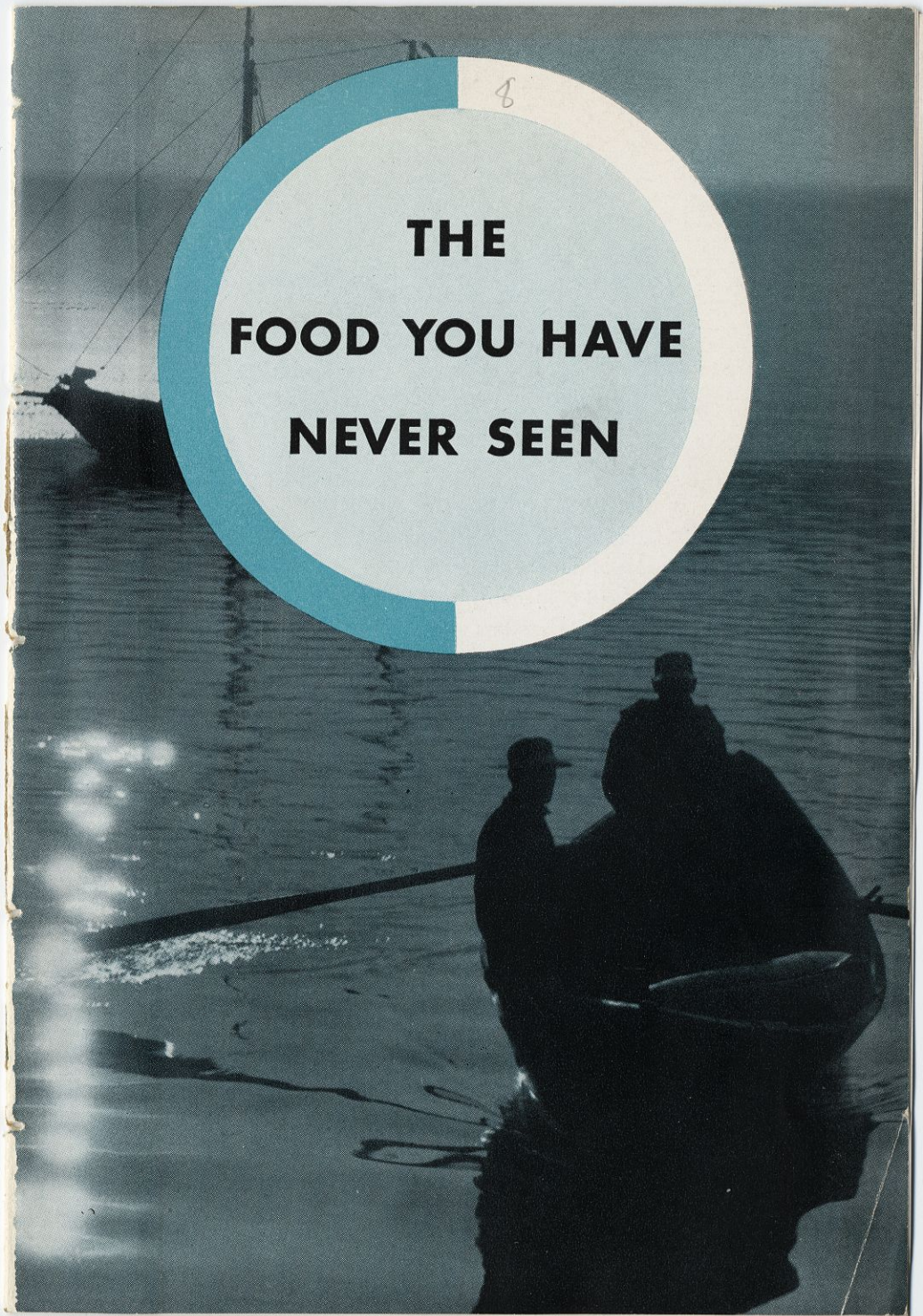
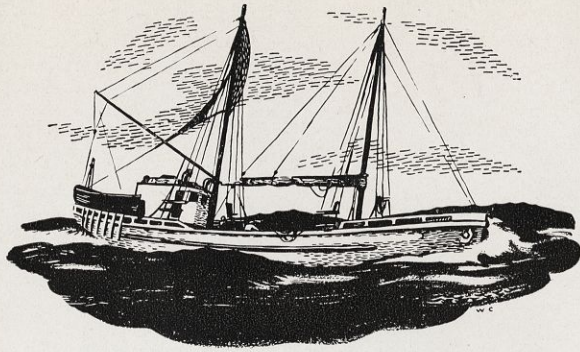


