

JOHN HARVEY KELLOGG (1852-1943)

LECTURES, SPEECHES, NOTES, AND
ARTICLES, CA. 1890-CA. 1943
(UNDATED BY TOPIC)

DIETETICS

Dr. Kellogg:

Here is the formula you wanted.

Let W = weight of man in air.

a = " " "Sinkers" "

b = " " "Sinkers" "Water"

W' = " " "Man & sinkers" "

Sp = Sp. Gr. of man.

Then $W + a$ = weight of both in air

$W + a - W'$ = " " "water displaced by both."

$a - b$ = weight of water displaced by sinkers.

$\therefore W + a - W' - (a - b) =$

$W - W' + b$ = weight of water displaced by man.

$\therefore Sp = \frac{W}{W - W' + b}$ Formula

This is for water at $60^\circ F$ which is taken as standard.

For water at higher temperatures multiply result ^{obtained} by above formula by $1.00028d$ in which d is the number of degrees F above 60°

J. F. Byington. (over)

The last calculation is based
on the fact that water expands
about $\frac{1}{20}$ of its volume on being
heated from $32^{\circ} F$ to $212^{\circ} F$.

I. H. KELLOGG, M. D., Supt.

BATTLE CREEK

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Granose Grits

Moisture	8.29%
Fats	1.33
Albumen	10.27
Soluble Starch (Sugar)	3.57
Starch	72.43
Salts	1.85
Cellulose etc.	2.26
	<hr/>
	100.00
Total nutritive value	89.45

These estimations were made by Dr. Herr under my directions and I think are quite accurate

Respt.
J. A. George.

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Elements - Spleen - Skin - Super Renal	
Glands - Stomach and Intestines -	
Thyroid Gland - Thymus - Tongue.	

FUNCTIONS OF VITAMIN A

1. To increase resistance to infection, especially of the respiratory, urinary, gall bladder and intestinal tracts.
2. To maintain the health of the digestive organs and good appetite.
3. To maintain glandular activity and keep the skin in health.
4. In connection with vitamin E to promote fertility and lactation.
5. To maintain the growth of the young.
6. To prevent gallstones, kidney and bladder stones.
7. To prevent night blindness and day blindness.

SIGNS OF VITAMIN A DEFICIENCY

1. Liability to infection, especially of the eyes, ears, nose, throat, sinuses and teeth.
2. Poor appetite, indigestion, constipation, diarrhea or colitis.
3. Dry skin and skin eruptions.
4. Sterility and deficient milk secretion in mothers.
5. Arrested growth and lack of vigor in children.
6. Night blindness in adults and day blindness in children.

SOURCES OF VITAMIN A

	SHERMAN UNITS PER OUNCE
Alfafa	3600
Apricots	1620
" (Dried)	2100
Asparagus	210
Avocado	150
Banana	82
" (Powder)	300
Bean (Green string)	300
Blackberries	60
Broccoli (Flower)	2100
" (Leaf)	9000
" (Stem)	450
Brussels Sprouts	90
Butter (Dry Feed)	360
" (Pasture)	1050
Cabbage (Green-young)	15
" (Chinese)	600
Cantaloupe	126
Carrot (Young)	900
" (Mature)	1650
Celery Stalks (Green)	450
Chard	5160
Cheese (Cheddar)	750
" (Cream)	1050
" (Parmesan)	375
Cherries (Montmorency)	240
Collards	1350
Corn (Dried, yellow)	180
Cream (20%)	225
Dandelion	7500
Dock (Leaves)	5700
Eggs	300
" (Yolk)	900
Escarole	6000
Kale	9000

Lamb's Quarters		4200
Lettuce	(Green)	1200
"	(Bleached)	37
Milk	(Pasture)	75
"	(Whole, dry feed, dried)	195
"	(Whole, pasture, dried)	600
"	(Skimmed)	.6
Okra		180
Parsley		22500
Peaches	(Yellow, not stored)	300
Peas	(Green)	300
"	(Dried)	375
Prunes		600
"	(Dried)	750
Spinach		7500
Sweet Potatoes	(Yellow)	1500
Tomatoes	(Red, ripe)	450
Watermelon		27

VITAMIN B COMPLAX

SOURCES OF VITAMIN B COMPLEX

	Sherman Units Per Ounce
Artichokes (Jerusalem)	16
Almonds	30
Apples	8
Banana	9
Banana flour	30
Barley	33
String beans	12
Pinto Beans	300
Red Kidney Beans	75
Broccoli flower	20
Broccoli flower and stem	10
Broccoli leaf	20
Buckwheat	66
Cabbage	15
Chinese Cabbage	8
Cantaloupe	6
Carrot	15
Collards	18
Corn, dried	39
Cottonseed flour	141
Dates	12
Eggs	15
Egg yolks	45
Figs	10.5
Figs, dried	10
Flour, patent	1.5
Grapefruit	6
Grapes	6
Hazlenuts	66
Kale	15
Collards	7.5
Leeks	16.5
Lettuce, green	10.5

Sources of Vitamin B Complex - 2**6**

Lettuce, bleached	10.5
Milk, whole	6
Milk, whole, dried	
Oats	37
Onions	3
Orange Juice	18
Parsnips	22
Peanuts	195
Pears	10.5
Peas	15
Peas, dried	42
Pecans	30
Pigeon pea	90
Pineapple	15
Potato, white	12
Potato, sweet	21
Rice, brown	33
Rice polishings	180
Rye	33
Soy Beans	150
Spinach	18
Tomatoes, red, ripe	105
Turnips, white or yellow	9
Turnip greens	18
Watercress	18
Watermelon	5
Wheat	45
Wheat bran	60
Wheat germ	210
Yeast	330
Yeast extract	330

USE OF VITAMIN B.

1. Promotes growth.
2. Stimulates appetite.
3. Aids digestion by stimulating the activity of the stomach and intestines and the flow of digestive juices.
4. Aids absorption of digested foods.
5. Aids assimilation and utilization of carbohydrates.
6. Aids nutrition of nerve tissue.
7. Promotes vital resistance to infection.

EFFECTS OF VITAMIN B DEFICIENCY

1. Slowed growth.
2. Deficient appetite.
3. Impaired digestion.
4. General weakness.
5. So-called nervous prostration.
6. Lowered heart beat.
7. Intestinal infections.
8. Increased intestinal gas.
9. Constipation.
10. Duodenitis.
11. In nursing mothers, milk secretion diminished.
12. Neuritis.
13. In extreme cases, beriberi with complete loss of appetite, emaciation, swelling of the joints, atrophy and paralysis of the muscles and intestinal infections.

CAUSES OF DEFICIENCY OF VITAMIN B.

1. The use of fine flour bread and other bolted cereals.
2. The use of polished rice and other denatured cereals.
3. Fasting and deficient food intake.
4. Excessive use of sweets and other carbohydrates.
5. Violent exertion, mental or physical.
6. Obesity.
7. Advanced age.
8. Fever.
9. Pregnancy and nursing in cases of working women.

VITAMIN B MORE OFTEN DEFICIENT THAN ANY OTHER VITAMIN

It is deficient in fine flour bread, new process corn meal, polished rice and absent in fats and sugar. Many carbohydrate foods not compensated by abundance in other ordinary foods.

VITAMIN C

SOURCES OF VITAMIN C

The best sources are fresh fruits and vegetables and their juices. Fruits differ greatly in vitamin contents, even different varieties of the same fruits.

	Sherman Units Per Ounce
Apples	
Baldwin and Newtons	7.5
Northern Spy, Spitzenberg, Winesap	3
Delicious, Jonathan, McIntosh	1.2
Apricots	2
Apricots, dried	6
Artichokes	5
Asparagus	12
Avocado	5
Banana	5
Banana flour	1.5
String Beans	7.5
Beets	3
Blackberries	2
Blueberries	7
Broccoli	5
Brussels sprouts	16
Cabbage	16
Chinese cabbage	15
Cantaloup	10
Carrot	2
Cauliflower	16
Celery	3
Cherries	6
Fresh cider same as apples	
Collards	30

Sources of Vitamin C - 2

Corn, sweet	5
Cranberries	7
Eggplant	2
Elderberry	1.5
Endive	6
Escarole	3
Gooseberries	15
Grapefruit	15
Grapefruit juice, comm.	20
Grapes	1
Collards	33
Leeks	7.5
Lemon Juice	20
Lettuce	2.4
Milk, whole	.6
Milk, Pasteurized	0
Onions	.5
Orange juice	20
Parsley	45
Peaches	3.6
Pears	2
Peas, green	12
Pineapple	7.5
Plums	3
Potato, white	4.5
Prunes	2.4
Prunes, dried	5
Pumpkin	3
Quince	2.7
Radish	15
Raspberries	10
Artichokes	12
Spinach	24
Strawberries	15
Sweet potato, yellow	4.5
Tangerines	15
Tomatoes, ripe, red	9
Turnips, white or yellow	12
Turnip greens	30
Watercress	30
Watermelon	4

THE USE OF VITAMIN C

1. Stimulates growth.
2. Improves appetite and digestion.
3. Increases resistance to infection.
4. Combats bacterial poisons.
5. Maintains the health of the blood vessels.
6. Promotes normal teeth and bone development.

ILL EFFECTS RESULTING FROM DEFICIENCY OF VITAMIN C

1. Malnutrition.
2. Impaired digestion.
3. Defective teeth.
4. Nervousness.
5. Headache.
6. Low resistance to infection.
7. Retarded growth.
8. Failure of fractures to unite.
9. Very pronounced deficiency causes scurvy, with the following symptoms:
 - (a) Anemia.
 - (b) Discoloration of skin from slight bruises, causing capillary hemorrhages of the skin.
 - (c) Sore and swollen gums and loose teeth.
 - (d) Flabbiness and atrophy of muscles.
 - (e) Swollen joints.
 - (f) Beaded ribs.
 - (g) Fracture of bones without violence.
 - (h) Paralysis of muscles.
 - (i) Nasal and bronchial infections.
 - (j) Colitis and other intestinal disturbances.

VITAMIN D

SOURCES OF VITAMIN D

The chief source of vitamin D is the sunshine. It is produced by contact of the sun with an oily substance, ergosterol, found in the skin. Vitamin D may be produced by irradiation of substances which contain ergosterol.

The best food sources of vitamin D are butter, milk and egg yolks. It is also derived from fish livers, especially cod, halibut and herring oil. It is almost wholly absent from fruits, cereals and vegetables.

To be of service, vitamin D must be combined with 7 times the number of units of vitamin A. It is also necessary that an adequate amount of calcium should be supplied.

The most convenient source of vitamin D is irradiated foodstuffs containing ergosterol. Care must be taken to avoid an overdose.

	Sherman Units Per Ounce
Butter, dry feed	12
Butter, pasture feed	45
Eggs	4.5
Egg yolks	13
Milk, dry feed	.3
Milk, pasture fed	1.2

FUNCTIONS OF VITAMIN D IN THE BODY

1. To regulate mineral metabolism, particularly calcium and phosphorus.
2. To maintain the normal level of calcium in the blood.
3. It is essential to normal muscle action, especially heart action.
4. It maintains normal glandular activity.
5. It maintains normal bone growth.
6. It is essential to normal teeth development.

ILL EFFECTS RESULTING FROM LACK OF VITAMIN D

1. Deficiency of vitamin D produces rickets.
2. Causes tooth decay.
3. Bone deformities, particularly bow-legs and knock-knees.
4. Failure of absorption and assimilation of calcium and phosphorus.
5. Constipation.
6. Pot belly and intestinal gas.
7. Nervousness.
8. Pigeon breast.
9. Misshapen head.
10. General weakness.
11. Nervous restlessness.
12. Tetany or osteomalacia or softening and fragility of the bones.
13. In very pronounced cases, curvature of the spine, beaded ribs.

VITAMIN E

SOURCES OF VITAMIN E

Good sources of vitamin E are greens, such as lettuce, spinach and watercress; legumes, and especially peanuts and soy beans; Whole grain cereals, such as wheat, corn, and brown rice; molasses.

Milk and eggs are good sources of vitamin E, but the richest sources are wheat germ and concentrates prepared from wheat germ oil, cotton seed oil and lettuce.

FUNCTIONS OF VITAMIN E

1. A growth-promoting factor after puberty.
2. Necessary for support of intra-uterine life and development of embryo.
3. Essential to normal lactation.
4. Necessary for the activity of the sex glands in both sexes.
5. Is necessary for muscular development and vigor.

ILL EFFECTS OF VITAMIN E DEFICIENCY

1. Loss of power in the legs.
2. In animals, loss of hair.
3. Degeneration of sex glands.
4. Death of embryo and tendency to miscarriage.
5. In chickens, low hatchability and high mortality of chicks.

In its relation to reproduction, vitamin E is associated with vitamins A, B and C.

VITAMIN G

SOURCES OF VITAMIN G

	Sherman Units Per Ounce
Avocado	16
Apples	6
Banana	16
Banana Flour	30
Beans, string	7.5
Beets	15
Beet tops	75
Broccoli, entire plant	42
Broccoli flower	80
Broccoli leaf	80
Broccoli stem	22
Cabbage, young, green	18
Cabbage, bleached	12
Cabbage, Chinese	7.5
Carrot	15
Cauliflower	18
Cheese, cheddar	60
Cheese, cream	13
Cottonseed flour	51
Cow peas, dry	42
Eggs	33
Egg whites	24
Egg yolks	51
Escarole	28
Figs	15
Figs, dried	12
Grapefruit	12
Kale	60
Lettuce, green	15
Lettuce, bleached	7.5
Milk, whole	18
Milk, skimmed, dried	200
Onions	3
Orange juice	10
Peanuts	60

Sources of Vitamin G - 2

Pears	22
Pigeon pea	60
Pineapple	7.5
Potato	7.5
Prunes, dried	78
Rice polishings	22
Soy bean, dried, yellow	270
Spinach	37
Sweet potato, yellow	10
Banana, red, ripe	3.4
Turnips	60
Watercress	30
Watermelon	4.2
Wheat	24
Wheat germ	90

USES OF VITAMIN G

1. To maintain a normal condition of the stomach and intestines.
2. To prevent disease of the skin and hair.
3. To prevent night blindness in adults and day blindness in infants.
4. Prevents anemia by aiding in the assimilation of iron.
5. Aids the utilization of protein.
6. Promotes growth.
7. Maintains general nutrition.
8. Increases longevity (Sheran).

EFFECTS OF A DEFICIENCY OF VITAMIN G

1. Slowed growth and development.
2. Disease of the skin and hair.
3. Indigestion.
4. Anemia.
5. Weakness with loss of vigor.
6. Diminished flow of milk in nursing mothers.
7. In severe cases cataract, pellagra, emaciation.
8. Ulceration of tongue.
9. Eruptions on the back of the hands, feet and neck.
10. Diarrhea.
11. Mental disturbance.

AVERAGE VITAMIN REQUIREMENT

Vitamin A	-	3000	(Sherman Units)
Vitamin B	-	300	" "
Vitamin C	-	400	(U. S. P.) or 60 (Sherman)
Vitamin D	-	1200	(U. S. P.)
Vitamin G	-	600	(Sherman Units)

Infants and children require one half to three fourths as much as adults.

Expectant and nursing mothers require 50 to 100 per cent more.

Persons suffering from vitaminosis require two to three times the usual amount.

Persons engaged in active labor, either mentally or physically, require twice the usual amount of vitamin B.

Athletes, persons engaged in very hard work, need three times as much as usual of vitamin B complex.

Persons suffering from fever require 25 to 100 per cent more B complex, according to the degree of elevation of temperature.

SPECIFIC EFFECTS OF VITAMIN DEFICIENCIES**1. BONES AND JOINTS**

- A- Degeneration of bone marrow.
- B- Fragility of bone, easily fractured, joints sore and painful, abscess formation in joints.
- C- Defective bone formation, deficiency of lime and phosphorus, deficiency of calcification of bones, large joints, osteo-malacia, osteoporosis.

2. BONE MARROW

- A- Spinal cord degeneration, pernicious anemia, predisposition to bleeding.

3. BRAIN AND NERVES

- A- Degeneration of peripheral nerves, facial neuralgia.
- B- Neuroses, paralysis, spasm.
- C- Neuralgias and parasthesia of limbs, spinal cord disease.
- D- Convulsions and other nervous symptoms which occur in rickets.
- E- Delayed mental development.
- F- Degeneration of nerves and spinal cord as seen in pellagra.

4. EAR

- A- Discharging ear.

5. HAIR

- A- Loss of glossiness, thinning of hair.

6. HEART

- A- Swelling of extremities, edema.

- B- Slow heart, myocarditis, heart failure.
- C- Rapid pulse, headache.

7. KIDNEY

- A- Calculi, nephritis.
- B- Calculi of kidney, bladder calculi, prostatic urinary calculi.

8. LIVER

- A- Liver inefficiency, deficient storage of vitamin A is observed in chronic nephritis
- B- Pernicious anemia.
- C- Liver hypertrophy.

9. LUNGS

- A- Respiratory infections, colds, bronchial pneumonia, chronic bronchitis, lobar pneumonia.
- B- Difficulty of breathing.
- C- Rapid breathing.
- D- Predisposition to lung tuberculosis.

10. MAMMARY GLANDS

- A- Failure of lactation.
- B- Lactation failure.

11. MUSCLE

- A- Diminished muscular power.
- B- Loss of muscle tone, spasms, paralysis, muscle pains and soreness.
- C- Atrophy and edema of muscles.
- D- Soreness, weakness, tetany in infants, low blood calcium.
- E- Weakness, atrophy, paralysis.
- F- Malnutrition and inanition.

12. NOSE AND THROAT

- A- Acute infections, colds, sinusitis, rhinitis, sore throat, tonsillitis.

13. PANCREAS

- A- Diminished lipase and esterase, and formation of insulin.

14. PITUITARY GLAND

- A- Inactivity of sex glands, diminished pituitary secretion, hypertrophy of pituitary gland.
- B- Changes in pituitary gland like those following castration.

15. SEX ELEMENTS

- A- Sterility, degeneration of testes.
- B- Amenorrhea, diminished activity, deficiency of pituitary secretion, infrequent ovulation.
- C- Ovarian pains, tendency to abortion.
- D- Miscarriage, atrophy, sterility, sex rigidity, bladder.
- E- Cystitis, calculi.
- F- Formation of calculi.

16. SPLEEN

- A- Atrophy.

17. SKIN

- A- Skin infections, roughness and dryness, acne.
- B- Skin easily bruised, blue marks easily caused by pinching and massage, pallor, skin lesions.
- C- Skin eruptions, dermatitis.

18. SUPER RENAL GLANDS

- A- Atrophy of glands.
- B- Hypertrophy of glands.
- C- Hypertrophy of glands, secretion, low blood pressure, lessened vitamin C, irregular heart action.

19. STOMACH AND INTESTINES

- A- Indigestion, gastro-duodenitis, gall bladder disease, gastric and duodenal ulcers, diarrhea, colitis.
- B- Loss of appetite, constipation, ulcer of stomach and duodenum, pyrohydrochloria, deficiency of gastric acid, achylia.
- C- Peptic ulcers, degeneration of gastric and intestinal glands, hyperchlorhydria.
- D- Indigestion, diarrhea, colitis, loss of appetite.

20. THYROID GLANDS

- A- Atrophy in males, in females first hypertrophy then atrophy.
- B- Enlargement of glands, exophthalmic goiter.
- C- Lessened secretion of thyroïdin.

21. THYMUS

- A- Atrophy.

22. TONGUE

- A- Inflammation and swelling.
- B- Glossitis, atrophy.
- C- Calcium deficiency.

