, are either living and working on outback stations (settlements) or around towns and mines. In many cases, they are only tribal remnants, usually clinging to their old tribal country or its neighborhood.

3. Melanesia: This area includes New Guinea and the arc of islands to the northeast of Australia extending southward as far as New Caledonia and eastward to Fiji. The Fiji Islands are transitional between Melanesia and Polynesia. The total area is about 370, 000 square miles and the native population is about 1, 700, 000. Melanesia is the major home of the Oceanic Negroids, and it presents a wide variety of cultures. A characteristic feature of these cultures is the development of magical beliefs and practices,

and particularly of sorcery. Though frowned upon by the authorities, such beliefs play an important part in maintaining native standards of law and morality, especially in areas where European influence is not particularly felt. Its peoples are Negroid in appearance (dark skinned and mostly frizzy haired), but there the similarity ends. Widely varying percentages of racial components have resulted in great racial complexity, with "pygmy" peoples living in the interior of the island of New Guinea and tall-statured peoples scattered around the area as a whole. Culturally, too, the area is a bewildering patchwork, with neighboring tribes characteristically geared to totally different beliefs and goals. There is a wide variety of environments, from high, cold, mountain villages in interior New Guinea to hot, coastal swamps. The people are mainly sedentary agriculturalists, their principal cultivated plants being taro, yams, bananas, breadfruit, and coconuts, all Asiatic in origin. Although rice is now imported and eaten by islanders with great relish, most modern attempts to cultivate it in the islands have had scant success, owing mainly to the islanders' impatience with the kind of plodding, sustained labor its production requires. Pig raising is generally a major occupation, and fowl and dogs are also raised.

There is in most places in Melanesia a distinction between "beach" natives and "bush" natives: the former usually have wider contacts,

more advanced technologies, richer diets, and consequently better physiques than the latter. Melanesia in general is one of the great disease areas of the world, with the following taking a great toll in lives and health: malaria, respiratory diseases, dysentery, framboesia, yaws, tropical ulcer, hookworm, filariasis, and beriberi. During and following World War II, there was a tremendous amount of contact with Western culture and a consequent acculturation to many new patterns, particularly in western Melanesia. In this area, pidgin English has become the standard trade language. A fairly recent general source on Melanesia is:

Elkin, A. P. Social Anthropology in Melanesia. A Review of Research. London, Oxford University Press, 1953.

4. Micronesia: The small islands lying to the north of Melanesia constitute the Micronesia area. There was not a great deal of information available before World War II, since Micronesia was mostly part of the Japanese Mandate area. Since the War there has been a good deal of investigation in the area, principally under the Coordinated Investigation of Micronesian Anthropology project.

The hundreds of islands of Micronesia are scattered over an ocean area larger than the United States, but contain altogether only 1, 260

square miles of land area. Aboriginally, they may have contained a population of over 200,000, but in 1938 the population estimate was only 103,000. No later estimate is available. At that time the population was expanding again from a low reached around 1900. Furthest north are the Mariana Islands, the northernmost of which is near Japan. South of these islands lie the several Caroline Island archipelagoes. To the east are the atoll archipelagoes of the Marshall Islands and the Gilbert Islands.

Traditionally, all Micronesians were sufficiently alike to warrant their common name, but there were enough local differences in economy, social organization, religious beliefs, etc. to make it possible to distinguish eight culture areas. Today this no longer holds true because of the intense acculturative influences which occurred during the Japanese and American occupations. Throughout the area most of the people earn their living by farming and fishing. The staple plant foods on the high islands are taro, breadfruit, yams, coconut, and pandanus kernels. On the infertile atolls plant foods are scarce and the inhabitants depend on the sea to survive. In general, Micronesian society is based on fixed relationships between groups and resources, and on status determined by birth, rather than by individual effort. In these

respects, Micronesia is nearer to Polynesia than Melanesia, as it is also in race and language. There is no general source on Micronesia available.