**THE
FOOD YOU HAVE
NEVER SEEN**





IN PRESENTING the story of the Vitamins and of Abbott's Haliver Oil, it cannot be too strongly emphasized that your physician—and only your physician—should be your guide in matters concerning your family's health. The sole purpose of this booklet is to show the importance and functions of the Vitamins so that you may cooperate more fully and intelligently with your doctor's advice.



Your prescription druggist is your doctor's right hand man. Good druggists make it a point to have Abbott's Haliver Oil in their prescription departments at all times.

THE FOOD

You Have Never Seen

A story of six vitamins and the part they play in the health of your family

VITAMINS are as old as the world itself. Yet our knowledge of them dates only from the dawn of the Twentieth Century. The story of their discovery is a fascinating romance at which we can only hint in these brief pages.

You have never seen a vitamin. You may probably never touch, taste or smell them. Yet vitamins are present in the food you eat, and in the milk you drink. Human life would be impossible without the friendly aid of vitamins.

THE DRAMATIC DISCOVERY OF *Vitamins*

In the Fall of 1897, Dr. Christian Eijkman, a young medical officer stationed at a Dutch prison camp in Java, was deeply concerned by an epidemic of beri-beri, a scourge that had ravished tropical countries for more than two thousand years. Beri-beri is the Sinhalese word for weakness, and up to that time was generally believed due to malarial poisoning or infection, although no germ could be discovered.

Eijkman observed that chickens fed on rice left over from the prisoners' meals became ill with a disease strangely similar to beri-beri in humans. This led him to the then radical theory that the disease was in some way related to diet. For a long time he experimented in the belief that there was some toxic substance in the rice which caused the distressing condition. Only after many false steps did the Dutch

physician finally stumble upon the truth. It was not that the polished rice contained an injurious substance, but that it *did not* contain a mysterious vital element present in the silvery coating or pericarp of the rice. By feeding these rice skins or "polishings" to fowls at the point of death from this weird disease, Eijkman was able to bring about almost miraculous recovery. Later, rice bran fed to victims of beri-beri was found to produce highly satisfactory results.

The new-found element was incredibly potent, but present only in microscopic quantities; indeed Dr. Eijkman is said to have written an associate at the time that a ton of whole rice might contain not more than ten grains of the precious substance.

HOW *Vitamins* GOT THEIR NAME

As so often happens, a number of scientists, working independently, made discoveries which closely paralleled those of Eijkman. Fifty years earlier, Magendie, the French physiologist, in his experiments in feeding animals, had been very close to the secret of the vitamin. And at Cambridge University, in England, Dr. Gowland Hopkins, a contemporary of Eijkman, was conducting tests which led him to believe that milk must contain "an unknown substance essential in nutrition."

It was Casimir Funk, a Polish chemist, who gave a name to the newly-discovered substance. At the time he believed he had succeeded in isolating it in pure form. Because his method was that used in separating organic bases of the type called *amines*, he called it the life *amine*, or *vitamine*. When it was later proved that Funk had not succeeded in isolating the active substance, the chemical name was, of course, no longer applicable; but it had gained such general acceptance that it was retained, with an amputation of the final letter.