FOOD MINERALS

Percent of Day's Ration in 1 Ounce and in 100 Grams

	Calcium		Phosphorus		Iron		Copper		Manganese	
	Rat. 1 gm Oz. 100 gms		Rat. 2 gms Oz. 100 gms		Rat. 15 mgs Oz. 100 gms		Rat. 6 mgs Oz. 100 gms		Oz. 100 Gms	
Almonds	7.0	24.5	6.76	23.7	7.8	27.3	60.0	210.0	1.9	6.6
Apples	.24	.8	.18	.6	.70	2.4	6.0	21.0	.02	.07
Apricots, fresh	.39	1.36	.36	1.2	1.2	4.2				
Apricots, dried	.94	3.29	1.8	6.3	15.2	53.2				
Artichoke, globe	1.20	4.20	1.4	4.9	1.9	6.6			.36	1.26
Asparagus	.75	2.62	.59	2.06	1.0	3.5	6.0	21.0	.1	.35
Avocado	1.35	4.72	.66	2.31	12.6	44.1				
Banana	.24	.84	.45	1.5	1.3	4.5	1.0	38.0	.5	1.7
Barley, entire	1.5	5.0	6.00	21.0	9.5	33.2	18.5	64.7	1.6	5.6
Beans, dried	4.7	16.0	7.25	25.2	7.9	27.6	46.5	162.7	1.5	5.2
Beans, lima, dried	2.1	7.0	5.20	18.2	17.2	60.2	40.5	141.7	1.6	5.6
Beans, lima, fresh	.84	2.9	2.00	7.0	4.8	16.8	10.0	35.0	.4	1.4
Beans, string	1.5	5.2	.76	2.6	2.0	7.0	5.0	17.5	.3	1.0

2.	Calcium		Phosphorus		Iron		Copper		Manganese	
	Rat. 1 gm Oz. 100 gms		Rat. 2 gms Oz. 100 gms		Rat. 15 mgs Oz. 100 gms		Rat. 6 mgs Oz. 100 gms		Oz. 100 gms	
Beef, lean	.40	1.40	3.06	10.70	6.0	21.0	6.0	21.0	.016	.056
Beets	.72	2.52	.55	1.92	1.7	2.3	7.0	24.5	.64	2.24
Beet greens	.80	9.60	.60	2.10	6.4	22.4	5.5	18.7	1.30	4.50
Blackberries	.50	1.75	.51	1.78	1.8	6.3				
Blueberries	.70	2.50	.30	1.00	1.8	6.3			4.40	15.60
Bread, white	.90	3.00	1.44	5.10	1.6	5.6	10.0	35.0	.50	1.70
Bread, graham	1.50	5.20	.37	1.30	4.0	14.0	25.0	87.5	2.00	7.00
Broccoli	3.60	12.60	.88	3.00	2.7	9.9	1.0	3.5		
Brussels sprouts	.50	1.75	1.80	6.30	2.3	8.0				
Butter	.48	1.68	.25	.87	.4	1.4			.04	.14
Cabbage	1.35	4.72	.39	1.36	.96	3.0	5.5	19.2	.08	.28
Cantaloupe	.51	1.78	.24	.84	.7	2.4			.04	.14
Carrots	1.38	4.80	.57	2.00	1.24	4.34	5.0	17.5	.12	.42
Cashew nuts	1.40	4.90	7.20	24.20						
Cauliflower	3.60	12.60	.90	3.10	1.90	5.60	8.5	29.7	.18	.62

3.

	Calcium		Phosphorus		Iron		Copper		Manganese	
	Rat. 1 gm Oz. 100 gms	1 gm 100 gms	Rat. 2 gms Oz. 100 gms	2 gms 100 gms	Rat. 15 mgs Oz. 100 gms	15 mgs 100 gms	Rat. 6 mgs Oz. 100 gms	6 mgs 100 gms	Oz. 100 gms	100 gms
Celery	2.00	7.00	.72	2.50	1.2	4.2	5.0	17.5	1.18	.63
Chard	2.60	9.10	.60	2.10	6.2	21.7				
Cheese, hard	28.00	98.00	10.50	36.70	2.6	9.1	2.25	7.9	.10	.35
Cheese, cottage	2.40	8.40	3.94	13.80					.05	.17
Cherries	.57	1.99	.45	1.57	.8	1.4	8.0	28.0		
Chestnuts	.96	3.36	1.41	4.90	1.4	4.9			3.60	12.60
Coconut, dried	1.80	6.30	1.54	5.39					2.50	8.70
Coconut, fresh	.72	2.52	1.11	3.88					1.40	4.90
Collards	6.00	21.00	1.11	3.80	3.3	11.6				
Corn, maize	.87	3.00	4.21	14.70	7.2	25.2	24.0	84.0	.75	2.60
Cornflakes	.45	1.50	1.68	5.80					.05	.17
Cornmeal	.48	1.68	2.28	7.84	1.8	6.3				
Corn, sweet	.18	.63	1.50	5.20	.94	3.29			.15	.52
Corn, dried	.63	2.20	6.00	21.00	5.80	20.3			.60	2.10

L _o	Calcium		Phosphorus		Iron		Copper		Manganese	
	Rat. 1 gm Oz. 100 gms	Rat. 2 gms Oz. 100 gms	Rat. 15 mgs Oz. 100 gms	Rat. 6 mgs Oz. 100 gms	Oz. 100 gms	Rat. 6 mgs Oz. 100 gms	Oz. 100 gms	Oz. 100 gms	Oz. 100 gms	
Cranberries	.36	1.26	.15	.52	.9	3.1	10.0	35.0	.45	1.57
Cream	3.00	10.50	1.15	4.02	.34	1.2				
Currants, dried	2.40	8.40	2.92	10.20	8.00	28.0				
Currants, fresh	.78	2.73	.57	2.00	1.26	4.4				
Dandelion greens	1.90	6.60	.67	2.30	6.00	21.0				
Dates	2.10	7.30	.73	2.60	7.00	24.5	12.0	42.0	3.8	13.30
Eggs	1.80	6.30	3.36	11.70	5.80	20.3	9.3	32.5	.03	.10
Egg white	.39	1.30	.22	.80	.20	.7				
Egg yolk	3.90	13.60	8.88	31.10	17.20	60.2	20.7	72.4	.13	.45
Eggplant	.33	1.15	.34	1.19	1.00	3.5	4.2	14.7	.15	.52
Endive	3.10	11.00	.58	2.00	2.40	8.4			.22	.77
Escarole	.80	2.60	.43	1.50	3.00	10.5				
Figs, dried	4.80	17.00	1.74	6.10	5.70	20.00				
Figs, fresh	1.60	5.60	.54	1.90						
Flour, graham	1.00	3.50	4.59	16.00	7.00	24.5			4.20	14.70

5.	Calcium		Phosphorus		Iron		Copper		Manganese	
	Rat. 1 gm Oz. 100 gms		Rat. 2 gms Oz. 100 gms		Rat. 15 mgs Oz. 100 gms		Rat. 6 mgs Oz. 100 gms		Oz. 100 gms	
Flour, white	.48	1.7	1.60	5.6	2.6	9.1	10.0	35.0	.7	2.4
Flour, rye	.50	1.7	4.33	15.0	3.0	10.5			1.9	6.6
Grapefruit	.63	2.2	.30	1.05	.54	1.89				
Grape juice	.33	1.15	.15	.52						
Grapes	.57	1.99	.52	1.82	1.4	5.0	6.0	21.0		
Hominy	.48	1.68	1.05	3.67	1.8	6.3			11.0	38.0
Kale	5.90	20.00	1.08	3.80	5.0	17.5			.5	1.7
Kohl-rabi	2.30	8.00	.66	2.30	1.2	4.2				
Leeks	1.70	5.90	.27	.94	1.3	4.5			.04	.12
Lemon juice	.70	2.40	.15	.52						
Lentils	3.00	10.50	5.70	20.00	17.2	60.2	33.0	115.0		
Lettuce	.80	2.80	.63	2.20	1.4	5.0	12.5	43.7	.9	3.10
Macaroni	.66	2.31	2.16	7.56	2.4	8.4				
Milk, cow's	3.50	12.20	1.39	4.90	.4	1.4	1.25	4.37	.003	.01
Molasses	7.74	27.09	.45	1.57	14.6	51.1			.42	1.47

6.	Calcium		Phosphorus		Iron		Copper		Manganese	
	Rat. 1 gm Oz. 100 gms	1 gm 100 gms	Rat. 2 gms Oz. 100 gms	2 gms 100 gms	Rat. 15 mgs Oz. 100 gms	15 mgs 100 gms	Rat. 6 mgs Oz. 100 gms	6 mgs 100 gms	Oz. 100 gms	100 gms
Mushrooms	.42	1.47	1.47	5.14	1.46	5.11			.08	.28
Oatmeal	1.90	6.60	6.32	22.10	7.60	26.60			4.50	15.7
Okra	2.10	7.50	.93	3.20	1.26	4.40	6.0	21.0	.62	2.1
Olives	3.60	12.60	.21	.70	5.80	20.30	14.0	19.0	.05	.17
Onions	1.00	3.50	.67	2.30	.90	3.10	6.5	2.7	.12	.42
Orange juice	.67	2.00	.19	.66	.48	1.70	4.0	14.0		
Parsnips	1.80	6.30	1.14	4.00	1.50	5.20				
Peaches	.30	1.00	.31	1.10	.60	2.10			.11	.38
Peaches, dried	1.80	6.30	1.80	6.30	13.00	45.00				
Peanuts	2.00	7.00	5.92	20.70	4.00	14.00				
Pears	.42	1.47	.25	.87	.64	2.24	5.0	17.5	.06	.21
Peas, dried	2.50	8.70	6.00	21.00	11.40	40.0	37.0	9.0	2.70	9.40
Peas, fresh	.80	2.80	1.90	6.60	4.10	14.2				
Pecans	2.60	9.00	5.02	17.50	5.20	18.0			3.50	12.20

7.	Calcium		Phosphorus		Iron		Copper		Manganese	
	Rat. 1 gm Oz. 100 gms		Rat. 2 gms Oz. 100 gms		Rat. 15 mgs Oz. 100 gms		Rat. 6 mgs Oz. 100 gms		Oz. 100 gms	
Pineapple	.24	.84	.25	.87	.74	2.6	8.5	29.7	.3	1.05
Plums	.60	2.10	.40	1.40	1.10	3.8			.07	.24
Potatoes	.36	1.20	.87	3.00	1.80	6.3	6.50	22.7	.14	.49
Prunes	1.70	5.90	1.26	4.41	5.70	20.0	8.00	28.7	.18	.63
Pumpkins	.69	2.40	.69	2.40	1.86	6.5	5.50	19.2	.04	.14
Radishes	.93	3.20	.46	1.60	1.66	5.8	19.00	66.0	.05	.17
Raisins	1.80	6.30	1.98	6.90	6.00	21.0				
Raspberries	1.47	6.10	.78	2.70	1.76	6.1			.51	1.80
Rice, brown	2.52	8.82	4.35	15.20	4.00	14.0	15.00	52.5	1.70	5.90
Rice, white	.33	1.10	1.48	5.20	1.80	6.3	7.50	26.2	1.03	3.60
Soybean	6.90	24.00	19.47	68.00	16.00	56.0				
Soy milk	.86	3.00	2.43	8.50	2.00	7.0				
Spinach	2.31	8.00	.60	2.10	5.10	17.8	3.60	12.6	.70	2.40
Squash, summer	.54	1.90	.24	.84	.70	2.4	3.95	13.8	.14	.50
Squash, winter	.57	2.00	.42	1.47	1.10	3.8				

3.	Calcium		Phosphorus		Iron		Copper		Manganese	
	Rat. 1 gm Oz. 100 gms	1 gm 100 gms	Rat. 2 gms Oz. 100 gms	2 gms 100 gms	Rat 15 gms Oz. 100 gms	15 gms 100 gms	Rat. 6 mgs Oz. 100 gms	6 mgs 100 gms	Oz. 100 gms	100 gms
Strawberries	1.14	4.0	.42	1.47	1.36	4.7				
Sweet potatoes	.60	2.1	.67	2.34	1.54	5.4	1.10	3.5	.44	1.5
Tapioca	.48	1.7	.09	.30	3.20	11.2			.69	2.4
Tomatoes	.30	1.0	.39	1.36	.88	3.0	4.00	14.0	.12	.42
Turnips	1.80	6.3	.70	2.40	1.04	3.6	20.00	70.0	.08	.28
Turnip tops	10.41	38.4	.73	2.50	6.96	24.3	4.38	15.2	1.42	5.00
Walnuts	2.67	9.3	5.37	18.80	4.20	14.7				
Watercress	4.71	16.4	.78	2.70	5.94	20.8	7.50	26.2	.54	1.90
Watermelon	.24	.8	.19	.60	.46	1.6				
Wheat, entire	1.59	5.5	5.61	19.60	10.00	35.0	36.00	126.0	3.20	11.20
Whole grain	1.17	4.1	5.20	18.20	9.00	31.5			2.40	8.40

(For Good Health)

A HINDU HERCULES.

According to the Boston Herald of October 18th, quoting from the Statesman of Calcutta, a certain Mr. Rama Murti Naidu, a native Hindu, whose diet consists of rice, peas, greens, almonds, wheat, butter, cream and honey, is performing most astonishing feats of strength and endurance and is a veritable prodigy of toughness. This Hercules is twenty-nine years old. He allows an elephant weighing four tons to step upon him. He lies down and lets a 12 horse power motor car run over his back and shoulders. A stone weighing a ton and a half was placed upon his chest, another large rock was put upon this stone, and this was broken with a sledge hammer. Is there a flesh-eater of any nationality who would undertake to repeat the performance of this Hindu vegetarian?

Hindu Fasts and Diet during the break of the fast.

Fasts are quite common among the Hindus, and these were first enjoined as a religious observance in order to impress upon the ordinary people who are not capable of understanding the import of such things the advantage of fast in regard to the promotion of general health. Fasts are observed by some people weekly on some particular days of their choice, according to their object but more often on fortnightly days, such as the eleventh day after the Full or New Moon (called Ekadasi), and on the New ^M Moon days (Amavasya). The object of the fast is to give rest to the stomach once a week, or fortnightly, as the case may be, in order that it may recover from the effects of the over-eating in

in

in which people in health generally indulge on other days. Another idea of the fast is that diseased persons generally have aggravations of their complaints on the eleventh day after the Full or New Moon, and also on the Full and New Moon days, and that it is, therefore, desirable that they should reduce their normal fare of diet in order to help their system to adjust itself to the physical or mental disturbances on those days. Even on those days of fast, they are required to eat only once and to restrict themselves to a diet of milk and fruits. But more often people who do not understand the implications of a fast, though they do not leave their usual articles of food on the days of the fast, eat a number of other things and in larger quantities, which generally upset their stomachs, and thus they do not derive the advantages

of a fast. Some people who observe the fast have only one meal and go without ^{any} food for the rest of the day, while others take no food whatever and are satisfied with a few sips of water during the whole day.

Special articles of food have been prescribed for the breakfast on the ~~day~~ Dwadasi day, i.e., the day after the fast, on the Ekadasi or the 11th day after the ^f Full or ⁿ New Moon, according to the Hindu system of Dietetics, with special reference to the condition of the body after a fast, and with a view to stimulate the action of the ^d Digestive organs and help them to eliminate all waste products from the body in a natural way.

The same principles apply generally

generally to the articles or food to be taken on days after a fast. The main items which should form part of the breakfast in some form or other are the following:-

- (1) Leaves of 'Agati ^g grandiflora'
(Sanskrit - Agastya)
- (2) ~~The~~ Fresh or ^d Dried fruits of 'Embllica *Officinalis*'
(Sanskrit - Amalaka, English - Emblic *Myrobalan*, German - Gebrauchlicher Amalabaum, French - Phyllanthus Emblic).
- (3) The ^d Dried fruit of 'Solanum *Ferox*'
(Tamil - Sundaisai)

Of the above, the leaves of (1) are somewhat aperient and serve to stimulate the action of the bowels, (2) the fresh fruit is refrigerant, diuretic and laxative, while

while the dried fruit is astringent. They contain gallic acid, tannic acid, gum, sugar, albumen, cellulose and mineral salts.

(3) The dried fruit is generally prescribed along with other remedies for bilious fevers and is, therefore, intended to help the action of the liver.

In prescribing the above as articles of food on days following a fast, the Ancients of India had the idea that normal health should be promoted generally by suitable articles of diet and that illness may be avoided as far as possible if the instructions in regard to healthful living prescribed by them are rigidly adhered to.

T. S. IYER.

Food plan for child five to seven years of age.
Caloric requirements 1400-1700 calories.

Breakfast.

	Calories.
Orange or baked apple or stewed prunes,	50-100
Well cooked cereal (oatmeal or whole wheat)	50-100
Milk,	150-200
Dry toast or stale bread (whole wheat)	50-100
Butter or Cream,	25-50

10:30

Milk,	125-175
Bread, - or Malted Nuts	50-75
Butter,	25-50

Dinner:

Soft cooked egg,	50-75
Mashed or sieved vegetable, as spinach, peas, string beans, carrots-	5-15
Baked potato or boiled rice,	50-100
Bread	50-100
Butter	50-100
Milk (this may be combined with vegetables in soup)	100-150
Stewed fruit or plain pudding,	100-200

Supper.

Cereal with milk or creamed vegetable on toast, or milk toast, or bread and milk,	150-300
Stewed fruit, custard or junket with or without stale sponge cake or plain cookies,	100-200

Diet for Marilyn Miller,

Age 6.

Breakfast.

		Oz.	Protein	Calories.	Total Cal.
Baked Apple,	1 apple,	4.0	1		100
Oatmeal,	$\frac{1}{2}$ cup,	4.0	8		50
Milk to drink,	$\frac{3}{4}$ cup,	6.4	24		125
Milk for cereal,	$\frac{1}{7}$ cup	1.2	5		25
Toast,	2 slices,	1.0	14		100
Butter,	$\frac{1}{2}$ tbsp.	0.2			50

10:30

Milk,	$\frac{5}{8}$ cup,	5.1	19		100
Graham or whole wheat crackers,	2	.4	5		50

Dinner.

Pea Soup,	$\frac{3}{5}$ cup,	6.0	26		100
Croutons (toasted)	27 croutons	1.4	14		100
Spinach,	$\frac{1}{2}$ cup,	4.2	4		33
Bread,	2 slices,	1.3	14		100
Butter	$\frac{1}{2}$ tbsp.	.2			50
Stewed prunes,	6 small,	2.8	2		100

Supper.

Baked potato,	1 medium,	3.0	11		100
Bread,	2 slices	1.3	14		100
Milk,	$\frac{3}{4}$ cup,	6.4	24		125
Creamy rice pudding,	$\frac{1}{2}$ cup,	4.4	24		200

Total for day, 209 1608

Pythagoras on the Natural Diet.

Pythagoras, who lived--- ⁵⁷⁰⁻⁴⁷⁰ B.C., the father of Greek philosophy, not only opposed the use of flesh food as unnatural and unphilosophical by voice and pen, but established a colony, Krotona, from which meat was excluded. He lived to great age and has exercised during all the ages since a great influence through his philosophical teachings.

The Latin poet, Ovid, in the fifteenth book of his "Metamorphosis" gives a poetic account of the views of the great philosopher on human diet. We quote as follows from Dryden's admirable translation:

ment is admirably presented by Ovid in his account of the teaching of Pythagoras, who was a vegetarian from religious scruples, together with his followers, believing in the doctrine of metempsychosis, or the transmigration of souls. We quote the following passage from Ovid, respecting Pythagoras and his views:—

He first the taste of flesh from tables drove,
 And argued well, if arguments could move :
 O mortals, from your fellows' blood abstain,
 Nor taint your bodies with a food profane,
 While corn and pulse by nature are bestowed,
 And planted orchards bend their willing load ;
 While labored gardens wholesome herbs produce,
 And teeming vines afford their generous juice ;
 Nor tardier fruits of cruder kind are lost,
 But tamed with fire, or mellowed by the frost ;
 * * * * *
 While earth not only can your needs supply,
 But, lavish of her store, provides for luxury ;
 A guiltless feast administers with ease,
 And without blood is prodigal to please.
 Wild beasts their maws with their slain brethren fill ;
 And yet not all, for some refuse to kill ;
 Sheep, goats, and oxen, and the nobler steed,
 On browse, and corn, and flowery meadows feed.
 Bears, tigers, wolves, the lion's angry brood,
 Whom Heaven indued with principles of blood,
 He wisely sundered from the rest, to yell
 In forest, and in lonely caves to dwell ;
 Where stronger beasts oppress the weak by night,
 And all in prey and purple feasts delight.
 Oh, impious use ! to nature's laws opposed,
 Where bowels are in other bowels closed ;
 Where, fattened by their fellows' fat, they thrive ;
 Maintained by murder and by death, they live.
 'Tis then for naught that mother earth provides
 The stores of all she shows, and all she hides,
 If men with fleshy morsels must be fed,
 And chaw with bloody teeth the breathing bread ;
 What else is this but to devour our guests,
 And barb'rously renew Cyclopean feasts ?
 We, by destroying life, our life sustain,
 And gorge the ungodly maw with meats obscene.
 Not so the golden age, who fed on fruit,
 Nor durst with bloody meals their mouths pollute.