5. Polynesia: The Polynesian islands are those roughly east of longitude 180° and also including New Zealand. The Hawaiian Islands, to the north, though Polynesian, are not included in this survey. Easter Island is the easternmost Polynesian island. There are western Polynesian outliers in the area generally regarded as Melanesia, notably Tikopia and Ontong Java. In spite of widespread similarities in race and language, a great variety of cultures are found in Polynesia, some of which are correlated with environmental differences. For instance, special developments in material culture are particularly marked in New Zealand, where the immigration of the Maori during the fourteenth century from the Society Islands to a land with a very much colder climate and with different natural resources produced considerable change in the technology.

Nearly all the Polynesians were farmers and fishermen, although in recent years in some areas, particularly French Polynesia, the traditional economy has been rejected. Taro, yams, bananas, and coconuts were the principal crops, but in recent years taro and yams

have been supplanted in many islands by manioc and sweet potatoes, as has been noted above. Pigs, dogs, and fowl are kept wherever there is enough food for them, and these animals are used to supplement the vegetable diet. Fishing is a regular vocation, as well as a sport. Most fish, including shellfish of all kinds, are obtained in streams and lagoons and along the reefs, but the islanders also take their boats far offshore to capture tuna and bonito. Except in a few very restrictive environments, they do not have to labor too hard for their livelihood, and in general their technologies and economies have remained simple.

The area as a whole is highly acculturated, since it has been in continuous contact with Western culture since the eighteenth century. As a result, the original Polynesian population has had a large admixture of Caucasian and other racial traits, and there are probably few full-bloods left in the area. There has, therefore, been a definite change in the dietary patterns away from the aboriginal, and most islands are dependent on trade for at least some of their foods.

Two general sources on Polynesia are:

1. Buck, Peter H. An Introduction to Polynesian Anthropology. Bernice P. Bishop Museum Bulletin 187, Hawaii, 1945.

2. Keesing, Felix M. Social Anthropology in Polynesia. London, Oxford University Press, 1953.

South and Middle America

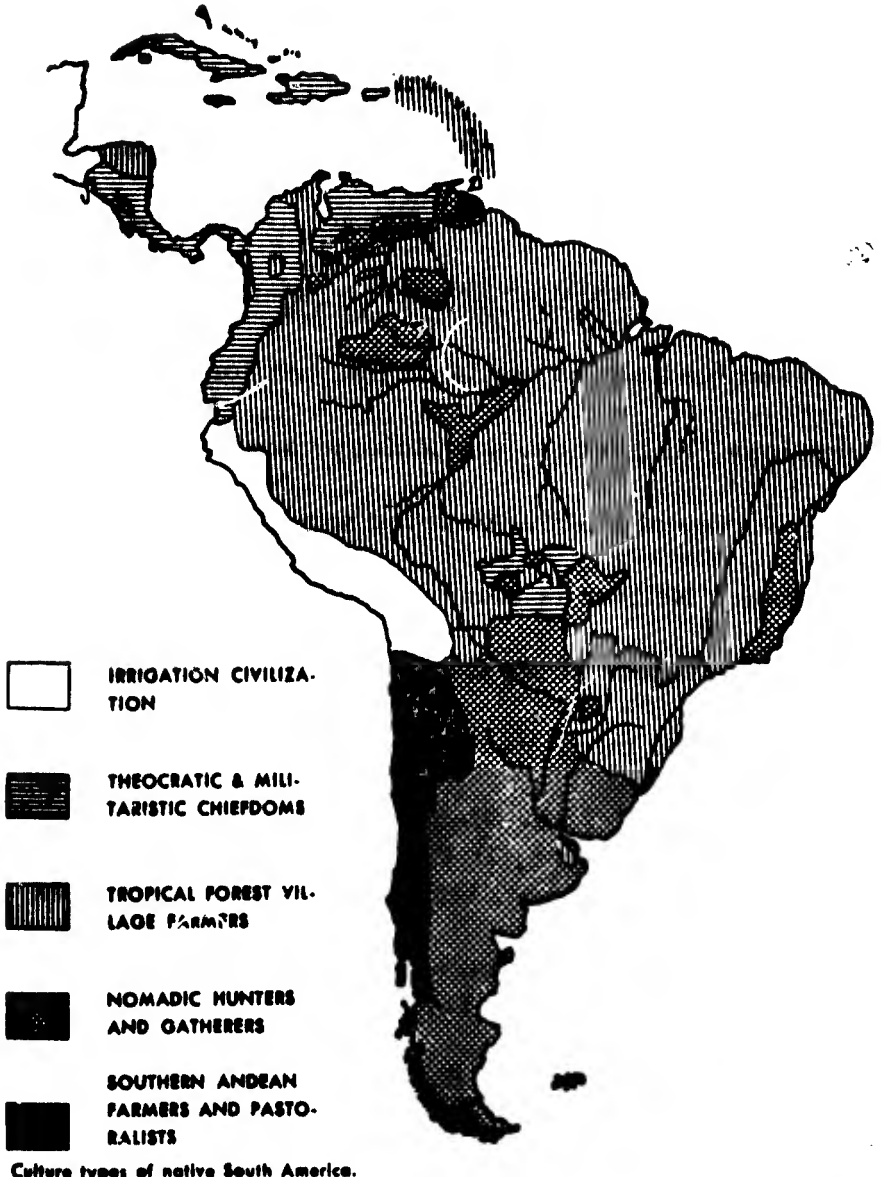
This section of the study surveys a population which is essentially Amerindian in origin, but which in many areas has been mixed with other peoples of European and African origin. Until relatively recent years, this area was not very well understood, and native South America, at least, was ethnographically the least well documented of all the major world areas. This situation was remedied in part by the publication in the years 1946-50 of the Handbook of South American Indians, which assembled all the available information on South American physical anthropology, linguistics, archeology, and ethnology. There is no comparable survey of Middle America now available, although one is in preparation. Neither is there at the moment an adequate general survey of the peoples of the Caribbean area. For general reference, the researcher might use the following volumes:

1. Steward, Julian H., ed. Handbook of South American Indians. 7 vols. Washington, D.C., Bulletin 143 of the Bureau of American Ethnology, Smithsonian Institution, 1946-59.

2. Steward, Julian H. and Louis C. Faron. Native Peoples of South America. New York, McGraw-Hill, 1959.

3. Wolf, Eric R. Sons of the Shaking Earth. Chicago, University of Chicago Press, 1959. (for Mexico and Guatemala)

4. Rubin, Vera, ed. Caribbean Studies: A Symposium. Seattle, University of Washington Press, 1960.



Culture types of native South America.

/Steward and Faron, 1959/

In spite of these excellent general surveys, however, the literature is still very spotty. There are some outstanding individual works which cover the diet and nutrition of specific groups, but the total effect of the vast literature on most of the area is inconsequential. Perhaps the best covered of the groups from the point of view of the literature are the following: the Totonac, the Tarascans and the Yucatec Maya in Mexico, the inhabitants of the Marbial Valley in Haiti, the people of Aritama (a Mestizo community in Colombia), the people of rural Paraguay, and the contemporary Quechua populations of Peru.

As noted above, most of the population of this great area is ethnically mixed. Most people in Middle America and in much of South America have some European ancestry, generally Spanish or Portuguese, in their constitutional makeup. Interior Amazonia, where Europeans are absent, and some parts of the Caribbean, where there are no Amerinds left at all, are probably the only exceptions to this statement. As a concomitant of this racial mixture, there is also a mixture of food habits, dietary patterns, cultural conditioning, and actual foods cultivated. The basic starch-staples of native America — maize, bitter and sweet manioc, and potatoes — are still being grown and used but in many areas, especially where there is a great deal of acculturation going on, food

staples from the rest of the world have been accepted as well. As an extreme example, the staple food of the Toba, a primitive group in the northern Gran Chaco, is now macaroni and spaghetti, which is bought at trading posts in the neighborhood. There are, of course, places in interior Amazonia where only native staples are still in use, but such unmixed economies are very rare.

For this study, the Americas south of the Tropic of Capricorn have been divided into six major areas. These have been set up semi-arbitrarily on the basis of many factors — physical environment, biosphere, composition of the population, crop areas, climatology, adequacy of the literature, etc.

1. Middle America: This area includes the agricultural peoples from the north of Mexico to Panama. Maize remains the staple in the highlands of Mexico and Guatemala, exemplified by the Tarascans, the Aztecs of Milpa Alta, and some of the Highland Maya groups. In the lowlands there is generally a mixed economy based on maize and manioc. The Seri of northern Mexico are an exception as being non-agricultural.