NOT A FAD, *But a food*

There are six basic elements involved in complete nutrition—carbohydrates, proteins, fats, water, minerals and vitamins. Of the first four relatively little need be said here. There is, of course, no

intention of minimizing their importance; but authorities have found that with a proper balance of vitamins, those elements which may be reckoned in calories (i. e., carbohydrates, proteins and fats) will practically take care of themselves.

There are at least six vitamins of which science has definite knowledge—A, B, B₂ or G, C, D and E. The attributes of each are set forth in a subsequent section of this book.

It cannot be too strongly emphasized that the term "vitamin" is not a popular catch-phrase. Vitamins have no relation whatever to passing health fads or fancies. The discovery of vitamins, and the development of our knowledge concerning them, is thoroughly authenticated by foremost medical authorities.

The somewhat general conception of vitamins as mysterious energizers that add stimulus or "pep" is to be deplored. Actually, vitamins have no such province. They are not to be regarded in the nature of a "tonic," but as essential food elements. It is only when vitamins are properly present in the diet that metabolism (i. e., transformation of food into living tissue) may be obtained. Vitamins permit the efficient use of our other nutrient factors—carbohydrates, fats, proteins and minerals.

An insufficient quantity of any specific vitamin in the diet for a prolonged time will result in a pathological condition which enables a physician to determine which vitamin is missing. A chronic or serious lack of a certain vitamin will bring about symptoms of one of the so-called "deficiency" diseases—scurvy, beri-beri, pellagra, rickets and xerophthalmia. All of these diseases are readily induced by dietetic experiments on animals in the laboratory, but, with the exception of rickets and, in the South pellagra, are relatively rare among humans in this country.

Less serious, but far more common, are the disorders arising from a lack of sufficiently large quantities of the vitamins to maintain a truly high degree of health. Dental disorders, under-nutrition, poor appetite, lack of resistance to some diseases, bone defects in children and adults, intestinal sluggishness, lack of energy—these and other conditions are frequently the result of an intake of vitamins barely sufficient to prevent more serious troubles.

YOUR *Child's Health* IS IN YOUR HANDS

While any normal, well-balanced diet should supply at least the absolutely necessary quantities of each of the vitamins, yet periods of unusual strain place an unusual drain upon the body's resources, and vitamins in concentrated form become an essential addition to the diet. This is especially true of those important Vitamins A and D. It is the mission of A to aid in preserving the normal function of the cells of the body, thus increasing resistance against certain infections, and to promote body vigor and growth. Vitamin D permits the body to make proper use of calcium and phosphorus, the building materials for bones and teeth.

While these two vitamins may aid every human being to gain and retain robust health, they are the particular friends of young children and of prospective and nursing mothers.

Not infrequently we see ill-nourished children of whom we say "they are growing too fast for their own good." It would be more accurate to say that the child isn't getting sufficient vitamins to keep pace with its growth. Any mother would quite naturally resent the inference that her well-fed children are starving; yet in a sense that may be precisely the situation. To meet the increased demands of rapid growth, the diet should be supplemented by important vitamins in concentrated form.

And this condition is equally applicable to the prospective and nursing mother. Both before and after birth of the child, her system demands vitamins in quantities that ordinary food cannot supply.

Medical men have always sensed the need for "something" to supplement the normal intake of food. For centuries, in such conditions, they have turned to cod liver oil. Though early practitioners lacked scientific reason for their faith, we know now that the oil proved highly beneficial because it is a rich source of Vitamins A and D.

But cod liver oil has its drawbacks. It must be taken in relatively large quantities. Children and adults rebel at the nauseating doses; expectant mothers often experience difficulty in taking and retaining a sufficient amount of the oil. And fortunately these ordeals are no longer necessary.

Scientists have discovered that the liver of another fish—the halibut—contains these identical vitamins in a far more concentrated form. This oil is now available in Abbott's Haliver Oil. Announcement of this discovery was made to the medical profession in January, 1932. Some conception of its potency may be gained from the fact that ten drops is equivalent in vitamin content to not less than four teaspoonfuls of commercial cod liver oil. It is available either in liquid form or in tiny, soft capsules, scarcely as large as the eraser on the end of a pencil.