Then birds in airy space might safely move,
 And timorous hares on heaths securely rove ;
 Nor needed fish the guileful hooks to fear,
 For all was peaceful ; and that peace sincere.
 Whoever was the wretch (and cursed be he)
 That envied first our food's simplicity,
 The essay of bloody feasts on brutes began,
 And after forged the sword to murder man—
 Had he the sharpened steel alone employed
 On beasts of prey that other beasts destroyed,
 Or man invaded with their fangs and paws,
 This had been justified by nature's laws
 And self-defense : but who did feasts begin
 Of flesh, he stretched necessity to sin.
 To kill man-killers, man has lawful power,
 But not the extended license to devour.

Ill habits gather by unseen degrees ;
 As brooks make rivers, rivers run to seas.
 The sow, with her broad snout, for rooting up
 The intrusted seed, was judged to spoil the crop,
 And intercept the sweating farmer's hope :
 The covetous churl, of unforgiving kind,
 The offender to the bloody priest resigned :
 Her hunger was no plea ; for that she died.
 The goat came next in order to be tried :
 The goat had cropp'd the tendrils of the vine :
 In vengeance laity and clergy join,
 Where one has lost his profit, one his wine.
 Here was at least some shadow of offense ;
 The sheep was sacrificed on no pretense
 But meek and unresisting innocence.
 A patient, useful creature, born to bear
 The warm and woolly fleece that clothed her murderer ;
 And daily to give down the milk she bred,
 A tribute for the grass on which she fed.
 Living, both food and raiment she supplies,
 And is of least advantage when she dies.

How did the toiling ox his death deserve,
 A downright simple drudge, and born to serve ?
 O tyrant ! with what justice canst thou hope
 The promise of the year, a generous crop,
 When thou destroy'st thy laboring steer, who tilled
 And ploughed with pains thy else ungrateful field ?
 From his yet reeking neck to draw the yoke,
 That neck with which the surly clods he broke ;

And to the hatchet yield thy husbandman,
 Who finished autumn, and the spring began.
 Nor this alone ! but Heaven itself to bribe,
 We to the gods our impious acts ascribe :
 First recompense with death their creatures' toil ;
 Then call the blest above to share the spoil :
 The fairest victim must the powers appease,
 (So fatal 'tis sometimes, too much to please !)
 A purple fillet his broad brows adorns,
 With flowery garlands crowned, and gilded horns :
 He hears the murderous prayer the priest prefers,
 But understands not 'tis his doom he hears :
 Beholds the meal betwixt his temples cast
 (The fruit and product of his labors past) ;
 And in the water views perhaps the knife,
 Uplifted to deprive him of his life ;
 Then broken up alive, his entrails sees
 Torn out, for priests to inspect the gods' decrees.

From whence, O mortal man, this gust of blood
 Have you derived, and interdicted food ?
 Be taught by me this dire delight to shun,
 Warned by my precepts, by my practice won :
 And when you eat the well-deserving beast,
 Think on the laborer of your field you feast !

* * * * *

¶ Ill customs by degrees to habits rise ;
 Ill habits soon become exalted vice.
 What more advance can mortals make in sin,
 So near perfection who with blood begin ?
 Deaf to the calf that lies beneath the knife,
 Looks up, and from her butcher begs her life ;
 Deaf to the harmless kid, that ere he dies,
 All methods to procure thy mercy tries,
 And imitates in vain thy children's cries ?
 Where will he stop who feeds with household bread,
 Then eats the poultry which before he fed ?
 Let plough thy steers, that when they lose their breath,
 To nature, not to thee, they may impute their death.
 Let goats for food their loaded udders lend,
 And sheep from winter cold thy sides defend ;
 But neither springs, nor nets, nor snares employ,
 And be no more ingenious to destroy.
 Free as in air let birds on earth remain,
 Nor let insidious glue their wings constrain ;
 Nor opening hounds the trembling stag affright,
 Nor purple feathers intercept his flight ;

Nor hooks concealed in baits for fish prepare,
 Nor lines to heave them twinkling up in air.
 Take not away the life you cannot give ;
 For all things have an equal right to live :
 Kill noxious creatures, where 'tis sin to save ;
 'Tis only just prerogative we have :
 But nourish life with vegetable food,
 And shun the sacrilegious taste of blood. "

In answer to these arguments, those who entertain opposite views urge the following among less important considerations:—

1. Though originally vegetarian in his habits, man has so long been accustomed to the use of animal food that it has come to be a necessity.
2. Those nations that use the most flesh, as for example the English, are the strongest and dominant nations.
3. The use of animal food is necessary to sustain life in the cold regions of the North, both on account of the absence of sufficient vegetable food and on account of the low temperature.
4. Confinement to the use of vegetable food would render man impotent, and thus exterminate the race.
5. Animals were made to be eaten.
6. The doctrine of evolution proves that as man has developed from lower orders to his present condition he has found it necessary to employ a more concentrated diet.

These arguments are met by counter-arguments, as follows:—

1. Long-continued violation of a principle cannot destroy it. The dirt-eaters of the Orinoco River in South America have for ages been addicted to the habit of eating clay, but this in no way alters the fact that clay is not good for them, although they have become so accustomed to its use as to seem to be little inconvenienced by it. If flesh was not the best food for Adam, for the primitive Romans, Grecians, Persians, and Egyptians, it cannot be for modern man, whose organization is essentially the same. Examination of the remains of persons who died many thousands of years ago shows that there has been no radical change in the human organization within the knowledge of man. And again, experience shows that flesh food is not a necessity, since thousands have renounced its use, and, though suffering slight inconvenience at first, have improved under the change.

2. While it is true that the English nation makes large use of animal food, and is at the same time one of the most powerful on the globe.

Porphyry encountered even in his day (third century A.D.) the objection that if animals are not eaten they will over-run us and made the following sensible reply:

"Though we abstain from eating very ^{many} ~~such~~, such as dogs, wild beasts, rats, lizards, and others, there is yet no fear that we should ever suffer from famine in consequence of their excessive multiplication; and again, it is one thing to have to kill, and another to eat, since we have to kill many ferocious animals whom we do not also eat."

Writing to his friend Firmus who had given up the Pythagorean practice, after having been a flesh abstainer, Porphyry said,

Gautier, p. 409 X

Plutarch's Essay on Flesh-Eating

It would be hard to find in literature a more scathing denunciation of the practice of flesh-eating than that of Plutarch, the famous biographer, in his "Essay on Flesh-Eating". Here are a few paragraphs:

Ethics of Diet pp 46-49

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It is not long since "bull baiting" was a common practice in England, and the feeding of geese a la Strassburg for the production of the famous pâté de foie gras is practised on a commercial scale in other places besides Strassburg.

Plutarch preserves a quaint fable by Aesop in which a wolf watches a group of shepherds eating a sheep and says to himself, "If I were doing what you are now about, what an uproar you would make."

The Origin of Flesh-Eating.

Porphyry, the most estimable of the Greek philosophical writers after Plutarch, tells us that according to Syrian historians, the early inhabitants of that part of the world abstained from all flesh even in sacrifice. The first killing and eating of animals was in the act of propitiatory sacrifice, but it was long before the use of flesh became general.

Porphyry also quotes Asklepiades as saying in his "History of Cyprus and Phenicia" that "no living being was sacrificed to heaven, nor was there even any expressed law on the subject, since it was forbidden by the law of nature." By slow degrees the priests became eaters of flesh as a part of their sacrificial ceremonies, and later the practice became general.

The Persian Magi of that time, he tells us "neither eat nor kill any living being." At least this was true of those belonging to the highest order.

A Flesh-Abstaining Roman Emperor.

According to Porphyry, the famous Roman emperor Julian adhered to a "light and sparing diet which was usually of the vegetable kind," as the result of which his body was "always free and active for the various and important business of an author, a pontiff, a magistrate, a general, and a prince." The prodigious labors of this abstemious ruler are thus described:

Ethics p.75 X

The Essenes Were Flesh-Abstainers.

The Essenes were a Jewish sect the origin of which is lost in antiquity. They held many views in common with Christianity, and many of the early Christians seem to have been drawn from this sect. There are those who believe that the Christian movement really originated in this ancient religious order. The Encyclopedia Britannica gives a highly interesting account of this wonderful body of reformers from which we quote:

"The color of their garments was always white. Their daily routine was prescribed for them in the strictest manner. Before the rising of the sun they were to speak of nothing profane, but offered to it certain traditional forms of prayer as if beseeching it to rise. Thereafter they went about their daily tasks, working continuously at whatever trade they knew till the fifth hour, when they assembled, and, girding on a garment of linen, bathed in cold water. They next seated themselves quietly in the dining hall, where the baker set bread in order, and the cook brought each a single dish of one kind of food. Before meat and after it grace was said by a priest. After dinner they resumed work till sunset. In the evening they had supper, at which guests of the order joined them, if there happened to be any such present."

"As the result of the ascetic training of the Essenes, and of their temperate diet, it is said that they lived to a great age, and were superior to pain and fear. During the Roman war they cheerfully underwent the most grievous tortures rather than break any of the principles of their faith. In fact, they had in many respects reached the very highest moral elevation attained by the ancient world; they were just, humane, benevolent, and spiritually-minded; the sick and aged were the objects of a special affectionate regard; and they condemned slavery, not only as an injustice, but as an impious violation of the natural brotherhood of men."

12
According to Clement of Alexandria (220 A.D.), the Essenes were strict abstainers from flesh foods.

The "Homilies" of Clement, according to Howard Williams, represent St. Peter as being a strict flesh-abstainer, living "upon bread and olives only, with the addition rarely of kitchen herbs." This information it is claimed was given by St. Peter himself to Clement of Rome.

We are also assured that St. Matthew "lived upon seeds and hard-shell fruits and other vegetables, without touching flesh" and Eusebius states that St. James "never ate any animal food. According to a statement confirmed by St. Augustine, the brother of the Lord lived upon seeds and vegetables, never tasting flesh or wine."

Dean Stanley points out certain evidence that St. John was an adherent of the Essenian philosophy.

Chrysostom in commending the abstemiousness of the Essenes, or ascetics, declares

Ethics p 78,79,a,b,

Gay's Fables.

The poet Gay (1688-1732), a contemporary of Swift and Pope, satirized the practice of meat-eating in a series of fables in verse, from which we quote a few of the more striking passages.

Pythagoras and the Peasant.

Ethics, p. 116. 117.

14
The Shepherd's Dog and the Wolf.

When the dog upbraided the wolf for destroying the sheep, the
wolf replied

Ethics p 118

The Wild Boar and the Ram.

Ethics 119

15

Linnaeus (1707-1778)

Linnaeus, the greatest naturalist who ever lived, and the founder of the science of botany, gave his views on the subject of man's natural diet in the following brief but lucid statement:

(Ethics p. 165)

"This species of food (fruits and farinacea) is that which is most suited to man, as is proved by the series of quadrupeds, analogy, wild men, apes, the structure of the mouth, of the stomach, and of the hands."

Buffon (1707-1788)

The great naturalist, Buffon, was not an advocate of vegetarianism, and yet he readily admits the validity of the fundamental arguments against the use of flesh. In his great work, "Histoire Naturelle" he says

Ethics pp 166,7

Shelley - The Food Reformer (1792-1822)

The poet Shelley, contemporary and friend of Byron, was a diet reformer. He wrote an Essay against flesh-eating and in several poems satirized the practice of slaying to eat. We quote the following from his great poem,

"The Revolt of Islam"

Ethics pp 229,230

17
Sir Richard Phillip's Reasons for Flesh-Abstaining.

Sir Richard Phillips (1767-1840), and English statesman and philanthropist, a friend of the famous Dr. Priestly, high sheriff of London in 1807, and founder of several popular periodicals, gave the following as his reasons for abstaining from flesh foods:

Ethics 240, 241

18

Sylvester Graham's Diet Reform Movement.

The founder of the modern movement for dietetic reform, Sylvester Graham, was converted to the practice of flesh-abstaining in 1830 by Mr. Metcalfe, a clergyman living in Philadelphia, who came to America with a company of forty-one, from England in 1817, to found a vegetarian colony. Dr. Wm. Alcott was converted to the movement at the same time. Graham soon became a most active propagandist. He wrote much, published a monthly, Graham Journal, in 1838-9, and lectured widely. In 1839 appeared his lectures on "The Science of Human Life," an admirable treatise which is still worthy of study. Graham's most important contribution was his treatise on "Bread and Bread Making," which advocated the use of whole meal bread, and gave rise to the name graham bread now familiar in every language throughout the civilized world.

Graham maintained that the problem of longevity is to be solved by the prolongation of youthfulness. In this he agreed with Hufeland, Fleureus, and other physiologists.

Graham "Lectures" constitute by far the most rational and comprehensive treatise on the science of living that had appeared when it was published. It is still a mine of valuable information. In reply to the argument that the apes readily learn to eat flesh-food, Graham well remarks

The following statement made by Graham nearly eighty years ago still stands undisputed:

Ethics pp 269,270

The Remarkable Case of Caspar Hauser

On May 26, 1828, there was found at the gates of the city of Nuremberg, Germany, a young man about seventeen years of age who had been confined in a dungeon since early childhood. He was clad only in a shirt and had been allowed no food other than coarse whole meal or graham bread and water. This boy was adopted by the eminent Professor Danner, who undertook to educate him. We quote the further account of this most remarkable case, which illustrates in a very striking manner the perverting influence of our civilized mode of life, from Dr. Graham's "Lectures":

Science of Human Life, pp 453-455

Professor Danner, Caspar Hauser's foster father, speaks
as follows of this very remarkable case:

Ethics p 284

22

Gautier on Flesh-Eating.

Gautier, the great French chemist, recognized as one of the world's greatest authorities on the subject of diet, writes as follows in his great work "Diet and Dietetics."

Gautier, pp 413, 417

Liebig on the Advantages of a Non-Flesh Diet.

Liebig, the great German chemist who laid the foundation of agricultural chemistry and opened a new era in the application of chemistry to practical life. While not an advocate of vegetarianism Liebig nevertheless does not hesitate to admit that a non-flesh diet is competent to nourish the human body to perfection and thus presents his views:-

Ethics pp 291,292

Pythagoras on the Natural Diet.

Pythagoras, who lived 570-470 B. C., the father of Greek philosophy, not only opposed the use of flesh food as unnatural and unphilosophical by voice and pen, but established a colony, Krotona, from which meat was excluded. He lived to great age and has exercised during all the ages since a great influence through his philosophical teachings.

The Latin poet, Ovid, in the fifteenth book of his "Metamorphosis" gives a poetic account of the views of the great philosopher on human diet. The quote as follows from Dryden's admirable translation:

He first the taste of flesh from tables drove,
and argued well, if arguments could move:
O mortals, from your fellows' blood abstain,
Nor taint your bodies with a food profane,
While corn and pulse by nature are bestowed,
and planted orchards bend their willing load;
While labored gardens wholesome herbs produce,
and teeming vines afford their generous juices;
Nor tardier fruits of cruder kind are lost,
but tamed with fire, or mellowed by the frost;
.....
While earth not only can your needs supply,
but, lavish of her store, provides for luxury;
A guiltless feast administers with ease,
and without blood is prodigal to please.
Wild beasts their maws with their slain brethren fill;
and yet not all, for some refuse to kill;
sheep, goats, and oxen, and the nobler steed,
On browse, and corn, and flowery meadows feed.
Bears, tigers, wolves, the lion's angry brood,
Whom Heaven indued with principles of blood,
He wisely sundered from the rest, to yell
In forest, and in lonely caves to dwell;
There stronger beasts oppress the weak by night,
and all in prey and purple feasts delight.
Oh, impious use! to nature's laws opposed,
Where bowels are in other bowels closed;
There, fattened by their fellows' fat, they thrive;
Maintained by murder and by death, they live.
'Tis then for naught that mother earth provides
The stores of all she shows, and all she hides,
If men with fleshy morsels must be fed,
and chew with bloody teeth the breathing bread;
What else is this but to devour our guests,
and barb'rously renew Cyclopean feasts?
We, by destroying life, our life sustain,
and gorge the ungodly maw with meats obscene.

Not so the golden age, who fed on fruit,
Nor thirst with bloody meals their mouths pollute.
Then birds in airy space might safely rove,
And timorous hares on heaths securely rove;
Nor needed fish the guileful hooks to fear,
For all was peaceful; and that peace sincere.
Whoever was the wretch (and cursed be he)
That envied first our food's simplicity,
The essay of bloody feasts on brutes began,
And after forged the sword to murder man--
Had he the sharpened steel alone employed
On beasts of prey that other beasts destroyed,
Or man invaded with their fangs and paws,
This had been justified by nature's laws
And self-defense: but who did feasts begin
Of flesh, he stretched necessity to sin.
To kill man-killers, man has lawful power,
But not the extended license to devour.

Ill habits gather by unsoon degrees;
As brooks make rivers, rivers run to seas.
The sow, with her broad snout, for rooting up
The intrusted seed, was judged to spoil the crop
And intercept the sweating farmer's hopes:
The covetous churl, of unforgiving kind,
The offender to the bloody priest resigned:
Her hunger was no plea; for that she died.
The goat came next in order to be tried:
The goat had cropp'd the tendrils of the vine:
In vengeance laity and clergy join,
Where one has lost his profit, one his wine.
Here was at least some shadow of offence;
The sheep was sacrificed on no pretence
But meek and unresisting innocence.
A patient, useful creature, born to bear
The warts and woolly fleeces that clothed her murderer;
And daily to give down the milk she bred,
A tribute for the grass on which she fed.
Living, both food and raiment she supplies,
And is of least advantage when she dies.

How did the killing ox his death deserve,
A downright simple drudge, and born to serve?
O tyrant! with what justice canst thou hope
The promise of the year, a generous crop,
When thou destroy'st thy laboring steer, who tilled
And ploughed with pains thy else ungrateful field?
From his yet reeking neck to draw the yoke,
That neck with which the early clods he broke
And to the hatcher yield thy husbandman,
Who finished autumn, and the spring began.

Nor this alone! but Heaven itself to bribe,
To to the gods our impious acts ascribe:
First recompense with death their creatures' toil;
Then call the blest above to share the spoil;
The fairest victim must the powers appease,
(So fatal 'tis sometimes, too much to please!)

A purple fillet his broad brows adorns,
With flowery garlands crowned, and gilded horns:
He hears the murderous prayer the priest prefers,
But understands not 'tis his doom he hears:
Beholds the meal betwixt his temples cast
(The fruit and product of his labors past);
And in the water views perhaps the knife,
Uplifted to deprive him of his life;
Then broken up alive, his entrails sees
Torn out, for priests to inspect the gods' decrees.

From whence, O mortal man, this gust of blood
Have you derived, and interdicted food?
Be taught by me this dire delight to shun,
Warned by my precepts, by my practice won;
And when you eat the well-deserving beast,
Think on the laborer of your field you feast!

.....

Ill customs by degrees to habits rise;
Ill habits soon become exalted vice.
What more advances can mortals make in sin,
So near perfection who with blood begin?
Deaf to the calf that lies beneath the knife,
Looks up, and from her butcher begs her life;
Deaf to the harmless kid, that ere he dies,
All methods to procure thy mercy tries,
And imitates in vain thy children's cries?
Where will he stop who feeds with household bread,
Then eats the poultry which before he fed?
Let plough thy steers, that when they lose their breath
To nature, not to thee, they may impute their death.
Let goats for food their loaded udders lend,
And sheep from winter cold thy sides defend;
But neither springs, nor nets, nor snares employ,
And be no more ingenious to destroy.
Free as in air let birds on earth remain,
Nor let insidious glue their wings constrain;
Nor opening hounds the trembling stag affright,
Nor purple feathers intercept his flight;
Nor hooks concealed in baits for fish prepare,
Nor lines to heave them twinkling up in air.
Take not away the life you cannot give;
For all things have an equal right to live:
Kill noxious creatures, where 'tis sin to save;
'Tis only just prerogative we have:
But nourish life with vegetable food,
And shun the sacrilegious taste of blood."