2. The Northern Lowlands: These South American lowlands contain a mixture of tropical forest and savanna grasslands. The native

inhabitants are generally strongly influenced by the cultures of the Andean Highlands and/or those of the tropical forests. The major staples are again maize and manioc, with bananas and plantains forming an important adjunct in many areas. Wild game and fish are also important in some places. The lowlands of Colombia, Venezuela, southern Panama, and the Guianas are included in this division. Parts of interior lowland Colombia, however, are included with the Amazonian area. Cariban and Arawakan languages are spoken here. The Guianas are further distinguished by having a large proportion of East Indian and Negro inhabitants, who have imposed many of their own special food habits on the neighboring natives. In addition, the white inhabitants are mainly derived from northern Europe, unlike most of the rest of "Latin" America.

3. Andean: This region includes those peoples living along the backbone of South America from Colombia to Chile. The area was dominated by Inca culture in pre-Spanish days, and much of the area today is dominated by Quechua(Inca)-speaking groups. The food staples are maize and the Andean (i.e. white) potato. The potato is termed "Andean" here since it comes in many other colors as well as white. The region may be further broken down into three subregions: North

Andean (which includes Colombia and northern Ecuador); Central Andean (which includes southern Ecuador, Peru, Northern Chile, and about half of Bolivia), the homeland of the Quechua and Aymara, the largest native groups in South America; and South Andean, which includes the rest of Chile and western Argentina and is the home of the Araucanians. There is a general dichotomy between the coastal, lowland dwellers and the inhabitants of the mountains. The highland dwellers generally have potatoes as their staple, supplemented by maize and lesser indigenous cereals such as quinoa; while the dwellers along the coastal deserts in the center and south generally depend upon maize and other temperate crops.

4. Southern Lowlands: This area consists of the rest of Argentina, southern Bolivia, southern Paraguay, Uruguay, and southern and eastern Brazil (i.e. the part that is drained southward and eastward toward the Atlantic Ocean, rather than toward the Amazon). This great area is characterized generally by temperate forests and grasslands, seed agriculture, and cattle-raising (among the European inhabitants). The cultures here are more heterogeneous generally than those of the rest of South America, with, aboriginally, nomadic hunters in the south (up through the Gran Chaco), and seed agriculture and hunting being the

characteristic base of the society for much of the rest of the area. The northern part of the area is now characterized generally by "caboclo" culture, a mixture of Indian, Negro, and Portuguese culture elements and racial stocks.

5. Amazonian: This area generally embraces the region drained by the Amazon river and its tributaries. It consists of most of interior Brazil, northern Paraguay, eastern Bolivia, eastern Peru, eastern Ecuador, southeastern Colombia, and a small portion of southern Venezuela. The environment in the main is tropical rain forest with areas of gallery forest and savanna. Root crops, particularly bitter and sweet manioc, yams, and sweet potatoes, form the basis of the diet, as well as many wild fruits, maize, and the products of hunting. There is a good bit of acculturation of the native tribes along the main rivers, but a great part of the area is relatively untouched by Western civilization. There are four main groups of languages spoken by the native tribes of the area: Carib, Arawak, Tupi-Guarani, and Gê. The central and lower Amazon area has been the great rubber-producing region of Brazil, and as such has had much great contact with non-Indian cultures, although this has not altered the basic dietary patterns to any extent.

6. Caribbean: This is the last major area, and this breakdown includes all the islands in the Caribbean Sea, particularly in the eastern Caribbean. Providencia Island is the only representative from the western Caribbean. This is a very mixed area ethnically and in terms of dietary patterns. There are almost no native Amerinds left here, and the population is a mixture of Negro, Indian, and European, with some Indonesian elements in Trinidad. Various "Creole" languages are spoken on many of the islands (i.e. various European languages with some African words on a generalized African grammatical base). Spanish, English, French, and Dutch are the main European languages used. The dietary pattern is similar to that of the South American northern lowlands, based principally on root agriculture in a tropical forest environment. In addition, there is a great deal of acculturation, with food imports coming from North America and Europe. Also, a large number of tourists travel through the area and there is a good deal of travel between the islands and major population centers in Europe and North America.