Vitamin A

Vitamin A is found in butter, egg yolk, cream and milk; but, the richest sources, by far, are the fish liver oils. Certain vegetables contain a yellow pigment, carotene, from which Vitamin A can be formed in the body. Not all higher animals can utilize carotene for Vitamin A. It is uncertain whether carotene is an adequate source of Vitamin A for human nutrition. Yellow and green vegetables, such as carrots, sweet potatoes and spinach, usually contain more carotene than others. But true Vitamin A, as available in liver oils, is colorless.

Because early experiments led to the discovery that Vitamin A has the power of stimulating growth, it is still occasionally referred to as the growth-promoting vitamin. However, later developments have brought about the knowledge that *all* vitamins are essential to growth. Where a diet is deficient in any one, growth is impaired.

We now know Vitamin A as the vitamin which promotes health and vigor, strengthening the membranes and tissues, thus aiding in the resistance to general infections. It is of possible value in preventing the common cold. Thus you can readily see the great importance of this vitamin in the maintenance of good nutrition and health.

Many persons need more Vitamin A than is ordinarily supplied in a normal diet. This surplus is therefore obtained from commercial preparations. Cod liver oil has long been recognized as a satisfactory source, but recently it has been found that the oil of halibut livers (known to the medical profession as Haliver Oil) is far richer in Vitamin A. This naturally makes possible much smaller doses, in liquid or capsule form.

Functions and sources of VITAMINS A, B, B₂ (or G), C and D

VITAMIN A

Promotes Growth and Body Resistance

Promotes health and vigor. Aids in building resistance to general infections and possibly to colds, by strengthening the membranes and tissues.

RICHEST SOURCES:

Haliver Oil Cod Liver Oil

FOOD SOURCES:

Vegetables and fruits containing minute amounts of Carotene or other pigments of value only if converted into Vitamin A.

Apricots	Cream
Artichokes	Egg Yolk
Asparagus	Kale
Avocados	Lettuce
Bananas	Liver
Broccoli	Oranges
Brussel	Oysters (<i>raw</i>)
Sprouts	Peaches
Butter	Peas (<i>green</i>)
Cabbage	Peppers (<i>green</i>)
Carrots	Prunes
Celery	Pumpkin
Chard	Salmon
Cheese	Spinach
Corn (<i>yellow</i>)	Squashes

VITAMINS B and G

Stimulates Appetite and Digestion, Promotes Growth

Required by the mother for normal reproduction and lactation. Protects from some nerve diseases (beri-beri, polyneuritis). *Vitamin B₂* (also called Vitamin G) usually found in combination with Vitamin B prevents pellagra, and appears to be essential for normal blood.

RICHEST SOURCES:

Kidneys	Malt Extract
Liver	Wheat Germ
Liver Extract	Yeast

FOOD SOURCES:

Beans	Milk
Bran	Peas
Eggs	Potatoes
Meat	Whole Cereals

PRESENT IN SMALL AMOUNTS IN:

Apples	Carrots
Asparagus	Cauliflower
Bananas	Celery
Beets	Cheese
Beet Greens	Dates
Cabbage	Fish
Cantaloupe	Grapefruit

String Beans	Water Cress
Sweet Potatoes	Whole Milk
Tomatoes	Yellow Turnips

VITAMIN C

Required for Normal Tooth Formation and Healthy Gums

Protects from scurvy

RICHEST SOURCES:

Cabbage	Orange Juice
Grapefruit	Peppers
Juice	Spinach
Lemon Juice	Tomatoes
Lettuce	Tomato Juice

OTHER FOOD SOURCES:

Celery	Raspberries
Citron Juice	Rhubarb
Lime Juice	Strawberries
Peaches	Tangerines
Pineapple	Turnips
Pineapple Juice	

PRESENT IN SMALL AMOUNTS IN:

Apples	Milk (<i>Variable</i>)
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Grapes	Parsnips
Lemons	Peaches
Lettuce	Pineapple
Nuts	Prunes
Onions	Strawberries
Oranges	Tomatoes
Oysters	Turnips

VITAMIN D

Required by the Pregnant Mother and Growing Child to Prevent Rickets

Regulates the absorption from the food, and the use by the body of the bone-forming elements—calcium and phosphorus—to build strong bones and teeth.