Porphyry encountered even in his day (third century A. D.)

the objection that if animals are not eaten they will over-run us and
make the following sensible reply:

"Though we abstain from eating very many, such as dogs, wild beasts, rats, lizards, and others, there is yet no fear that we should ever suffer from famine in consequence of their excessive multiplication; and again, it is one thing to have to kill, and another to eat, since we have to kill many ferocious animals when we do not also eat."

Writing to his friend Firmus who had given up the Pythagorean practice, after having been a flesh abstainer, Porphyry said,

"I cannot believe that your change of diet is due to reasons of health, for you yourself have constantly affirmed that vegetable diet is much more suitable than any other, not only to give perfect health but even a philosophic and balanced judgment, as a long experience had taught you."

Plutarch's Essay on Flesh-Eating.

It would be hard to find in literature a more scathing denunciation of the practice of flesh-eating than that of Plutarch, the famous biographer, in his "Essay on Flesh-Eating." Here are a few paragraphs:

"You ask me upon what grounds Pythagoras abstained from feeding on the flesh of animals. I, for my part, marvel of what sort of feebleness, mind, or reason, that man was possessed who was the first to pollute his mouth with gore, and to allow his lips to touch the flesh of a murdered being; who spread his table with the mangled forms of dead bodies, and claimed as his daily food what were but now beings endowed with movement, with perception, and with voice.

"How could his eyes endure the spectacle of the flayed and dismembered limbs? How could his sense of smell endure the horrid effluvia? How, I ask, was his taste not sickened by contact with festering wounds, with the pollution of corrupted blood and juices? The very hides

began to creep, and the flesh, both roast and raw, groaned on the spits, and the slaughtered oxen were endowed, as it might seem, with human voice.' This is poetic fiction; but the actual feast of ordinary life is, of a truth, a veritable portent--that a human being should hunger after the flesh of oxen actually bellowing before him, and teach upon what parts one should feast, and lay down elaborate rules about joints and roastings and dishes. The first man who set the example of this savagery is the person to arraign; not, assuredly, that great mind which, in a later age, determined to have nothing to do with such horrors.

"For the wretches who first applied to flesh-eating may justly be alleged in excuse their utter resourcelessness and destitution, inasmuch as it was not to indulge in lawless desires, or amidst the superfluities of necessities, for the pleasure of wanton indulgence in unnatural luxuries that they (the primeval peoples) betook themselves to carnivorous habits.

"If they could now assume consciousness and speech they might exclaim, 'O blest and God-loved men who live at this day! What a happy age in the world's history has fallen to your lot, you who plant and reap an inheritance of all good things which grow for you in ungrudging abundance! What rich harvests do you not gather in! What wealth from the plains, what innocent pleasures is it not in your power to reap from the rich vegetation surrounding you on all sides! You may indulge in luxurious food without staining your hands with innocent blood. While as for us wretches, our lot was cast in an age of the world the most savage and frightful conceivable.'

"Reason proves both by our thoughts and our desires that we are (comparatively) new to the reeking feasts () of krocophagy. Yet it is hard, as says Cato, to argue with stomachs since they have no ears; and the inebriating potion of Custom has been drunk, like Circe's, with all its deceptions and witheries. Now that men are saturated and penetrated, as it

were, with love of pleasure, it is not an easy task to attempt to pluck out from their bodies the flesh-baited hook. Well would it be if, as the people of Egypt turning their back to the pure light of day disembowelled their dead and cast away the offal, as the very source and origin of their sins, we, too, in like manner, were to eradicate bloodshed and gluttony from ourselves and purify the remainder of our lives. If the irreproachable diet be impossible to any by reason of inveterate habit, at least let them devour their flesh as driven to it by hunger, not in luxurious wantonness, but with feelings of shame. Slay your victim, but at least do so with feelings of pity and pain, not with callous heedlessness and with torture. And yet that is what is done in a variety of ways.

"In slaughtering swine, for example, they thrust red-hot irons into their living bodies, so that, by sucking up or diffusing the blood, they may render the flesh soft and tender. Some butchers jump upon or kick the udders of pregnant sows, that by mingling the blood and milk and matter of the embryos that have been murdered together in the very pangs of parturition, they may enjoy the pleasure of feeding upon unnaturally and highly inflamed flesh! Again, it is a common practice to stitch up the eyes of cranes and swans, and shut them up in dark places to fatten. In this and other similar ways are manufactured their dainty dishes, with all the varieties of sauces and spices (--Lydian sauces, composed of blood and spices)--from all which it is sufficiently evident that men have indulged their lawless appetites in the pleasures of luxury, not for necessary food, and from no necessity, but only out of the merest wantonness, and gluttony, and display.

It is not long since "bull baiting" was a common practice in England, and the feeding of geese a la Strasbourg for the production of the famous pate de foie gras is practised on a commercial scale in other places besides Strasbourg.

Plutarch preserves a quaint fable by Aesop in which a wolf watches a group of shepherds eating a sheep and says to himself,

"If I were doing what you are now about, what an uproar you would make."

The Origin of Flesh-Eating.

Porphyry, the most estimable of the Greek philosophical writers after Plutarch, tells us that according to Syrian historians, the early inhabitants of that part of the world abstained from all flesh even in sacrifice. The first killing and eating of animals was in the act of propitiatory sacrifice, but it was long before the use of flesh became general.

Porphyry also quotes Asklepiades as saying in his "History of Cyprus and Phoenicia" that "no living being was sacrificed to heaven, nor was there even any expressed law on the subject, since it was forbidden by the law of nature." By slow degrees the priests became eaters of flesh as a part of their sacrificial ceremonies, and later the practice became general.

The Persian Magi of that time, he tells us "neither eat nor kill any living being." At least this was true of those belonging to the highest order.

A. Flesh-Abstaining Roman Emperor.

According to Porphyry, the famous Roman emperor Julian adhered to a "light and sparing diet which usually of the vegetable kind," as the result of which his body was "always free and active for the various and important business of an author, a pontiff, a magistrate, a general, and a prince." The prodigious labors of this abstemious ruler are thus described:

"In one and the same day he gave audience to several ambassadors, and wrote or dictated a great number of letters to his generals, his civil magistrates, his private friends, and the different cities of his dominions. He listened to the memorials which had been received, considered the subject of the petitions, and signified his intentions more rapidly than they could be taken in shorthand by the diligence of his secretaries. He possessed such flexibility of thought, and such firmness of attention, that he could employ his hand to write, his ear to listen, and his voice to dictate, and pursue at once three several trains of ideas without hesitation and without error. While his ministers reposed, the prince flew with agility from one labour to another, and, after a hasty dinner, retired into his library till the public business, which he had appointed for the evening, summoned him to interrupt the prosecution of his studies. The supper of the emperor was still less substantial than the former meal; his sleep was never clouded by the fumes of indigestion.... He was soon awakened by the entrance of fresh secretaries who had slept the preceding day, and his servants were obliged to wait alternately, while their indefatigable master allowed himself scarcely any other refreshment than the change of occupation."

The Essenes Were Flesh-Abstainers.

The Essenes were a Jewish sect the origin of which is lost in antiquity. They held many views in common with Christianity, and many of the early Christians seem to have been drawn from this sect. There are those who believe that the Christian movement really originated in this ancient religious order. The Encyclopedia Britannica gives a highly interesting account of this wonderful body of reformers from which we quote:

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Dean Stanley points out certain evidence that St. John was an adherent of the Essenian philosophy.

Chrysesten in commending the absteriousness of the Essenes or ascetics declares:

"The unnatural eating of flesh-meat is of demoniacal origin, and was introduced by those giants who, from their bastard nature, took no pleasure in pure nourishment, and only lusted after blood. Therefore the eating of flesh is as polluting as the heathen worship of demons, with its sacrifices and its impure feasts; through participation in which, a man becomes a fellow-dietist with demons."

"No streams of blood are among them; no butchering and cutting up of flesh; no dainty cookery; no heaviness of head. Nor are there horrible smells of flesh-meats among them, or disagreeable fumes from the kitchen. No tumult and disturbance and wearisome clamours, but bread and water-- the latter from a pure fountain, the former from honest labour. If, at any time, however, they may wish to feast more sumptuously, the sumptuousness consists in fruits, and their pleasure in these is greater than at royal tables. With this repast (of fruits and vegetables), even angels from Heaven, as they behold it, are delighted and pleased. For if over one sinner who repents they rejoice, over so many just men imitating them what will they not do?"

"We follow the ways of Wolves, the habits of Higers; or rather, we are worse even than they. To them Nature has assigned that they should be thus (carnivorously) fed, while God has honoured us with rational speech and a sense of equity. And yet we are become worse than the wild beasts."

Gay's Fables.

The poet Gay (1688-1732), a contemporary of Swift and Pope,

satirized the practice of meat-eating in a series of fables in verse,
from which we quote a few of the more striking passages.

Pythagoras and the Peasant.

Pythagoras rose at early dawn,
By soaring meditation drawn;
To breathe the fragrance of the day,
Through flow'ry fields he took his way.
In musing contemplation warm,
His steps misled him to a farm:
There, on the ladder's topmost round,
A peasant stood. The hammer's sound
Shook the weak barn. 'Say, friend, what care
Calls for thy honest labour there?'

The clown, with surly voice, replies:
'Vengeance aloud for justice cries.
This kite, by daily rapine fed,
My hens' annoy, my turkeys' dread,
At length his forfeit life hath paid.
See on the wall his wings displayed,
Here nailed, a terror to his kind.
My fowls shall future safety find,
My yard the thriving poultry feed,
And my barn's refuse eat the bread.'

'Friend,' says the Sage, 'the deed is wise--
For public good the murderer dies.
But if these tyrants of the air
Demand a sentence so severe,
Think how the glutton, man, devours;
What bloody feasts regale his hours!
O impudence of Power and Might!
Thus to condemn a hawk or kite,
When thou, perhaps, carnivorous sinner,
Had'st pullets yesterday for dinner.'

'Hold!' cried the clown, with passion heated,
'shall kites and men alike be treated?
When heaven the world with creatures stored,
Man was ordained their sovereign lord.'
'Thus tyrants boast,' the Sage replied,
'those murders spring from power and pride.
Own then this man-like kite is slain
Thy greater luxury to sustain--
For petty rogues submit to fate
That great ones may enjoy their state.'

The Shepherd's Dog and the Wolf.

When the dog upbraided the wolf for destroying the sheep, the
wolf replied,

"If, mindful of the bleating wail,
Thy bosom burn with real zeal,
Hence, and thy tyrant lord beseech--
To him repeat thy moving speech.
A wolf eats sheep but now and then--
Ten thousands are devoured by men!
An open foe may prove a curse,
But a pretended friend is worse?"

The Wild Bear and the Ram.

"Against an elm a Sheep was tied:
The butcher's knife in blood was dyed--
The patient flock, in silent fright,
From far beheld the horrid sight.
A savage Bear, who near them stood,
Thus mocked to scorn the fleecy brood:--
'All cowards should be served like you.
See, see, your murderer is in view:
With purple hands and racking knife,
He strips the skin yet warm with life.
Your quartered sires, your bleeding dams,
The dying bleat of harmless lambs,
Call for revenge. O stupid race!
The heart that wants revenge is base.'
'Ignant,' an ancient Ram replies,
'To bear no terror in our eyes.
Yet think us not of soul so tame,
Which no repeated wrongs inflame--
Insensible of every ill,
Because we want thy tusks to kill--
Know, those who violence pursue
Give to themselves the vengeance due,
For in these massacres they find
The two chief plagues that waste mankind--
Our skin supplies the wangling bar:
It wakes their slumbering sons to war.
And well Revenge may rest contented,
Since drums and parchment were invented.'"

Linnaeus (1707-1778)

Linnaeus, the greatest naturalist who ever lived, and the founder of the science of botany, gave his views on the subject of man's natural diet in the following brief but lucid statement:

"This species of food (fruits and farinacea) is that which is most suited to man, as is proved by the series of quadrupeds, analogy,

wild men, apes, the structure of the mouth, of the stomach, and of the hands."

Buffon (1707-1788)

The great naturalist, Buffon, was not an advocate of vegetarianism, and yet he readily admits the validity of the fundamental arguments against the use of flesh. In his great work, "Histoire Naturelle," he says,

Man alone consumes and engulfs more flesh than all other animals put together. He is, then, the greatest destroyer, and he is so more by abuse than by necessity. Instead of enjoying with moderation the resources offered him, in place of dispensing them with equity, in place of repairing in proportion as he destroys, of renewing in proportion as he annihilates, the rich man makes all his boast and glory in consuming, all his splendour in destroying, in one day, at his table, more material than would be necessary for the support of several families. He abuses equally other animals and his own species, the rest of whom live in famine, languish in misery, and work only to satisfy the immoderate appetite and the still more insatiable vanity of this human being who, destroying others by want, destroys himself by excess.

"And yet Man might, like other animals, live upon vegetables. Flesh is not a better nourishment than grains or bread. What constitutes true nourishment, what contributes to the nutrition, to the development, to the growth, and to the support of the body, is not that brute matter which, to our eyes, composes the texture of flesh or of vegetables, but it is these organic molecules which both contain; since the ox, in feeding on grass, acquires as much flesh as man or an animal who live upon flesh and blood....The essential source is the same; it is the same matter, it is the same organic molecules which nourish the ox, man, and all animals. It results from what we have just said that Man, whose stomach and in-

testines are not of a very great capacity relatively to the volume of his body, could not live simply upon grass. Nevertheless it is proved by facts that he could well live upon bread, vegetables, and the grains of plants, since we know entire nations and classes of men to whom religion forbids to feed upon anything that has life."

Shelley- The Food Reformer (1793-1822)

The poet Shelley, contemporary and friend of Byron, was a diet reformer. He wrote an Essay against flesh-eating and in several poems satirized the practice of slaying to eat. We quote the following from his great poem,

"The Revolt of Islam"

"My brethren, we are free! The fruits are glowing
Beneath the stars, and the night-winds are flowing
O'er the ripe corn; the Birds and Beasts are dreaming--
Never again may blood of bird or beast
Stain with his venomous stream a human feast,
To the pure skies in accusation steaming.
Avenge poisons shall have ceased
To feed disease, and fear, and madness.
The dwellers of the earth and air
Shall throng around our steps in gladness,
Seeking their food or refuge there.
Our toil from Thought all glorious forms shall cul.
To make this earth, our home, more beautiful,
and Science, and her sister Poesy,
Shall clothe in light the fields and cities of the Free.
.....
"Their feast was such as Earth, the general Mother,
Pours upon her fairest bosom, when she smiles
In the embrace of Autumn--to each other
As when some parent fondly reconciles
Her warring children, she their wrath beguiles
With her own sustenance; they, relenting, weep--
Such was this Festival, which, from their Isles,
and continents, and winds, and oceans deep,
All shapes might throng to share, that fly or walk, or creep;
Might share in peace and innocence, for pure,
Of poison none this festival did pollute.
But, piled on high, an overflowing store
Of pomegranates, and citrons--fairest fruit,
Melons, and dates, and figs, and many a root
Sweet and sustaining, and bright grapes, ere yet
accursed fire their mild juice could transmute

into a mortal base; and brown corn wet
In baskets: with pure streams their thirsting lips they wet."

Sir Richard Phillip's Reasons for Flesh-Abstaining.

Sir Richard Phillip (1767-1846), an English statesman and philanthropist, a friend of the famous Dr. Priestly, high sheriff of London in 1807, and founder of several popular periodicals, gave the following as his reasons for abstaining from flesh food:

"1. Because, being mortal himself, and holding his life on the same uncertain and precarious tenure as all other sensitive beings, he does not find himself justified by any supposed superiority or inequality of condition in destroying the enjoyment of existence of any other mortal, except in the necessary defence of his own life.

"2. Because, the desire of life is so paramount, and so affectingly cherished in all sensitive beings, that he cannot reconcile it to his feelings to destroy or become a voluntary party in the destruction of any innocent living being, however such in his power, or apparently insignificant.

"3. Because he feels the same abhorrence from devouring flesh in general that he hears carnivorous men express against eating human flesh, or the flesh of Horses, Dogs, Cats, or other animals which, in some countries, it is not customary for carnivorous men to devour.

"4. Because Nature seems to have made a superabundant provision for the nourishment of (frugivorous) animals in the saccharine matter of Roots and Fruits, in the farinaceous matter of Grain, Seed, and Pulse, and in the oleaginous matter of the Stalks, Leaves, and Pericarps of numerous vegetables.

"5. Because he feels an utter and unconquerable repugnance against receiving into his stomach the flesh or juices of deceased animal organization.

"6. Because the destruction of the mechanical organization of vegetables inflicts no sensible suffering, nor violates any moral feeling, while vegetables serve to sustain his health, strength, and spirits above those of most carnivorous men.

"7. Because during thirty years of rigid abstinence from the flesh and juices of deceased sensitive beings, he finds that he has not suffered a day's serious illness, that his animal strength and vigour have been equal or superior to that of other men, and that his mind has been fully equal to numerous shocks which he has had to encounter from malice, envy, and various acts of turpitude in his fellow-men.

"8. Because, observing that carnivorous propensities among animals are accompanied by a total want of sympathetic feelings and gentle sentiments--as in the Hyæna, the Tiger, the Vulture, the Eagle, the Crocodile, and the Shark--he conceives that the practice of these carnivorous tyrants affords no worthy example for the imitation or justification of rational, reflecting, and conscientious beings.

"9. Because he observes that carnivorous men, untrammelled by reflection or sentiment, even refine on the most cruel practices of the most savage animals (of other species), and apply their resources of mind and art to prolong the miseries of the victims of their appetites--bleeding, skinning, roasting, and boiling animals alive, and torturing them without reservation or remorse, if they thereby add to the variety of the delicacy of their carnivorous gluttony.

"10. Because the natural sentiments and sympathies of human beings in regard to the killing of other animals, are generally so averse from the practice that few men or women could devour the animals whom they might be obliged themselves to kill; and yet they forget, or affect to forget, the living endearments or dying sufferings of the being, while they are wantonly gazing over his remains.

"11. Because the human stomach appears to be naturally so averse from receiving the remains of animals, that few could partake of them: if they were not disguised and flavoured by culinary preparation; yet rational beings ought to feel that the prepared substances are not the less what they truly are, and that no disguise of food, in itself loathsome, ought to delude the unsophisticated perceptions of a considerate mind.

"12. Because the forty-seven millions of acres in England and Wales would maintain in abundance as many human inhabitants, if they lived wholly on grain, fruits, and vegetables; but they sustain only twelve millions (in 1811) scantily, while animal food is made the basis of human subsistence.

"13. Because animals do not present or contain the substance of food in mass, like vegetables; every part of their economy being subservient to their mere existence, and their entire frames being solely composed of blood necessary for life, of bones for strength, of muscles for motion, and of nerves for sensation.

"14. Because the practice of killing and devouring animals can be justified by no moral plea, by no physical benefit, nor by any just allegation of necessity in countries where there is abundance of vegetable food, and where the arts of gardening and husbandry are favoured by social protection, and by the genial character of the soil and climate.

"15. Because wherever the number and hostility of predatory land animals might so tend to prevent the cultivation of vegetable food as to render it necessary to destroy and, perhaps, to eat them, there could in that case exist no necessity for destroying the animated existences of the distinct elements of air and water; and, as in most civilized countries, ^{exist} there no land animals besides those which are properly bred for slaughter or luxury, of course the destruction of mammals and birds in such countries must be ascribed either to unthinking wantonness or to carnivorous gluttony.

"16. Because the stomachs of locomotive beings appear to have been provided for the purpose of conveying about with the moving animal nutritive substances, analogous in effect to the soil in which are fixed the roots of plants and, therefore, nothing ought to be introduced into the stomach for digestion and for absorption by the lacteals, or roots of the animal system, but the natural bases of simple nutrition--as the saccharine, the oleaginous, and the farinaceous matters of the vegetable kingdom.

Sylvester Graham's Diet Reform Movement.

The founder of the modern movement for dietetic reform, Sylvester Graham, was converted to the practice of flesh-abstaining in 1830 by Dr. Hetschke, a clergyman living in Philadelphia, who came to America with a company of forty-one, from England in 1817, to found a vegetarian colony. Dr. Wm. Alcott was converted to the movement at the same time. Graham soon became a most active propagandist. He wrote much, published a monthly, Graham Journal, in 1838-9, and lectured widely. In 1839 appeared his lectures on "The Science of Human Life," an admirable treatise which is still worthy of study. Graham's most important contribution was his ^{and Bread} treatise on "Bread Making", which advocated the use of whole meal bread, and gave rise to the name graham bread now familiar in every language through the civilized world.

Graham maintained that the problem of longevity is to be solved by the prolongation of youthfulness. In this he agreed with Hufeland, Fleureus, and other physiologists.

Graham "Lectures" constituted by far the most rational and comprehensive treatise on the science of living that had appeared when it was published. It is still a mine of valuable information. In reply to the argument that the apes readily learn to eat flesh-food, Graham well remarks,

"But if this proves that animal to be omnivorous, then the Horse, Cow, Sheep, and others are all omnivorous, for everyone of them is easily trained to eat animal food. Horses have frequently been trained to eat animal food, and Sheep have been so accustomed to it as to refuse grass. All carnivorous animals can be trained to a vegetable diet, and brought to subsist upon it, with less inconvenience and deterioration than herbivorous or frugivorous animals can be brought to live on animal food. Comparative anatomy, therefore, proves that Man is naturally a frugivorous animal, formed to subsist upon fruits, seeds, and farinaceous vegetables."

The following statement made by Graham nearly eighty years ago still stands undisputed:

"The peasantry of Norway, Sweden, Denmark, Germany, Turkey, Greece, Italy, Switzerland, France, Spain, England, Scotland, Ireland, a considerable portion of Russia and other parts of Europe subsist mainly on non-flesh foods. The peasantry of modern Greece (like those of the days of Pericles) subsist on coarse brown bread and fruits. The peasantry in many parts of Russia live on very coarse bread, with garlic and other vegetables, and like the same class in Greece, Italy, etc., they are obliged to be extremely frugal even in this kind of food. Yet they are (for the most part) healthy, vigorous, and active. Many of the inhabitants of Germany live mainly on rye and barley, in the form of coarse bread. The potato is the principal food of the Irish peasantry, and few portions of the human family are more healthy, athletic, and active, when uncorrupted by intoxicating substances (and, it may be added, when under favourable political and social conditions). But alcohol, opium, etc. (equally with bad laws) have extended their blighting influence over the greater portion of the world and nowhere do these scourges so cruelly afflict the self-devoted race as in the cottages of the poor, and when, by these evils and neglect of sanitation, etc., diseases are generated, sometimes epidemics, we are told that these things arise from their poor, meagre, low vegetable diet

wherever the various sorts of intoxicating substances are absent, and a decent degree of cleanliness is observed, the vegetable diet is not thus calumniated.

"That portion of the peasantry of England and Scotland who subsist on their barley and oatmeal bread, pottage, potatoes, and other vegetables, with temperate, cleanly habits (and surroundings), are able to endure more fatigue and exposure than any other class of people in the same countries. Three-fourths of the whole human family, in all periods of time (excepting perhaps, in the primitive wholly predatory ages) have subsisted on non-flesh foods, and when their supplies have been abundant, and their habits in other respects correct, they have been well nourished."

The Remarkable Case of Gaspar Hauser

On May 26, 1828, there was found at the gates of the city of Nuremberg, Germany, a young man about seventeen years of age who had been confined in a dungeon since early childhood. He was clad only in a shirt and had been allowed no food other than coarse whole meal or graham bread and water. This boy was adopted by the eminent Professor Bamer, who undertook to educate him. We quote the further account of this most remarkable case, which illustrates in a very striking manner the perverting influence of our civilized mode of life, from Dr. Graham's "Lectures:"

"Being accustomed during the whole confinement to what is ordinarily called total darkness, his eyes acquired the power of perceiving things by the aid of so extremely small a quantity of light, that he was able to see distinctly where ordinary human eyes could see nothing. 'It has been proved, by experiments carefully made,' says his learned biographer, 'that in a perfectly dark night he could distinguish different dark colors, such as blue and green, from each other'. He could walk anywhere as well in the dark as in the light, and was astonished to see

others groping and stumbling along in the dark. When, at the commencement of twilight, a common eye could not yet distinguish more than three or four stars in the sky, he could already discern the different groups of stars, and could distinguish the different single stars of which they were composed, from each other, according to their magnitude and the peculiarities of their colored light.'

'But all this will perhaps be said to be wholly the effect of his having been long accustomed to darkness, and had nothing to do with his diet. We shall see, however, in the sequel, that this conclusion is erroneous. His being long confined to what we call total darkness certainly caused his eyes to acquire the power of seeing by the aid of an exceedingly small quantity of light, and also unfitted them to bear full daylight with comfort; and consequently, when he first left his dark prison, the full light of day was distressing to him, and rather served to dazzle and blind him than to increase the distinctness of his vision: hence, for some time after he was set at liberty, he could see more distinctly and much farther after sunset than at noonday. Now if all this had been exclusively the effect of his having been so long confined in darkness, then as his eye became more and more accustomed to the full light of day, his distinctness and power of vision would gradually have diminished, till it became nothing more than ordinary. But this was not the case. As he became more and more accustomed to the full light of day, his distinctness and power of vision in the night gradually decreased, and at the same time commensurately increased in the day, till he became as remarkable for his visual power by day as he had been by night, and could distinctly see small objects far beyond the reach of ordinary vision; and 'his sight,' (says his learned biographer, 'was as sharp in distinguishing objects near, as it was penetrating in discerning them at a distance. In dissecting plants, he noticed

subtile distinctions and delicate particles which had entirely escaped the observation of others.'

Moreover, if long confinement in darkness had been the sole or even the principal cause of the astonishing visual powers of Gaspar Hauser, it certainly could not account for the fact that he was equally remarkable for the discriminating acuteness and power of his other special senses.

"His hearing," says his biographer, "was scarcely less acute than his sight. When walking in the fields, he once heard, at a distance comparatively great, the footsteps of several persons, and he could distinguish these persons from each other by their walk."

His acute sense of smell was most troublesome and painful to him, exposed as he constantly was to those concentrated and offensive odors that almost everywhere abound in that artificial state of things peculiar to civic life; while it fitted him the more perfectly for that pure and uncontaminated state of nature in which the special senses are the true sentinels of organic life (690), and with the most perfect discrimination and integrity act determinately for the security of the vital interests of the body. By so much the more, therefore, as he was fitted for such a simple and natural state, he was in a condition to be offended and distressed by an artificial and unnatural state of things. The odors of the rose and other fragrant flowers and shrubs, which, in a state of nature, thinly scattered over the earth, and breathing their sweetness to the pure and diluting air, would have been exquisitely delightful to his keenly discriminating sense, when greatly concentrated and densely freighting the atmosphere from the flowergardens of artificial cultivation, were extremely oppressive and even painful to him (692). He was able to scent things at a very great distance. He could distinguish apple, pear, and plum trees from each other, at a considerable distance, by the smell of their leaves.

different coloring materials, pencils, etc., imparted a painful odor to his keen sense. He smelled tobacco when in the blossom in the fields, at the distance of fifty paces; and at more than one hundred paces, when it was hung up in bundles to dry, causing him to have headaches, cold sweat, and fever. The smell of old cheese made him feel unwell and vomit. The smell of strong vinegar, though full a yard from him operated so powerfully upon his nose and eyes as to bring tears into his eyes. When a glass of wine was filled at table, at considerable distance from him, he complained of its disagreeable smell, and of a sensation of heat in his head. The opening of a bottle of champagne was sure to drive him from the table or to make him sick. The odor of flesh was to him the most horrible of all smells. When walking by a graveyard, the smell of the dead bodies, of which others had not the slightest perception, affected him so powerfully as almost immediately to bring on an ague and cause him to shudder. The ague was soon succeeded by a feverish heat, which at length resulted in a violent perspiration, by which his linen was thoroughly wet. He afterwards said he never experienced so great heat, and complained, on his return to the city gate, that his sight had been affected thereby. Similar efforts were once after experienced by him, when he had been for a considerable time walking by the side of a tobacco field.*

* His sense of taste and sense of touch were equally acute and astonishing. Indeed the power of all his senses seemed miraculous. He would instantly detect the nicest qualities, and the slightest difference in qualities of things of taste and of touch, and he could not be deceived in these respects by any devices or means. Nothing was more loathsome to his taste than flesh. Even enveloped in bread, it caused great disgust and distress as soon as he took it into his mouth. With equal discrimination and power would he detect the nicest difference in the tangible properties of things.

"One of the most difficult undertakings was to accustom him to the use of ordinary food; and this could be accomplished only by slow degrees, much trouble, and great caution. The different preparations of farinaceous food most readily agreed with him and became agreeable. At length, he was gradually accustomed to eat flesh, by mixing at first only a few drops of gravy with his gruel, and a few threads of the muscular fibre of the flesh with his bread after the juices had been boiled out, and by gradually increasing the quantity".

Professor Danner, Caspar Hauser's foster father, speaks as follows of this very remarkable case:

"That through the cadaverous diet, also, very great disadvantages are derived to the spiritual and moral nature of man, appears to me to be proved by my experience in the case of my former foster-son, the celebrated Caspar Hauser. This young man, maintained during his close confinement upon bread and water, for a long time after his introduction to the world ate nothing else, and wished for nothing else, as food. While he was accustomed, without ill-effect, to take bread-sops, oatmeal, and plain chocolate for flesh, which had for him an intolerable odour, he had a violent aversion. Living in this way he always looked sufficiently well-nourished, he developed a remarkable intelligence, and exhibited an extraordinarily refined and tender feeling. He was induced at last, but only by the most extraordinary caution and gradually, to take the usual flesh-dishes, by being given at first only a few drops of flesh-soup in his bread-sops, and, when he had grown in some measure accustomed to it, by infusing stronger ingredients, and so on,

"There was now manifested the most disastrous change in his mind and disposition: learning became for him strangely difficult--the nobility of his nature disappeared into the background, and he turned out to be nothing more than a very ordinary individual. They ascribed this, of course,

to every other cause than to his habituation to the flesh-diet. I myself was at that time very remote from the opinion of which I now am. From my present standpoint, however, I certainly cannot doubt that dietetic barbarism is for man of the most essential harm, not alone in a physical, but also in an intellectual and moral, point of view, however much it may, at present, be taken under the patronage of physiologists and physicians-- upon no other ground, apparently, than because they themselves, to a melancholy degree, are devotedly attached to this inhuman diet. For, alas! man is wont to make use of his reason to justify by specious show of reasoning what he likes and delights in upon quite other grounds?

Gautier on Flesh-Eating.

Gautier, the great French chemist, recognized as one of the world's greatest authorities on the subject of diet, writes as follows in his great work "Diet and Dietetics."

"We conclude that absolute vegetarian diet does not answer well to the needs, interest and activity of our European races; but that mitigated by the addition of milk, cheese, butter, fats and eggs it has great advantages, that it alkalizes the blood, accelerates oxidations, diminishes the nitrogenous losses and toxins; that it exposes one much less than the ordinary diet (especially if the latter is too rich in meats) to diseases of the skin, arthritism and congestion of the internal organs. This mitigated-vegetarian diet tends to make us peaceful and not aggressive and violent beings. It is practical and rational. It should be accepted and commended by those who pursue the ideal of the formation and education of gentle, intelligent, artistic and nevertheless prolific, vigorous and active races.

"Do not let us sacrifice to the worship of meat! The well-to-do classes are only too carnivorous. Herbert Spencer may write very carelessly: 'There is a marked contrast between the children of classes where

the diet is often animalized, and those of classes where the diet consists of bread and potatoes. From both points of view, that of physical and that of intellectual vivacity, the peasant's child is far inferior to that of the gentlemen's.

From the point of view of physical health and strength it appears that it is the contrary which is correct; as to the intellectual vivacity of the child of the well-to-do classes, it is merely the result of heredity, of the selection of progenitors and especially of education.

"A diet (a flesh diet) the exaggeration of which is the origin of so many physiological and morbid disorders, could not be favourable to the good development of the family or of the race."

A meat diet acidifies the blood and diminishes the oxidation. It charges the humours of the system with a superabundance of nitrogenous wastes, uric acid in particular; it increases the urinary alkaloids; it congests the liver; it brings on obstinate constipation and causes dyspepsia, gastric difficulties and enteritis; it leads to psoriasis, eczema, etc.; it develops rheumatic, arthritic, gouty and nervous tendencies. An alimentation, not even exclusive, but only too rich in meat, could not be endured for long. It produces arterial hypertension and heart fatigue, and becomes one of the most active predisposing causes of arteriosclerosis (Huchard). M. Housaye has shown that in the case of birds, a carnivorous diet produces sterility, arrest of development and an excessive proportion of males.

Liebig on the Advantages of a Non-Flesh Diet.

Liebig, the great German chemist, laid the foundation of agricultural chemistry and opened a new era in the application of chemistry to practical life. While not an advocate of vegetarianism Liebig never-

the-less does not hesitate to admit that a non-flesh diet is competent to nourish the human body to perfection and thus presents his views:-

"Vegetable fibrine and animal fibrine, vegetable albumen and animal albumen, differ at the most (hochstens) in form. If these principles in nourishment fail, the nourishment of the animal will be cut off; if they obtain them, then the grass-feeding animal gets the same principles in his food as those upon which the flesh-eater entirely depends. Vegetables produce in their organism the blood of all beings. So that when the flesh-eaters consume the blood and flesh of the vegetable-eaters, they take to themselves exactly and simply the vegetable principles.

"Vegetable Foods, in particular Corn of all kinds, and through these Bread, contain as much iron as the flesh of Oxen or as other kinds of flesh.

Certain it is, that of three men, of whom the one has fed upon Ox-flesh and bread, the other upon bread and cheese, the third upon potatoes, each considers it a peculiar hardship from quite different points of view; yet in fact the only difference between them is the action of the peculiar elements of each food upon the brain and nervous system. A Boar, who was kept in a zoological garden, displayed, so long as he had bread exclusively for nourishment, quite a mild disposition. Two days of feeding with flesh made him vicious, aggressive, and even dangerous to his attendant. It is well known that the vis irritabilis of the Hog becomes so excessive through flesh-eating that he will then attack a man.

"The flesh-eating man needs for his support an enormous extent of land, wider and more extensive even than the Lion and the Tiger. A nation of Hunters in a circumscribed territory is incapable of multiplying itself for that reason. The carbon necessary for maintaining life must be taken from animals, of whom in the limited area there can be only a limited number. These animals collect from the plants the elements of their blood and their

organs, and supply them to the Indians living by the chase, who devour them unaccompanied by the substance (stoff) which during the life of the animal maintained the life processes. While the Indian, by feeding upon a single animal, might contrive to sustain his life and health a certain number of days he must, in order to gain for that time the requisite heat, devour five animals. His food contains a superfluity of nitrogenous substance. That is wanting to it during the greater portion of the year is the necessary quantity of carbon, and hence the inveterate inclination of flesh consumers for brandy.

"The practical illustration of agricultural superiority cannot be more clearly and profoundly given than in the speech of the North American Chief, which the Frenchman Crèvecoeur has reported to us. The Chief, recommending to his tribe the practice of agriculture, thus addressed it: 'Do you not observe that, while we live upon flesh, the white men live upon grain? That flesh takes more than thirty months to grow to maturity, and besides is often scarce? That each of these miraculous grains of corn, which they bury in the earth, gives back to them more than a hundredfold? That flesh has four legs upon which to run away, and we have only two to overtake them? That the corn remains and grows where the white men sow it; that the winter, which for us is a time of toilsome hunting, is for them the time of rest? Therefore have they so many children, and live so much longer than we. I say, then, to each one who hears me: Before the trees over our wigwams have died from old age, and the maples have ceased to supply us with sugar, the race of the corn-planter will have exterminated the race of the flesh-eater, because the hunters determine not to sow.'"

QUESTIONS RELATING TO DIETARY HABITS

Please answer the following questions and return to your dietitian:

Height

Weight

Have you ever been on a special diet? Yes () No ()

If so, what and with what results?

Do you have a good appetite? Yes () No ()

What, if any, special foods do you crave?

What foods, if any, do you avoid?

To what foods, if any, are you sensitized?

What are your meal hours? Breakfast Midday meal Evening meal

When do you eat your heartiest meal?

How much time do you allow for each meal?

How often do you eat meat? Times daily Times weekly

How often do you eat eggs?

Do you use milk freely? Yes () No ()

Do you eat ice cream or other iced foods with meals? Between meals?

Do you eat confectionary or other foods than fresh fruit between meals? Yes () No ()

How many glassfuls of water do you take daily in addition to what you take at meals?

Which, if any, of the following condiments do you use freely? (Underscore)

Salt, pepper, vinegar, hot sauces.

Do you make frequent use of fried foods, pastries, rich desserts?

Do you make free use of fresh fruits and fruit juices?

What are your favorite foods? Fruits..... Grains.....Vegetables.....

Do you make free use of raw vegetables and vegetable juices daily? Yes () No ()

Do you drink tea, coffee, decaffeinated coffee, cereal coffee, chocolate, Coca Cola habitually?

Do you frequently drink beer, wine, whisky or other alcoholic beverages?

Do you have distress or inconvenience after eating? Pain Gas Distension
Eruption Hiccough "Heartburn" "Sour stomach"?

Do you suffer from mental dulness, depression or drowsiness after meals?

Is your circulation disturbed after meals? Cold hands Cold feet

Do you have a bad taste in your mouth? Yes () No ()

Is your breath offensive? Constantly () Frequently ()

Is your tongue coated? Constantly () Frequently ()

Do you evacuate daily? Twice daily? Three or more times daily?

What is the nature of the stool? Formed Lumpy Loose Liquid

What is the odor of the stool? Putrid Rancid Sour

Do you have flatus? Offensive Inoffensive

What laxative drugs, if any, do you use?

How long a time have you used laxatives?

Do you make free use of roughage? Bran Bran products?

Do you use laxative food accessories?

Do you use the enema?

To what extent?

In what ways, if any, were you benefited?

Do you sleep soundly?

Do you feel rested and refreshed upon arising?

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the News Bulletin, to Miss Browning.

May 7, 1929.

IS YOUR BLOOD CLEAN?

Are you weary when you haven't wrought - tired when you haven't toiled?
If so, your blood isn't clean.

Do you feel dull, stupid, confused, irresolute, uncertain? Your blood
is soiled.

Are you sleepless, nervous, irritable? Your blood is full of irritating
poisons.

Do you have headaches, pimples, a leathery skin, brown circles round
the eyes, stiff joints, a coated tongue, a bad breath? Unclean blood is the
explanation.

Are you getting old before your time? The blood is wrong. Unclean
blood makes hard arteries.

Every drop of blood has a hundred million living organisms in it,
every one working for the maintenance of life.

Every body cell needs air - oxygen - just as does a bird or a mouse.
It must breathe. Each red blood corpuscle carries a tiny bit of oxygen to
some distant cell in the brain or the liver, or other part, which will die
of asphyxia if not rescued.

Every cell in the body, like every plant and every animal in the world,
needs water. As an eminent French physiologist once remarked, "All life is
under water." The cells of the body are bathed in the blood. If the blood
is impure, every cell, every fiber of the body, is bathed by an impure fluid,
and must be more or less injured thereby.

Picture in your mind a glass globe filled with water and fishes and other
small creatures swimming about in it.

Now, imagine that indigo, ink, or other coloring matter is dropped into
the water. The water will immediately become tinged, and if the coloring
matter is of a poisonous character, the fishes will soon show uneasiness, and

unless relieved by a replacement of the impure water by a fresh supply, will soon die.

This is just the condition of the living cells of the body when bathed in impure blood. The stomach cells which secrete the gastric juice, the muscle cells which contract, the liver cells which make bile, the brain cells which think - every one is definitely and seriously injured by the impurities brought in contact with it.