RICHEST SOURCES:

Cod Liver Oil	Sunlight
Haliver Oil	Vioosterol

FOOD SOURCES:

Egg Yolk	Salmon
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PRESENT IN MINUTE AMOUNTS IN:

Butter (<i>Variable</i>)	Whole Milk (<i>Variable</i>)
Clams	
Oysters	

Bananas	Pears
Beans	Peas
Beets	Potatoes
Carrots	Pumpkin
Cauliflower	Sweet Corn
Cucumbers	Turnip Greens
Endive	Watercress
Grapes	Watermelon
Grape Juice	

Vitamins B AND B₂ (or G)

The history of Vitamin B takes us back to Eijkman and his early experiments. For this is the vitamin which he first discovered in rice polishings. It was called the beri-beri or anti-neuritis vitamin (beri-beri being a form of degenerative neuritis) and given the designation B to distinguish it from the fat-soluble, growth-producing vitamin, which was known as A. Later, it was found that what we had thought to be a single vitamin was at least two distinct substances, one anti-neuritis, the other anti-pellagic. For a time these were known as B₁ and B₂, and this nomenclature is still followed in British medical literature. In America, however, we prefer to call the latter Vitamin G, so named in honor of Doctor Goldberger, of the United States Public Health Service, who discovered that Vitamins B and G are two distinct substances.

Vitamins B and G stimulate the appetite, aid digestion by permitting better absorption and assimilation, and help to prevent and correct intestinal sluggishness. Thus they are valuable in utilizing foods to their full extent; overcoming constipation; gaining weight, and in promoting a general feeling of well-being. They help to maintain the normal condition and tone of muscles and nerves; Vitamin G is necessary to the constant production of normal blood, and also aids in preventing a certain type of sore mouth and tongue, as well as a type of inflammation of the skin of the wrists and hands, known as pellagra and quite common in the Southern States.

Vitamin B is apparently taken into the body ready-formed and ready for use. Vitamin G may be partly or entirely converted in the stomach before absorption. They are both present chiefly in eggs, liver, meat, milk, certain vegetables, yeast, malted grains and whole grain cereals. These two vitamins always occur together in nature and are inter-related in their function.

Lack of Vitamins B and G is evidenced by poor appetite and thus, indirectly, loss of weight. Stomach and intestinal muscles become flabby, which leads to a decrease in bowel activity and to constipation. It brings about a weakness of the heart muscle, and an unstable condition of the nerves. Complete absence of Vitamins B and G leads, as we have seen, to beri-beri, a generalized paralysis. In infants, an unusual tendency

to crying and fretfulness may often be traced to a deficiency of these vitamins.

Unlike Vitamins A and D, the B and G vitamins cannot be stored in the body for future use, in periods of unusual requirement. It is for this reason that symptoms of B and G deficiency become evident quickly. During pregnancy and lactation, women should have an extra allowance of Vitamins B and G. Babies and growing children, too, require an abundant intake of these vitamins.

Vitamin C

Vitamin C is supplied abundantly in citrus fruits (oranges, lemons, grapefruit, etc.), other fresh fruits, tomatoes and fresh vegetables. Being relatively unstable, Vitamin C does not withstand a long period of storage. It is not yet commercially available in a highly concentrated form. This vitamin prevents and cures scurvy, and is concerned with the formation and maintenance of sound gums and teeth. It is called the anti-scorbutic (anti-scurvy) vitamin. The diet should be planned to include a good supply of Vitamin C daily.