The body cells are constantly assailed without and within by myriads of deal dealing germs. One blood cell in every seven thousand is a germ fighter. When germs appear, the fighting cells go straight for them, and annihilate them. We have each of us some thirty billions of these fighting cells to defend us. Each blood cell seems to have a will of its own, and to be possessed of a peculiar intelligence whereby it is unerringly led to the point where it is needed.

Endurance, stamina, ability to live long and well, to think clearly, to decide quickly, to work, to achieve, to enter into life in its fulness - all depend on clean blood.

The blood cannot be made clean by drugs. The idea that the blood may be purified by medicine of any kind is a very great error, and one which has been productive of a vast deal of mischief. There are no herbs or drugs that will purify the blood.

The blood must be enriched by an ample supply of wholesome food elements, as well as purified by the removal of waste materials and the exclusion of unwholesome material.

The only way to have clean blood is to live biologically - physiologically. Clean, natural food, clean water, clean air, clean living, make clean blood and the blood does the rest.

"The blood is the life."

BILE REGURGITATION AND SECRETION OF MUCUS.

Duodenal reflux ~~is a natural occurrence and prevents hyperacidity. It is most frequent~~ in cases of hyperchlorhydria.

It is frequently found in the fasting stomach and in the later stages of digestion. The more mucus present the less the

of gastric fluids acidity

Mucus being alkaline, neutralizes the gastric acid; hence

RATE OF EMPTYING.

The emptying time with the gruel meal is two hours.

Hypochlorhydria or achlorhydria is most common in sedentary people and is accompanied by rapid emptying. Hyperchlorhydria is most frequent in more vigorous and active men and is associated with delayed emptying. The barium meal is ^{in such cases} much slower in leaving the stomach.

THE WATER MEAL.

A pint of warm water ^(100°F) is introduced into the ^{are} stomach, before breakfast, and small quantities ^{are} withdrawn for testing at intervals of fifteen or twenty minutes.

Empty

Pavlov showed many years ago that water in sufficient quantity stimulates the acid secreting glands. The degree of acidity found may equal that of the normal juice.

The water meal may also give information about the presence of mucus or regurgitated duodenal contents, and bacteria.

TESTS FOR THE CHEMICAL SECRETION.

The small gastric tube having been introduced into the stomach, a test meal is introduced through the tube, care being taken that no food comes in contact with the mouth. Various meals may be used, as simple water, animal or vegetable extracts, milk, purees of cereals or vegetables, oil, or combinations. Fluid

is withdrawn at intervals for examination.

TEST FOR THE PSYCHIC SECRETION.

A small tube is introduced into the empty stomach and the subject is then allowed to see, smell, and taste food, but to swallow none. Samples of the gastric secretion are withdrawn at intervals of fifteen minutes for examination.

TEST FOR THE CONDITION OF THE GASTRIC GLANDS.

Taylor calls attention to the fact that if acid protein ^{giving} ~~is given~~ in cases of achylia, ~~ferments are very often formed.~~ ^{ed} If ~~ferments are not formed,~~ ^{because} it is ~~concluded~~ that the glands are degenerated; ^{believed to be} hence this test should be applied in every case in which ~~ferments are absent,~~ ^{absent} by the ~~giving~~ ^{giving} of acid protein ~~(protein +~~

~~HCl~~). In cases in which acid protein causes the ferments to appear in the gastric fluid when previously absent it should be used with each meal as an aid to the glands until the ferment-forming function is restored. The continuous use of acid protein (Acidone) is ^{often} necessary ^{in such cases as well as in cases in which} ~~when~~ no hydrochloric acid is formed.

THE BARIUM MEAL.

The digestive apparatus has two distinct classes of function. One of these is concerned with the transformation of the food from insoluble or non-absorbable substances into soluble and absorbable products which may be utilized by the body in building and repairing the vital machinery and in replenishing the vital energies of the body. This work is done chiefly by the aid of the digestive juices, which are formed by glands placed at various points along the digestive canal, chiefly in its upper part.

A second class of functions consists of mechanical treatment of the foodstuffs by which they are: (1) reduced to a soluble or pultaceous state; then (2) mixed with the digestive juices; (3) spread out upon the intestinal wall so as to aid in absorption; (4) moved from one part of the alimentary canal to another, and (5) when reduced to unusable residues, discharged from the body.

The Ewald meal and chemical examination of the stomach fluid give ~~us~~ information concerning ~~the first class of functions--~~ the action of the digestive juices upon the food. The barium meal gives information concerning the ~~second class of activities,~~ ^{movements} which are executed by the ~~muscular walls~~ of the intestine. The information obtained by the aid of the barium meal is of even greater value than that secured by the test breakfast; but for complete information it is necessary that both methods be employed. It is further to be noted that the barium meal ~~not only advises us concerning the stomach,~~ but visualizes the entire alimentary canal from mouth to anus, giving information concerning the conditions of the ^{duodenum, the} small intestine, the colon, the gall- bladder and the liver, which facts ^{may be} are of even greater importance than those elicited concerning the stomach by the Ewald meal.

For the following list of conditions concerning which information may be obtained by the opaque (bismuth or barium) meal I am indebted to Dr. J. T. Case:

no A Ulcer, cancer or tumor of the stomach, cardio^fspasm, spasm of the esophagus, spasm of the pylorus, distortions of the stomach, cysts and tumors of the pancreas, adhesions of the pylorus, ulcer of the duodenum, distortions, obstructions ~~and~~

and adhesions of the duodenum, gallstones, adhesions of the gallbladder, location and changes in the liver, abscess in or about the liver, tumors, cancer, ulcers and other changes in the small intestine, incompetency of the ileocecal valve, adhesions of the small intestine, adhesions of the colon, disease of the appendix, dilatation and adhesions of the cecum, cancer of the colon, tuberculosis, syphilis, atony, colitis and spasm of the colon.

of color
THE CARMINE MOTILITY TEST.

The rate at which the undigested foods and residues are moved along the alimentary canal is termed its motility. ~~The barium meal affords an exact and scientific method of studying the motility of the alimentary tract.~~ ^A ~~Another~~ very simple and highly practical method, ^{of testing the intestinal motility} ~~affording final results which agree very exactly with those obtained by the barium meal,~~ is the following:

^{five-grain} Two capsules, containing together about 10 grains of carmine, are swallowed with the breakfast. In place of carmine a teaspoonful of bone black or finely pulverized charcoal may be used. ~~The pigment mingles with the food, giving it a characteristic color which can readily be recognized in the stools.~~ After the ~~administration of the carmine~~ ^{then} the stools are carefully watched and the exact time noted when the color first appears, ^{when last seen.} Further ~~observations are made until the color appears for the last time, the time of which is also recorded.~~ The time of the first appearance of the color has long been in use as a means of determining motility. The true measure of the motility rate is the time which elapsed before the last appearance of the pigment.

the results of their similar tests

~~This time is found to correspond very accurately with the results obtained by the barium meal. Some thousands of observations made under the writer's supervision indicate that the motility period may vary from eight or nine hours to several days.~~

It is found that persons whose bowels move once a day usually have a motility period of ⁵³50 hours or more. When the bowels move thoroughly, three times a day, the motility period may be reduced to 16 to 24 hours. It is ~~also~~ ^(Hurst) possible for the motility to be greatly prolonged even when ^{however,} ~~the bowels move several~~ ^{evacuation occurs} times daily, ^{since the colon may be crippled and in-} ~~efficient, causing pronounced stasis.~~

The normal motility rhythm is, in the writer's opinion, the following:

The breakfast residue is discharged some time between supper and bedtime; the dinner residue before breakfast the next morning or not later than soon after breakfast; the supper residue after breakfast or not later than soon after dinner the following day. When this normal motility rate is maintained, the time which the food residues remain in the body will be: for breakfast, 13 to 15 hours; for dinner, 17 to 20 hours; for supper, 15 to 20 hours.

When the body wastes are dismissed in this prompt and regular manner, there is no time for putrefaction; ^{putrefaction} ~~wild~~ bacteria cannot obtain a foothold; the normal acid-forming flora of the intestine is dominant; and the vital machinery is not crippled by the absorption of the enormous quantities of highly toxic substances which are constantly pouring into the blood when the food residues and body wastes are retained so long in the colon that they become putrid.

This is the normal or ideal alimentary cycle, but ^{rarely} ~~it is by no means~~ realized in ordinary experience. The colon of the average man is in the condition of a congested railway system. The right of way is choked, and if bowel movements occur, they are belated, often two or three days in arrears; the residues of half a dozen or more meals are packed away in the colon undergoing putrefaction and poisoning the body.

The motility test is invaluable in connection with diet and treatment for changing the intestinal flora and may always be profitably used ^{to} ~~as a means of~~ checking ^{colon efficiency} ~~the results obtained.~~

EXAMINATION OF THE GALL BLADDER.

The X-ray examination of the gallbladder region often gives information of great value. Gallstones are sometimes seen. A certain proportion of cases, however, remain obscure, and in these the Graham test should be employed. By this means the accuracy of diagnosis may be raised to 85 to 90 per cent. ~~The special technic of this test requires the services of an expert and so need not be described here. It is by far the most dependable method yet discovered for study of the gallbladder.~~

DIAGNOSTIC GALL BLADDER DRAINAGE.

Twelve hours after the last meal, a duodenal feeding tube is introduced while the patient is in a sitting position. The patient is then placed on the right side, with the left limb drawn up over the right, so as to get the gallbladder region as low down as possible. The position aids the tube in entering the duodenum ^{in such a way} so as to bring the bulbous end of the tube ^{close to} near the mouth.

is slowly pushed along by the stomach acid

of the bile duct. The tube will usually reach the duodenum in 10 to 60 minutes. When it is certain that the bulb is in the duodenum, ^{as shown by the X-ray,} some of the duodenal fluid should be ^{drawn out,} collected. The first fluid obtained should be a "pearly fluid" with little mucus and alkaline in reaction. If the duodenum is diseased, many ^{bacteria} germs will be present and the fluid will be turbid.

The next step is to inject with a small syringe through a tube one and two-thirds ounces of a 25 per cent. solution of magnesium sulphate. This will cause relaxation of the bile ducts and opening of the common duct, with discharge of bile from the gallbladder. By gentle suction on the syringe, some of the fluid may then be withdrawn, after which the tube is disconnected and hung over the side of the couch to drain. The first liquid will be clear duodenal fluid, bile and sulphate solution mixed. In 10 to 30 minutes the bile will become darker and more viscid. This is gallbladder bile. If the quantity is large, -- more than ~~two~~ $2\frac{2}{3}$ and ~~two-thirds~~ ounces -- there is probably stasis in the gallbladder. After a time the bile again becomes thinner and lighter in color, coming direct from the liver.

If no bile can be obtained, the common duct may be obstructed. If only clear, light-colored bile is obtained, there may be obstruction of the cystic or gallbladder duct.

The benefit which sometimes results from this mode of gallbladder drainage is probably due to the getting rid of a quantity of stale and concentrated and hence highly poisonous bile.

While this method is less dependable than the Graham test it has a certain value of its own, and often renders highly valuable service by getting rid of a quantity of stale, con-

centrated bile.

copy
EXAMINATION OF THE STOOLS. -

The chemical and microscopic study of the stools is of great importance, not only as a means of investigating the residual products of digestion but also for the purpose of detecting the presence of animal parasites, tapeworms, the am^oeba of tropical dysentery, etc.

Chemical and macroscopic as well as microscopic examinations are also made for undigested food, parasites, blood, mucus, and other evidences of pathological conditions.

The examinations are repeated until the flora is changed and the stools lose their putrid character and become in other respects normal.

Some of the most significant indications in relation to the stools are the following:

2tal
~~The~~ Color. - Very light or clay colored stools signify the absence of bile. Pancreatic digestion may be deficient also. Such stools are usually very foul smelling.

Dark colored ^{foul smelling} stools denote putrefaction. The stools of a healthy breast-fed infant are light yellow in color and nearly odorless. When they become brown or dark, the child is sick and toxic. Black stools may indicate blood from hemorrhage. The normal stool is of a ^{brownish} yellowish color and soft consistency.

The so-called "well-formed stool" ~~is an indication of chronic constipation.~~ ^{usually appears} It ~~occurs~~ when the bowels move but once daily, ~~and~~ ^{it} is a form of constipation ^{rather} usually mistaken for an indication of health. ^{It forms} ^{is due to the stasis}

^{which gives opportunity for absorption}
^{of its fluid contents together with the}
^{putrefactive products held in solution}

Stool

a matter of much

~~The Odor.~~ ~~This is most important.~~ Normal stools have a slightly sour odor or a very faint fecal odor, but no suggestion of putridity. A putrid, ammoniacal, strong or rancid (butyric) odor is a certain sign of putrefaction, and when the condition is chronic, (2) there are also infection, colitis, and auto-intoxication.

probably active or latent intestinal toxemia, with a bad intestinal flora.

Stool

Lumpy stools indicate a spastic state of the colon, probably due to colitis.

A well formed stool indicates

Stool

a considerable degree of stasis.

The presence of mucus is a ~~certain~~ sign of colitis.

The mucus is most often mixed through the stool and not conspicuous. When mucus appears in large quantities, masses, membranes, and "casts," the condition is known as "mucous colitis," but is not essentially different.

Stool over

Frothy stools with a sour odor indicate very active fermentation.

Much gas or flatulence accompanying the stool indicates the presence of the pernicious Welch's bacillus, and other gas-forming organisms, especially the colon bacillus.

preponderance of Cl. Welchii and B. Coli.

Stool

BACTERIOLOGICAL EXAMINATION OF THE STOOLS, —

Bacteriological examination of the stools by modern methods is highly important. Examination of the stools with reference to specific infections such as typhoid is of course important, but of far greater general importance is examination to determine the character of the dominant flora present in the intestine, particularly in the colon. The normal flora of the colon is fermentative, or acid-forming. The dominant organism present is Lactobacillus acidophilus, a germ which produces lactic acid and does not produce gas. This ~~germ~~ ^{organism} appears as the dominant ^{test the} flora

Stool

nursing infants
~~in very young healthy children.~~ It is also found in the colons of chickens, monkeys, rats and other animals when fed on food rich in carbohydrates and given no meat.

Even in adults on a mixed diet, the *B. acidophilus* may always be demonstrated in small numbers although the dominant flora is putrefactive.

~~By means of bacteriological cultures, the character of the flora may be readily determined.~~

of C+
THE BLOOD. —

The normal blood count per cubic millimeter is 5,000,000 red cells and about 7,000 white cells. The total number of red cells in the body of a man of average size is 25,000,000,000,000.

The absorbing surface presented by the red cells is about 84 square rods, more than one-half acre. It is the function of the red cells to absorb oxygen, which is taken up and concentrated by the hemoglobin, an organic iron compound to which the red corpuscles owe their color. The blood of a well-developed man contains about 40 grains of iron.

In anemia the blood iron is reduced and the blood cells may also be reduced in either greater or lesser proportion than the coloring matter of the blood. In a person whose hemoglobin is 50 per cent, for example, the blood contains only half the normal amount of iron, which means that the vital resistance, endurance, and ability to cope with disease are proportionately reduced.

Stat
CHEMICAL EXAMINATION OF THE BLOOD. —

Chemical examination of the blood is of the highest importance. By this means it is possible to ascertain the amount of waste matters left in the blood by inefficient kidneys.

The normal amount of this substance (non-protein nitrogen) is 28 to 32 ^{mg.} milligrams (~~one-half grain~~) per 100 ^{c.c.} ~~cubic centimeters~~ (three and one-third ounces) of blood. When the amount of non-protein nitrogen is ^{constantly} much greater than this, there is reason to suspect a ~~considerable degree~~ of renal inefficiency; ~~that is, the kidneys are not able to remove from the blood the waste matters which it is their duty to extract from it.~~

~~The determination of an increase in the amount of uric acid present in the blood is the best means of detecting the earliest indications of failure of the kidneys to perform their work efficiently. An increased amount of creatinin in the blood indicates that disease of the kidneys is far advanced.~~

A knowledge of these conditions is of the utmost consequence, as it ^{indicates the urgent} ~~shows a~~ necessity for the ^{prescribing} ~~establishment~~ of a rigorously low protein diet, which might not otherwise be considered justifiable, but is absolutely required for the ~~prolongation of the individual's life.~~

~~Sugar, not cane sugar, but~~ \square dextrose, is normally found in the blood in the proportion of about one part in one thousand. When the sugar is increased considerably beyond this amount it appears in the urine and the patient is said to have diabetes. Examination of the blood, however, often shows a marked increase of blood sugar when it has not yet appeared in the urine; hence, an increase of blood sugar is a most important symptom of the approach of diabetes.

stal
col. head

WASTE CONSTITUENTS OF NORMAL BLOOD

	<u>Mgms. per 100 ccm.</u>
Non-protein nitrogen (urea, uric acid, etc.) . . .	25- 32
Urea	8- 15
Uric acid	2- 4.5
Creatinin	1- 2.5
Sugar	80-120

(not so much)
place

SERUM TESTS

The so-called Wasserman test and various other serological tests are important as means of indicating the presence of syphilitic and other infections, which may be recognized by changes in the blood reactions.

THE URINE

The urine is an extract of the tissues. It represents to a large extent the acid wastes of the body, while the bile represents the alkaline wastes. The quantity of the urine, its specific gravity, the amount of urea, uric acid and other substances, are all highly important in measuring the extent of tissue changes. The amount of ammonia, indol and other putrefaction products, also the presence or absence of albumin, casts and other abnormal elements, are most important means of judging of the kind and extent of morbid processes which may be taking place in the body.

A high protein diet is necessarily accompanied by a great increase in the amount of urea and uric acid. Folin has shown, in fact, that urea usually represents in great part the excess of protein which has been eaten, the only real need for protein being to make good the wear and tear of the living tissues. Any amount beyond the

needed

stal

stal
of et
of et

make good the loss from tissue wear and tear

small quantity required to accomplish this, instead of being built into tissue, ~~is carried directly out of the body as so~~

must be promptly excreted as used.

~~much waste matter.~~ It will thus be readily seen how great a burden ~~is~~ imposed upon the kidneys by the extra work required of them in the elimination of surplus protein eaten in the form of steaks and chops.

a great and unnecessary *which Newburg, and Hinderode and others hold to be a contributing cause of the great acid in-*

~~Still~~ Another extra burden thrust upon the generally ~~over-worked~~ kidneys when an excess of protein is eaten ~~is~~ the

unnecessary

is thrown

that could be

~~necessity~~ for the elimination of the indol, skatol, and other poisonous products resulting from the putrefaction in the colon of the undigested residues of meat ~~and other food substances rich~~

which represent one-seventh or more

~~in protein.~~ These putrefaction products are believed by Folin to be the probable source of the ammonia which is found in the urine in quantities closely proportional to the amount of meat eaten.

of the

TESTS OF THE URINE.

Diabetic patients, when possible, should be instructed in the methods of examining the urine, so that they may be able to note the effects of their diet and to detect at once the appearance of threatening symptoms in their own cases. The following directions should be carefully followed.

COLLECTION OF THE SPECIMEN

of collection of the specimen, should be used

Use **F** for the purpose only glass jars or bottles, which have been thoroughly cleaned and scalded with boiling water. During the collection keep the jar well covered and in a cool place. The specimen to be analyzed should cover a period of twenty-four hours, and should be obtained in the following manner:

Empty the bladder at the usual time of rising in the morning, say 7 A. M. This is to mark the beginning of the collecting period; hence this passage is not to be saved. Then carefully save all the urine passed until 7 A. M. the next day, taking care to completely empty the bladder at this time. If the quantity is so large as to require several containers to hold it, the whole of the twenty-four-hour specimen should be poured into one vessel large enough to hold it all, so as to secure thorough mixing. Note the total quantity, being careful to measure very accurately. If it is desired to send to the laboratory a specimen for complete analysis, fill a perfectly clean bottle or jar, holding at least one pint, with the mixed urine, seal properly and label with the name and the total quantity of urine passed during the ~~24~~ *twenty-four* hours. A half dram of toluol may be added to preserve ~~it~~.