Vitamin D

In many respects, Vitamin D is the most fascinating of all the vitamins. Speaking scientifically, this substance is irradiated ergosterol—that is ergosterol that has been subjected to the action of ultra-violet rays (the rays in sunshine that cause sunburn). Ergosterol itself is a chemical compound containing carbon, hydrogen and oxygen. It is naturally present in many food substances. When ergosterol is taken into the body, it is deposited in the sub-surface cells of the skin, whence the action of ultra-violet rays in sunbeams converts it into Vitamin D. That is why Vitamin D is popularly known as the “sunshine” vitamin.

The artificial existence which most of us lead, and our practice of “bundling up” in several layers of clothing, makes it impracticable for the sun’s rays to convert considerable deposits of ergosterol into vitamin form. Thus we must secure much of our Vitamin D in concentrated commercial form. Commercially, Vitamin D is obtained either from a natural source, such as the oils of codfish liver or halibut liver—or is

prepared from yeast. These fish liver oils contain natural Vitamin D as such. It is obtained from yeast as ergosterol, which is then subjected to the rays of an ultra-violet lamp, becoming irradiated ergosterol, or "synthetic" Vitamin D.

Irradiated ergosterol is known professionally as Viosterol. It is prepared by Abbott Laboratories under license from the Wisconsin Alumni Research Foundation and is sold to the medical profession as Viosterol in Oil containing Vitamin D only, and in conjunction with the fish liver oils furnishing both Vitamins A and D. Thus, the term Haliver Oil with Viosterol 250 D indicates a refined oil of halibut livers rich in Vitamins A and D to which has been added more Vitamin D in the form of Viosterol.

The reference to 250 D means that it contains the number of Vitamin D units necessary to accomplish a certain degree of healing in test animals suffering from rickets. Naturally, when Vitamin D is taken into the body as such it is ready for immediate use.

Just as Vitamins B and G occur together in nature, so Vitamins A and D always accompany each other in natural fats and oils, and they are also inter-related insofar as nutritional function is concerned.

As we have previously observed, Vitamin D enables the body to use calcium and phosphorus normally. These three factors are necessary to the formation and maintenance of strong hard teeth and bones. By enabling the body to use calcium and phosphorus normally, Vitamin D prevents rickets, spasmophilia (or infantile tetany) and osteomalacia. Spasmophilia and rickets occur in infancy and childhood. Osteomalacia occurs chiefly in adults, in expectant or nursing mothers.

Vitamin D is of the greatest importance to prospective or lactating mothers, who not only use it to maintain their own physical health, but pass it on to their babies to enable them to develop properly. In addition, it should be administered daily under the physician's direction to nursing babies and is highly important throughout childhood and adolescence.

Vitamin E

This vitamin is concerned with the maintenance of reproductive ability and vitality. It is present in a wide variety of foods,

indeed, for laboratory experiments with animals, it is difficult to work out a diet in which Vitamin E is *not* present. Commercial preparations are not available, and probably are not necessary.

A BRIEF SUMMARY OF

Vitamins and the Part they Play

EACH of the six vitamins has its mission to perform in the body. None can be omitted or slighted without deleterious effects. They must be supplied daily in adequate amounts.

The vitamin requirements of each individual are different and no set rules and regulations can be laid down. For some persons, a well-balanced diet may supply sufficient vitamins. However, virtually all persons at some time—and some persons at all times—require a supplemental supply of any one or more vitamins, which can be supplied only in concentrated or commercial form. It cannot be too strongly emphasized that to enjoy a high degree of health and the sense of well-being that accompanies buoyant health, it is necessary that the intake of the various vitamins be much greater than the amounts barely necessary to prevent typical deficiency disorder symptoms.