METABOLISM TESTS. -

In the term metabolism is summarized the total vital activities of the body. All these activities depend upon the consumption of oxygen, just as does the work of a locomotive. The amount of steam produced, and thus the amount of energy set free from the coal in a boiler plant or a locomotive, is determined by the amount of oxygen admitted to the boiler furnaces. In like manner, the amount of oxygen consumed in the body is an accurate measure of the amount of energy produced. Each cubic foot of oxygen burned means the liberation in the body of energy equivalent to 160 foot tons. Exposure to cold and muscular activity very greatly increase the rate of oxygen consumption and of energy

90
~~90~~

expenditure.

By means of ~~recently~~ ^{appropriate} devised apparatus, it is now possible to make very exact measurements of the amount of oxygen consumed and hence to determine accurately the rate of energy production in the body. ~~The application of these tests~~ has ^{we} shown that the rate of metabolism is increased in certain diseases and sometimes to a very high degree. This is particularly true in hyperthyroidism and in fevers. ↑
metabo-
lism

The ~~metabolism~~ ^c rate is commonly diminished in aged persons, and in certain diseases ^{such} as chlorosis, anemia, cachexia, Bright's disease, myxoedema, malnutrition, and malignant diseases.

Ital
TEST FOR ACIDOSIS. —

The condition of acidosis is often indicated by a sweetish or sweetish-sour odor of the breath, ~~due~~ ^{owing} to the presence of acetone. Acetone may also be found in the urine. The most accurate means of measuring the degree of acidosis present is by determination of the ^{carbon dioxide} ~~CO₂~~ tension of the residual air of the lungs. ~~This is done by the use of a special apparatus, into which the patient breathes.~~ ^{an instrument} The minimum normal ~~CO₂~~ tension is 34. When the tension falls below this it is evident that the supply of oxygen to the tissues is insufficient, and ^{that} acids are accumulating. In high health the tension is 40 to 45. Inability to hold the breath thirty seconds or more suggests acidosis.

Ital
THE BODY WEIGHT. —

The body weight is a simple and very practical metabolism test which should have more attention than it commonly receives. Rapid loss of weight may be due to excessive metabolism. This condition is often the result of worry, suspense, or anything which increases nerve tension. The increased expenditure of

energy is due to an increase of the so-called muscle tonus, which in health and with the body in a state of rest, accounts for 30 to 50 per cent of the total energy expenditure, but which may be increased 100 per cent by exercise of the muscles or exciting emotions, or by fever due to acute or chronic infection. On the other hand, an increase in weight may indicate either a gain in flesh or an accumulation of ^{water} ~~wastes~~ in the tissues. It is highly important to watch the body weight narrowly in wasting disease like tuberculosis and diabetes, and likewise in obesity and dropsy.

ref
see

STRENGTH TESTS

Tests of strength are, when properly interpreted, a valuable means of determining general neuro-muscular conditions. Muscular effort is the result of the combined activity of nerves, nerve centers and muscles--the so-called neuro-muscular mechanism.

By means of the universal dynamometer each of the thirty large groups of muscles may be tested. The data obtained, when plotted, presents a graphic picture of the neuro-muscular system as a whole and of each particular group in relation to normal standards. The general strength is an important indicator of nutritive conditions.

Fortu

* A New Dynamometer for Use in Anthropometry,
by J. H. Kellogg, M. D., read before the British Association
for the Advancement of Science,

616.076

COMPARATIVE RESULTS OF URINARY ANALYSIS WITH HIGH PROTEIN AND LOW PROTEIN

DIETARIES

---00---

	High Caste Hindoes	Low Caste of Meat-eating Hindoes	Bengali Students (Low proteid)	Ameri can Students (Flesh- abstainers)	Mixed Diet--feeders (Folin)
Quantity	1197.4	1195.0	1390.0	1000.0	1400.0
Specific Gravity	1.014	1.014	1.009	1.015	-----
Urea	12.97	12.92	14.52	11.85	29.80
Total Nitrogen	5.99	5.86	6.85	6.44	16.00
Chloride	6.85	10.59	7.13	6.45	10.05

615.2
(Ed. Good Health.)

GEORGE WASHINGTON'S DIET.

Washington was a man of frugal habits. Although not a trained athlete he was a man of great vigor. The place is still shown in Washington where he threw a silver dollar farther than any other man of his time could throw it. He on one occasion covered twenty-four feet on a running jump, a feat which has remained unequalled until within a few months of the present time. During his term as President Washington and his wife entertained every Thursday, but it was noticeable that the President himself partook only of the plainest and simplest food, his entire meal often consisting of a single dish. This simplicity in diet may possibly be the secret of Washington's great physical endurance and the clearness of mind which made him master of many difficult situations.

MEDICAL DIETETICS

Regulation of the diet is perhaps the most important of any single measure in ^{both the prevention and the treatment} the treatment of chronic disease. ^{Said} As Professor Chittenden, of Yale ^{University,} has well said: "It is one of the axioms of physiology that the majority of the diseases of mankind are due to, or connected with, perversions of nutrition." Food supplies the elements needed for the repair of the body cells, the materials upon which the body cells work in their various activities, and acts as a vital stimulus to the cells. By regulating the food supply in kind and in amount, and by modifying its form, every tissue and function may be profoundly influenced. Nutritive processes may be slowed or accelerated and may be qualitatively modified as well as quantitatively.

Clinical experience has taught us that a large share of all chronic disorders to which civilized man is subject are the result of erroneous living habits, and there can be no question that wrong eating practices are, of all our habitual errors, most active in the production of the disorders of nutrition which characterize the various forms of chronic disease. It is evident, then, that ~~in dealing with disease,~~ ^{improve} one of the first things to be done is to ~~correct errors in~~ ^{correcting} nutrition by ~~so regulating the~~ ^{eating} dietary as to ~~eliminate~~ ^{ing} faulty habits, cultivate ^{ing} normal, ^{that is,} or biologic appetites, and train ^{ing} the digestive organs to normal activity.

~~Among the illustrious~~ examples of the benefits arising from such a correction of faulty ~~dietetic~~ habits ~~may be mentioned the case of~~ the late Professor Huxley, who described himself as having suffered ^{was} ~~from want~~ ^{for many years from lack} of energy and ~~"life-long depression,"~~ and then by renouncing the use of alcohol and tobacco and greatly lessening his intake of food, ~~he~~ freed himself, as he said, "from gross intemperance," ^{and} recovered his former vigor and enjoyed as good health as ever in his life. *

~~Until very recent years,~~ almost nothing was known about the therapeutics of diet. The whole subject, like most other ~~medical matters, was based on empiricism.~~ Today, thanks to the labors of Pavlov, Rubner, Voit and Pettenkofer, Bayliss, Atwater, Benedict, Chittenden, Osborne, Mendel, Cannon, McCollum, Hopkins, and scores of other modern investigators, we have a really scientific basis for dietetics; and as a result, such wonderful victories in the battle against disease are ~~daily~~ being won as a century ago would have been regarded as truly miraculous. *

7. The corner drug store is no longer merely a pharmacy; it has become a cafeteria and serves special foods for particular diseases and morbid conditions which progressive physicians order for their patients by prescription. Indeed, the old materia medica of the last generation is now largely supplanted by a rational and efficient system of materia alimentaria. *

If in this section the reader misses many of the familiar formulas usually found in treatises on medical dietetics, let him not be disconcerted or imagine himself entering on untried ground; but rather, let him be assured that every suggestion or recommenda-

tion has behind it not only a sound physiological fact, but
also ample practical, clinical experience.

A p37

The science of nutrition
is, ^{one of} the youngest of all the
sciences closely related to
human life. Half a century
ago, few basic facts had
been discovered. Rules for
human feeding were
almost wholly empir-
ical; but

++ p17
and national dietetics has
become the leading meas-
ure of contributing to the
well-being of the people and
the prevention and
cure of disease.

By C. A. Carter

COMMON DIETETIC ERRORS

Before considering the dietetic treatment of individual diseases we shall first give attention to some general considerations which apply to nearly all disorders, especially the question of intestinal toxemia or autointoxication, common errors in diet, and some of the more important tests for the functions of digestion, nutrition, metabolism and excretion, by means of which the regulation of the dietary may be scientifically directed.

Since ~~the~~ many forms of indigestion, as well as most of the disorders of nutrition, are due to errors in diet, ~~attention has already been called in the preceding chapters to numerous common faults and erroneous notions in relation to human feeding,~~ *regarding* but it will perhaps be profitable again to briefly summarize those errors in diet which are most common and the correction of which is highly essential *for* ~~in~~ *successful* the treatment of nutritive disorders.

By C. A. Carter

FOOD EXCESS.

The excess may relate either to the total amount of food eaten or to the individual food factors. That is, the calorie value of the total food intake may be in excess of body needs, or the error may be an excessive intake of carbohydrate, fat, protein, or acid-ash foods. ~~(meats and cereals).~~

An excessive intake of food is much more common than a deficiency. The average person has little appreciation of the fact that there is no *constant* ~~definite~~ relation between the bulk ~~and~~ *or* weight of food and its nutritive value. For example, an ounce of almonds has greater food value than 20 ounces of cabbage, cauliflower, or

~~eggplant, or a pound of beets, carrots, or string beans.~~

~~So it is possible for one to overeat by unduly~~ ^{may}
distending the stomach with bulky food, such as coarse vegetables
or juicy fruits, while the quantity of nutriment absorbed may
really be insufficient to nourish the body. On the other hand,
one may easily take a great excess of nourishment, although the
actual weight and bulk of the food consumed may be small.

It is on this account important to learn ~~how to~~ estimate
the actual values of foodstuffs ^{in calories} as ^{consumed.} expressed in calories. This may
be easily ^{use of reference tables showing calory values.} done by a ~~study of the extensive tables presented else-~~
~~where in this work.~~

Among the bad effects of overeating are an excessive
gain in weight, dullness after meals, drowsiness, insomnia, indiges-
tion. It is to be noted, also, that overfed people are shorter lived
and more likely to suffer from cancer than the underfed. ~~According~~
~~to Williams,~~ ^{for example,} cancer is almost unknown among the poorly-fed Hebrews
of East London, but is very common among the wealthy Jewish bankers
of Hyde Park. ^{(Williams).} Bright's disease, arteriosclerosis, high blood
pressure, and apoplexy are also among the consequences of over-
feeding. In time, the stomach breaks down from overwork; flatulence,
hyperacidity, ^{duodenitis,} disorders of the liver and gallbladder, ^{colitis} and hemorrhoids
are among the common results.

It is always to be remembered that what would be only
a sufficiency or even not enough for a hard working laborer might
easily be a great excess for a man of sedentary habits. ~~The daily~~
~~ration for persons of different occupations has been considered in~~
~~a previous chapter.~~

The method of serving the food in successive courses, and especially the plan of arranging the bill of fare in such a way as to encourage eating to excess by presenting the most highly palatable dishes last, ^{encourages excess.} ~~is productive of great mischief.~~ Desserts consisting of rich dishes, such as ice cream, pastry and confectionery, are common leading strings to ^{over-indulgence.} ~~excess.~~ Persons who are addicted to overeating should adopt the plan of eating at the beginning of the meal a considerable quantity of bulky food, such as spinach, cabbage, turnips, carrots, lettuce, etc. By this means, the sense of satiety may be induced before an excess of nourishment has been swallowed.

Fats. - Special injuries may result from an excess of particular food principles: for example, an excess of fat leads rapidly to obesity, ^{Each ounce of excess fat, adds an ounce to the weight.} ~~and, by causing too long retention of foodstuffs in the stomach and of food residues in the colon, promotes intestinal putrefaction.~~

The delay leads to excessive reabsorption of bile and to toxic effects therefrom which are popularly described as "biliousness," or "inactivity of the liver," although in fact the liver is in no way at fault.

Persons whose stomachs do not produce a sufficient quantity of gastric juice and those suffering from intestinal toxemia, the result of chronic constipation, should especially avoid an excess of fat. ⁹ The oil enema, sometimes employed for the relief of constipation, may do harm by promoting intestinal putrefaction and by interfering with gastric digestion. Paraffin oil should be

Do not hurry to eat never eat the order things in the kitchen best.

7?

WARD DIET.

Course A.

Preparation for Operation.

Modified diet list 1 week

Exclusive fruit diet 1 day

Course B.

Following Abdominal Operation.

Sanitas Porridge

Protose Bouillon

Fruit Soup

Malted Nuts

CONVALESCENT DIET.

Granose Cakes toasted

Granose balls

Granose short cake

Gluten Biscuit (all kinds)

Granola fruit pie

Granola with Fruit juice or nut cream

Granola mush

Well ripened fresh fruits

Stewed fruits

Fruit toast

Corn pulp

Pease patties

Mashed pease, beans and lentils

Tomato puree

Tomato toast

Nut cream custard

Cream cup custard

Whipped egg

Egg soft poached on toast

Egg soft boiled or poached

Kumyss egg-nogg

DRY DIET.

A. Absolutely Dry.

Granose flakes toasted brown
Granose cakes toasted brown
Granose balls
Zwieback fresh toasted
Whole wheat wafers toasted
Rolls, sticks, crackers, well toasted
Granola
Granut
Gluten breads and biscuit of all kinds
Hard boiled yolks of eggs
Protose
Bromose
Nuts of all sorts, well chewed
Nuttolene
Malted nuts, dry
Malt honey
Maltol
Figs
Ripe olives

B. Dry Diet.

Add to A the following (small type).

Granola, granut, or toasted granose with nut or fruit dressing
or cream
Roasted rice with fruit dressing
Pease, beans, lentils mashed or as patties or nut roast
Eggs soft boiled, or poached
Egg on toast
Egg with granose flakes
Fresh or stewed fruit at the end of the meal in moderate amounts

C. Dry Diet.

Dinner-- A. & B.

Breakfast & Supper-- Liquid diet or liquid diet for breakfast and fruit only for supper.

SEMI-LIQUID DIET.

Liquid Diet (No.) and in Addition the Following:--

Well softened toast of all kinds, fruit toast, cream toast, gravy toast, etc.

Granola, granut, granose, well softened or served with fruit juice, cream or almond cream

Roasted wheat flakes with fruit juice or cream

Roasted corn flakes with fruit juice or cream

Granose porridge

Granola mush

Purees of pease, beans, lentils, corn, tomatoes

Stewed fruits

Baked apples

LIQUID DIET.

Sanitas food

Gluten porridge

Vegetable broth

Protose broth

Malted nuts

Maltol

Malt honey

Whipped egg

Whipped white of egg

Kumyss nogg

Cream custard

Sterilized milk

Malted milk

Buttermilk

Cream

Kumyzoon

Kumyss

Fruit purees

Fruit soup

Fruit juice, grape, raspberry, nectar

~~Fruit purees~~

~~Fruit soup~~

~~Fruit juice, grape, raspberry, nectar~~

FRUIT DIET.

A. Four meals per day. 7.A.M. 11A.M. 3 P.M. 7 P.M.

Use fruit only--the best are strawberries, peaches, grapes, apricot
oranges, apples

Three meals daily:

Fruit juices without cane sugar

Stewed fruit, canned fruit

Fruit purees

Cooked dried fruit

Fruit soup

B. Dinner, consisting of fruits and simple cereal and nut preparation
See Diet List No. 00

C. Fruit for supper only, other meals as indicated in B. above

D. Ordinary aseptic diet twice daily. Exclusively fruit diet for one
day each week, and when threatened with headache, biliousness
etc.

STERILIZING DIET.

Acid or sub-acid fruit juices, oranges, lemon, grape, apple, cherry, raspberry without cane sugar, may be sweetened with malt honey, may be carbonated if desired

Fresh fruits except dates, olives, bananas and melons

Stewed, baked or canned fruits

Cooked dried fruits

Kumyss

Kumyzoon

A. Four meals a day. 7 A.M. 11 A.M. 3 P.M. 7 P.M.

Fruit and kumyss or kumyzoon must not be taken at the same meal

B. Modified--

Breakfast and supper--Fruit only

Dinner--Dry cereals (See diet List No. with fruit

C. Two meals a day

Fruit with dry cereals only

Fruit or fruit juice at night

INFANT DIET.

Sanitarium Infant Food

Toasted, granose cakes //

Granose balls

Granose short cake

Granose flakes.

Granut gruel

Sanitas porridge

Gluten nut cream porridge

Granola with nut cream or fruit juice

Gluten cream porridge

Sanitas cream porridge

Sanitas Infant Food with cream

Granose with milk, cream, nut cream, or fruit juice

Gluten fruit porridge

Granut with fruit juice

Cream toast.
Fruit toast.

Bromose

Malted nuts

Almond cream

Malted nuts with cream

Nut cream custard

Sterilized cream well diluted

Egg albumen with toast water

Egg albumen with cream

Fruit soup

DIET SUITED TO CASES OF CONSTIPATION.

Granose

Granut

Graham zwieback

Crystal wheat

Sanitas Food

Bromose

Malted nuts

Malt honey

Maltol

Fruits of all kinds used freely

Steamed figs

Fig cakes

Green vegetables if not contraindicated by fermentation, gastric catarrh, or hyperpepsia

Avoid:--

Superfine flour bread

Tea, coffee, cocoa, chocolate,

Cane sugar

Milk except kumyss, kumyzoon, buttermilk

Especially avoid irregularity in meals

FEVER DIET.

Granola fruit gruel

Granola nut porridge

Granut gruel

Sanitas porridge

Gluten (almond) nut porridge

Gluten fruit porridge

Vegetable broth

Protose broth

Malted nuts

Almond cream

Fruit coco

Malt honey with fruit juice

Fruit soup

Fruit juice--grape, raspberry, apple

Carbonated fruit juices

Buttermilk

Kumyzoon

Kumyss

DIET TO SUPPRESS ACID FERMENTATION.

Dry toasted cereals

Granose biscuit
Granose flakes
Granut
Zwieback
Wafers
Crackers
Rolls
Sticks
Gluten biscuit of all sorts
Charcoal biscuit

Grains and legumes

Pease, mashed or in patties
Beans, mashed or in patties
Lentils, mashed or in patties

Nut foods

Nut roast
Bromose
Protose
Nuttolene
Malted nuts
Nut butter
Maltol
Malt honey

Avoid:--

Liquids of all sorts at meals
Mushes, soups, milk
Cane sugar and sweet sauces or desserts

DIET TO INCREASE WEIGHT.

No/-----

-----x-----

Fat and Blood-making Foods especially indicated in convalescence from severe fevers, and in anemia, pernicious anemia, and chlorosis, respecting such contra-indications as may be presented by special conditions of the stomach or other digestive organs.

Granose,

Granola,

Granut,

Zwiebach,

Sanitas food,

Gluten biscuit,

Gluten corn bread,

All breads and cereal preparations except ordinary mushes.

Gluten porridge,

Gluten pease biscuit,

Potato biscuit,

Pease, beans, or lentils, steamed, mashed, or baked, or as patties or purees.

Cornlet or corn pulp.

Potato biscuit,

Roasted rice,

Ripe olives,

Protose,

Nuttolene,

Bromose,

Blanched almonds,

Filberts,

Pecans,

Fresh walnuts,
Malted nuts,
Nut meals and purees,
Nut butter,
Almond cream,
Whipped egg,
Poached egg,
Soft boiled egg,
Kumyss nog,
Almond cream custard,
Cream custard,
Cottage cheese,
cream,
Sterilized milk,
Butter milk,
Kumyss,
Kumyzo on

DIET FOR OBESITY.

No.-----

XXXXXXXXXXXXXXXXXXXXXXXXXXXX

COURSE A.

Four meals per day,
Exclusive fruit diet. Diet List No.---
Fruits of any sort.

COURSE B.

Kumyss or Kumyzoon, 3 to 4 quarts daily, take in four
meals, 7 A. M., 11 A. M., 3 P. M., 7 P. M.

COURSE C.

Dry Diet.-

Limited in quantity to two-thirds the usual amount or --
food units per diem,

Take two meals daily at 8 A. M., 3 P. M.

Zwiebach,

Granose,

Gluten biscuit,

Green vegetables, spinach, lettuce, celery,

Protose--small amount,

Acid fruits.

DIETARY ADAPTED TO INTESTINAL CATARRH? GASTRIC CATARRH? GASTRO-
ENTERITIS.

No. 13.

-----x-----

Granola toasted,
Zwieback toasted,
Wafers toasted,
Sticks toasted,
Rolls toasted,
Granose toasted,
Granose balls,
Gluten biscuit,
Sanitas porridge,
Granose porridge,
Granola porridge,
Corn pulp,
Gravy toast,
Nut cream toast,
Nut rice pudding,
Gluten nut porridge,
Cream rice pudding,
Gluten cream porridge,
Kumyss,
Kumyzoon,
Roasted rice with fig or prune sauce,
Purees' of sweet fruits, prunes, figs, raisins,
Prune toast.

HYPERPEPSIA.

No. --12.

-----x-----

DRY DIETARY.

A. (Absolutely dry).

Granose cakes toasted brown,
Granose flakes toasted brown,
Granose balls,
Zwieback fresh toasted,
Whole wheat wafers toasted,
Granola,
Granut,
Gluten breads and biscuit of all sorts,
Hard boiled yolks of eggs,
Bromose,
Nuts of all sorts well chewed,
Nuttolene,
Malted nuts dry,
Malt honey,
Maltol,
Figs,
Ripe olives,

B. (Moderately dry) Add to A. the following.-

Granola, granut, or toasted granose with nut or fruit or
cream dressing,
Roasted rice with fruit dressing,
Pease, beans, and lentils, mashed or as patties or nut
roast,
Eggs soft boiled or poached,
Mashed pease, beans, and lentils,
Tomato puree',

HYPERPEPSIA. Continued.

Tomato toast,

Nut cream custard,

Cream cup custard,

Whipped egg,

Kumyss egg nog,

C. (Liquid Diet - No.)

BATTLE CREEK SANITARIUM
ULCER DIET

7:00 A.M. 1 oz. Nuflora in 6 ounces warm water and 2 tablespoons cream

8:00 8 oz. milk with 2 heaping teaspoons B.Lac or lactose
4 oz. strained psyllium jelly

9:00 3 oz. orange juice with 3 oz. water and 2 heaping B.Lac or lactose

10:00 8 oz. milk with 2 heaping teaspoons B.Lac or lactose

11:00 8 oz. soy milk with 2 heaping teaspoons B.Lac or lactose

12:00 noon 8 oz. milk with 2 heaping teaspoons B.Lac or lactose
4 oz. strained oatmeal gruel

1:00 P.M. 4 oz. fresh carrot juice with 2 oz. water

2:00 8 oz. milk with 2 heaping teaspoons B.Lac or lactose
4 oz. strained psyllium jelly

3:00 8 oz. milk with 2 heaping teaspoons B.Lac or lactose

4:00 1 oz. Nuflora in 4 oz. warm water and 3 oz. orange juice

5:00 8 oz. milk with 2 heaping teaspoons B.Lac
4 oz. strained oatmeal gruel

6:00 8 oz. soy milk with 2 heaping teaspoons B.Lac

7:00 8 oz. milk with 2 heaping teaspoons B.Lac
4 oz. strained psyllium jelly

8:00 1 oz. Nuflora in 4 oz. water and 2 oz. orange juice or banana puree

9:00 8 oz. milk with 2 heaping teaspoons B.Lac

10:00 8 oz. soy milk with 2 heaping teaspoons B.Lac

Night feeding: 1 or 2 oz. Nuflora in 8 oz. warm water

Approximately 2500 calories

In general, an ulcer diet, because of the need of the very bland quality, is deficient in at least part of the vitamins and minerals and should not be used indefinitely.

The juice of sweet oranges diluted with water and carrot juice are usually well tolerated and should be given in small quantities several times daily to the amount of at least eight ounces to supply vitamin C (ascorbic acid).

Milk and soy bean milk may be used interchangeably.

Nuflora (dextrin), B.Lac, Lactose or Lacto Dextrin may be used interchangeably. The purpose of these sugars is to stop intestinal putrefaction and as an aid in healing the mucus membrane of the entire gastro-intestinal tract. The reason for this property is that these carbohydrates are digested and absorbed more slowly than other sugar and some of it reaches the colon undigested where it feeds the colon organisms and stop the process of decay of the colon residues.

One of these sugars may be taken in the milk with each feeding as given in the attached dietary or it may be taken alone in water in the amount of one heaping tablespoon in 1 glass of warm water four to six times daily (4 to 6 ounces).

Gruels of oatmeal, wheat germ and rice are soothing to the stomach, supply vitamin B and give variety to the diet.

Very ripe banana puree or dried banana flakes made into a gruel is very bland, aids in preventing decay of food residues and gives variety to the diet. Very ripe papaya and avocado puree may also be added to the diet.

Eggs, like meat, decay easily and increase the toxins in the colon and should be used sparingly if at all, then only the yolks should be used.

Meats and meat broths of all kind should be avoided.

When the ulcer is healed, more food may be taken at one time and the number of feedings should be lessened gradually, also the variety may be increased by adding the puree of vegetables, puree of bland fruits and cereals.

Additional vitamins are usually needed.

In general, persons having a gastric or duodenal ulcer also have some form of intestinal infection (constipation and other forms of colitis).

The only hope of a permanent cure of the ulcer is by giving close attention to colon hygiene. For this purpose Nuflora, B.Lac, lactose, or Lacto Dextrin and psyllium jelly are invaluable.

The strained psyllium jelly is prepared by soaking one heaping teaspoon L.D. Lax, Laxo or other psyllium preparations in a glass of warm water until thickened, stir frequently and strained through a fine sieve. Add one heaping dessert spoons B. Lac or Lactose to each glass of strained jelly.

When the stool has a putrid odor and there is discomfort from gas, thorough warm enemas give relief.

It is usually advisable to take two or more enemas every evening. Take 2 quarts of water each time, temperature 105-110°F. In the last water add 2 heaping tablespoons lactose, Lacto Dextrin or 1 glass of Nuflora. If there are no natural bowel movements, enemas should be taken night and morning until the colon is trained to empty more efficiently.

THE BATTLE CREEK SANITARIUM
MODIFIED ULCER DIETARY

- SOUPS:** Cream soups of pureed vegetables as string beans, wax beans, peas, asparagus tips, stewed celery.
- VEGETABLES:** A puree is material obtained by forcing a food through a colander. A soufflé is a puree combined with a custard and baked.
- Peas, carrots, squash, string beans, asparagus, spinach, corn.
Baked, stuffed, mashed potatoes.
All vegetables should be pureed.
- ENTREES:** Macaroni, cream sauce, baked noodles in limited quantities.
- EGGS:** Soft boiled eggs, soft poached eggs, baked soft in cream or scrambled. Use eggs sparingly.
- CEREALS:** Cream of Wheat, Farina, oatmeal, Vita Wheat, Wheatena, etc.
- BREADS:** Whole wheat toast thin and crisp of bread 24 hours old. Whole wheat melba may also be used.
- BEVERAGES:** Milk, soy milk, soy acidophilus milk, Malted Nuts, Almond Cream, buttermilk or 1/3 cream, coconut milk, Dormi, dilute orange juice (1/4 water), Lacto-Dextrin.
- DESSERTS:** Gelatines made from agar and juice of unsweetened canned pears, blueberries, prunes, white cherries, whipped cream. Plain custard baked or boiled-- no sugar.
- FRUITS:** Unsweetened prune puree, pear puree, white cherry puree may be taken if well tolerated. Dilute orange juice, well ripened, banana puree.
- MISCELLANEOUS:** Cream whole wheat toast, milk toast, cottage cheese mixed with cream.
- TO BE AVOIDED:** All fried foods
Rough fibrous or seedy foods
Tea and coffee
Condiments, for example, pepper, mustard, excess of salt, catsup or any kind of sauces.
Cane sugar
Use salt in moderation
Meats of all kinds.

The diet consists of six feedings: three light meals with liquid feedings at 10 A. M.; 4 P. M. and 8 P. M. The feedings may be milk 1/3 cream. Cereal gruels with Lacto-Dextrin in milk or water.

Eat slowly. Do not eat when over tired, nervous or hurried. Rest and relax for a few minutes if possible.

Drink no water with meals. One to two glasses of warm or cool water should be taken every morning one hour to one-half hour before breakfast. At least one glass of water should be taken between meals.

ULCER DIET

7:30 A. M. 1 oz. (1 glass) of Nuflora in a glass of hot water.

8:30 Breakfast

Banana puree (very ripe bananas)
Oatmeal strained, cream
Glass of warm milk.

10:30 1 glass of Nuflora in glass of hot water
1 glass of milk

12:30 Cream of rice soup, strained
Thick potato gruel, cream
Glass of milk
Unsweetened pear puree

3:00 P. M.

1 glass of Nuflora in glass of hot water
1 glass of milk

5:00 Cream of parsley soup (parsley puree)
Oatmeal strained, cream
Glass of milk
Banana puree

7:00 1 glass of Nuflora in glass of hot water
1 glass of milk

9:00 1 glass of Nuflora in glass of hot water
1 glass of milk

Strained soups and gruels of

potato
carrot
peas
celery
parsley
spinach
squash

rice
oatmeal
wheat germ
cream of wheat
Vita Wheat
barley
milk

soy milk
soy acidophilus milk
cream

Food file.

NOTES ON FOOD DIETETICS.

Daily Ration.

Thirty calories (140 heat units for every kilo of weight.)

Three-fourths grams of proteid.

One-half gram of fat.

Three grams of carbohydrate for each pound of weight.

Amount Consumed in an Hour.

While asleep, one-third ounce.

Standing, one-half ounce.

Walking two miles, one ounce, walking three miles, one and one-half ounces.

Amount of fat depends on surface.

Fat amount less than thin.

Skin surface about 121 square feet.

600 heat units for each square foot.

Children more than adults in proportion.

Two years, .03.

Ten years, .06.

Fifteen years, .08.

Brain work requires no increase.

No more loss than in idleness.

Animal Fats.

Meat:--

1. Gelatin.
2. Soups.
3. Beef extracts.

4. Eggs.

5. Milk.

Meat contains 15% innutritious matters.

15% of total nitrogen is extractives.

To find weight of extractives multiply by 3.12.

To find weight of albumen, multiply by 3.25.

Digestion of Meat.

Three and one-half ounces of raw meat digests in two hours.

Boiled meat digests in three hours.

Roasted meat digests in four hours.

Meat a quick fuel.

Difference in Meats.

Kean, the actor ate pork for tyrants, beef for murderers.

Brains are easily digested.

43% not absorbed.

'If', says Pawlow, 'one alters the diet of an animal and goes on giving the new food, one finds that the ferments contained in the digestive juices accomodate themselves more and more every day to the altered diet. If for example, one feeds a dog on bread and milk only, and then changes to a purely meat diet, which contains much more proteid and almost no starch, one observes ~~xxxxx~~ a gradual increase in the proteid ferments of the pancreatic juice. The capability of digesting proteid day by day, whilst conversely, the starch-digesting power falls off. This adaption takes much more readily in some animals than in others. Where it does not easily occur, a sudden change of diet may produce consider-

able disturbances.'

Oysters.

Fourteen oysters equal an egg in food value.

14% nutriment.

Typhoid fever.

Extractives.

Creatin, Carnine, Carnicacid, Xanthin; not tissue builders.

Extractives not stimulants.

Peptogens.

Vegetable pepetogens.

protose powder.

protose peptone.

LECTURE ON DIETETICS.

FOOD ELEMENTS.

Organic

Nitrogenous

Proteids--Gluten, myosin, casein, legumin

Albuminoids--Gelatin.

Non-Nitrogenous

Carbohydrates- Starch, dextrin, sugar.

Fats--Olive oil, butter, etc.

Peptogens

Salts, uric acid, carmine, etc.

Inorganic

Water

Organic salts

Increase osmotic pressure (6 atmospheres) from six to
~~six~~ and a half atmospheres.

Support Work and Heat.

Proteids

Albuminoids

Carbohydrates.

Fats

Mineral matters

Water.

Tissue Formers

Proteids

Minerals

Water

Heat bi-product of cell action. Certain amount needed to insure proper cell action.

Fuel value of fat. Proteids 4.1; carbohydrates 4.1; fats 9.1. Multiply the percentage of these numbers respectively.

Study of the various food elements.

Digestibility of foods, that is the length of time required in the stomach.

Solidity, toughness and peptogens.

Satisfying power. Stick by the ribs due to fats.

Eggs, fat pork, fruits and starch are not satisfying. ^{+ salts}

Absorbability.

Proteids;-- animal and vegetable. Loss is as follows-- carrots 40%; potatoes 30%; beets 17%; rice 20%; milk 7%; beef 2.6%; eggs 2.6%. Reason for greater loss is vegetable proteids. ~~Source of error is~~ ^{the} nitrogen and digestive juices. ^{of the}

Absorption of fat.

The lower the melting point the better absorption.

Butter melts at 100°, loss 2 1/2%.

Bacon melts at 118°, loss 8%.

Mutton melts at 126°, loss 10%.

Total amount of absorption in one day is 5 1/2 ounces.

11 ounces less 45%, six ounces absorbed. Starch and sugar almost completely absorbed.

Calories lost; rice 2.6; milk 4.4; bread 4.5; meat 5.5; potatoes 6.8; carrots 20;

In recent experiments it is shown that potatoes 97, meat 75, and loss of uric acid through ~~the~~ being neglected.

MEASURES TO ENCOURAGE APPETITE.

1. Have a double stomach tube made with a small metal chamber at the lower end through which ice water may be circulated by means of a pressure bottle.

2. Ice-bag over stomach for half an hour before meals.

3. Percussion douche to the stomach.

4. Sinusoidal electric to the inside of the stomach.

5. Vibration over the stomach.

Apply sinusoidal to the stomach internally to cause gastric contraction, thus creating appetite and starting peristalsis to move the bowels. Application should be made a little while before meals.

Intragastric electrode. Connect to a small metal bulb a silkworm gut fish line and a small wire. Pass the line and wire through a small rubber tube. Have the patient swallow the bulb. Pull it out with the line.

See of ...

DIET IN ENDURANCE.

Dr. J. Icoyke, director of the laboratory of the University of Brussels, made recently (1907) an exhaustive study of the relation of diet, especially of a high protein diet, to endurance. Comparisons were made between persons for years accustomed to a vegetarian or low protein dietary and those who used the ordinary mixed diet. In the first class there were forty-three subjects, concerning whom it was remarked that they appeared younger than their age and were particularly distinguished by clear fresh complexions. In strength they showed no superiority over the subjects accustomed to a high protein dietary, but in endurance they exceeded the high protein feeders fifty to two hundred per cent. It was noted that the low protein feeders were able to endure work on the ergograph two or three times as long as the meat eaters.

These observations agree entirely with the results obtained by Professor Fisher in his experiments upon nine Yale students and upon forty-nine subjects about equally divided between flesh-eaters and flesh-abstainers. Professor Fisher has observed that the endurance of the flesh-abstainers was two or three times as great as that of the flesh-eaters, and notwithstanding the fact that the latter subjects were all skilled athletes in training while the flesh-abstainers were, for the most part, nurses and physicians whose habits of life

were altogether sedentary. Dr. Ioteyko also observed that the non-flesh eaters recuperated from fatigue far more quickly than did the meat-eaters.

With the aid of a student, V. Kipiani, a series of coefficients were worked out, by means of which the influence of various factors contributing to these results might be estimated. By means of these it was shown that the performance of the non-flesh-eaters was twenty times as much influenced by toxins as was that of the flesh-abstainers. The excitability of the central nervous system was four times as great in the meat-eaters as in the flesh-abstainers, while the utilization of carbohydrates by the flesh-eaters was only 75% that of the flesh-abstainers.

613.26

265

Record of Foods Consumed in 14 Days by ~~some~~ Sanitarium
Helpers.

	Men (237)	Women (40)
Number of meals (2 per day)	3496	3935
Average wt. 1st day of 150 men & 146 women	134.6	119.1
Average wt. 14th day	135.4	191.1 119

125 14 days

Amount of Food Consumed by Men in (3496 Meals)

	<i>actual weight</i> In Bulk		Solids in Ounces.		
	Pounds	Ounces	Proteids	Fats	Carbohydrates
Grains	2461.75	39388	3476.04	561.02	20420.64
Fruits	2343.28	37492.5	320.39	137.93	4533.12
Nuts	278.93	4463	535.30	1149.43	687.74
Vegetables	548.93	8783	278.55	77.16	1554.80
Legumes	375.00	6000	373.68	101.33	1231.70
Animal Products	210.37	3566	251.36	370.85	156.21
Totals	6218.26	99692.5	5235.33	2397.72	28584.22

140 14 days

Amount of Food Consumed by Women in (3935 Meals)

	<i>actual weight</i> In Bulk		Solids in Ounces.		
	Pounds	Ounces	Proteids	Fats	Carbohydrates
Grains	2989.43	41431	3565.21	774.66	22020.17
Fruits	2838.04	45408.75	393.07	162.53	5437.86
Nuts	169.56	2713	466.75	634.69	463.75
Vegetables	641.31	10261	316.76	95.52	1644.29
Legumes	449.50	7192	444.52	115.54	1477.46
Animal Products	137.25	2196	133.61	310.24	117.72
Totals	6825.09	109201.75 109201.75	5319.93	2093.18	31161.83

Daily Ration.

✓

Dr. Letherby states that ~~two~~ pounds of dry food are required to maintain weight and strength, basing his statements on observations made upon laborers, prisoners, and family diet, etc. According to Letherby the proportions required are 9 per cent fat, 22 per cent proteids or ~~starch~~ albumen, and 69 per cent starch and sugar; or approximately, 1/10 fat, 2/10 proteids, 7/10 starch and sugar.

Later observations made upon the natives of India, China, and Japan show that the amount of proteid matter required to maintain the wear and tear of the body is only 1/10. So that at the present time the proportion stands about as follows, 1/10 fat, 1/10 proteids, 8/10 starch and sugar.

basis of

According to Letherby, on the ² pounds or 32 ounces dry food daily, this would require about 3 ounces albumen, 3 ounces fat, and 26 ounces starch and sugar.

The results of experiments made at the Sanitarium show these figures to be too high. Ten young men and young women lived two weeks on granose, with a small amount of fruit juice. Not one was able to eat a pound a day; none lost in flesh; several gained; one gained six pounds in one week, other smaller amounts. It is probable that a diet consisting of 1 1/2 ounces fat, 1 1/2 ounces proteids, and 13 ounces starch and sugar is sufficient for adults under ordinary circumstances. 2 ounces fat, 2 ounces proteids, and 16 ounces of starch and sugar must be considered capable of sustaining hard, muscular work.

Average No. of Oz. of Food Consumed each Day by Men.

Actual weight *water free*
~~In Milk~~ ~~Solids~~

		Proteids	Fats	Carbohydrates
Grains	22.55 ⁵³	1.988	.320	11.682
Fruits	21.44	.183	.078	2.593
Nuts	2.55	.306	.657	.393
Vegetables	5.02	.159	.044	.888
Legumes	3.43	.213	.057	.704
Animal Products	2.04	.143	.212	.089
Totals	57.00	2.992	1.368	16.349

Average No. of Oz. of Food Consumed each Day by Women.

Actual weight *water free*
~~In Milk~~ ~~Solids~~

		Proteids	Fats	Carbohydrates
Grains	21.05	1.812	.393	11.141
Fruits	23.07	.199	.082	2.763
Nuts	1.37	.237	.322	.235
Vegetables	5.20	.160	.048	.835
Legumes	3.65	.225	.058	.750
Animal Products	1.11	.067	.157	.059
Totals	55.45	2.700	1.060	15.783

	Men	Women
Per cent of Proteids per day	14.4	13.7
" Fats per day	6.6	5.5
" Carbohydrates per day	79.0	80.7
	100.0	100.0

	Men	Women
Proteids per day in grams,	89.7	81
Fats do.	41	31.8
Carbohydrates do.	490.4	473.4

	Men	Women
Calories of heat per day for proteids	448500	405000
do. fats	369000	286200
do. carbohydrates	1961600	1893600
Total number of calories per day,	2779100	2584800

450	400
370	285
1960	1890
2780.00	2575
<u>2,800,000</u>	<u>2,606,000</u>

aw
 94 | 7
 36 | 3
 180 | 40
 600 | 50
 600
 48
 36
 84