If the diet is deficient for the individual, it will be reflected in his physical condition. There is no means of determining one's exact needs otherwise. We do know, on general principles, however, that pregnant and nursing women and young children are invariably benefited by supplemental vitamin supplies—especially of A and D. We also know that countless other persons might attain a higher degree of health and vigor if their diets were enriched with greater amounts of the vitamins.

It is important to remember that one vitamin cannot supply the needs for another, or take the place of another in the body. There is no danger of consuming too many vitamins in a balanced diet. Physicians are studying the results of scientific nutritional research and should be consulted.

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THE story of the vitamins is not yet complete. There is still much to be revealed. Scientists are constantly testing new theories, developing

new principles. But when we reflect that scarcely a quarter of a century has passed since the first facts on vitamins came fresh from the laboratories to an astonished world, we must agree that amazing progress has been made. Already, with the knowledge at the command of the medical profession, we can look confidently toward the virtual banishment of malnutrition from the civilized world.

Halibut

THE INTERESTING FISH THAT CANNOT LIVE IN AN AQUARIUM

*and how science has found in its liver a rich
new source of two of our most valuable vitamins*

THE halibut (hippoglossus) derives its name from the word *holy*. In olden times it was the fish set apart for the feasts of holy days. We know it in these times as perhaps the largest of true fishes—specimens weighing 400 pounds are not uncommon, and (although it may be a “fish story”) there is a record of a halibut caught off the coast of France that weighed 720 pounds.

The halibut spends its days in deep northern waters (50 to 500 fathoms; often burrowing in the sands more than a mile below the surface of the water). It quickly dies when exposed to air. Because of the difficulty of taking the halibut alive, and the fact that it can thrive only in deep, cold water, you will not find this fish in the aquariums. However, there are usually on exhibition other members of the same (flounder) family, some of which share with the halibut that remarkable characteristic known as the “migrating eye.”

When the fish is young, the eyes are normally placed, one on each side of the head. As it matures, however, the left eye begins a process of migration, and in an adult halibut, we find *both* eyes on the right side. The fish then lies and swims on its left side, which is white, while the right becomes a rich dark brown.

Halibut Liver — RICHEST KNOWN AVAILABLE SOURCE OF VITAMINS A AND D

Ever since the discovery of Vitamins A and D, Abbott Laboratories have been engaged in the search for new and richer sources of these vitamins.

Cod liver oil had long been regarded as the leading natural source, but the studies made by Rosenheim and Webster and by Schmidt-Nielsen, led to a belief that the oil of halibut livers might have a far greater content of Vitamin A. Experimental supplies of fresh, healthy halibut livers were obtained, and a series of bio-assays conducted, of halibut liver oil, rendered by a special process. It was thus discovered that the Vitamin A potency of Haliver Oil is *more than 80 times* that of high-grade, medicinal cod liver oil. And, moreover, its Vitamin D content is usually 20 or more times greater than that of cod liver oil.

Obviously, so rich a source of these important vitamins, available in a convenient form, will result in improved nutrition.

Due to the richness of Haliver Oil, as compared to cod liver oil and cod liver oil concentrates, only a fraction of the dose is required to furnish an equivalent amount of Vitamins A and D. This does away with the difficulty of administration, and the nausea and gastric distress resulting from cod liver oil.

In Abbott's Haliver Oil with Viosterol 250 D, the halibut liver oil has been adjusted to a Vitamin A potency more than *80 times* that of high-grade cod liver oil in order that the convenient dose of 10 drops (3 minims) may equal at least 4 teaspoonfuls of cod liver oil. By supplementing its natural Vitamin D content with Viosterol (irradiated ergosterol) the anti-rachitic potency has been increased to equal that of Viosterol 250 D. The dosage of a few drops may be administered once a day, or in divided doses several times daily. Or it may be given in the convenient form of gelatin capsules, equivalent to 3 minims (10 drops) each. These capsules are very small and easy to swallow.

Consult your physician in regard to the use of the scientific nutritional research products of the Abbott Laboratories.



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