

The Pacific Coast Oil Industry

History, Evolution and Progress of the Vegetable and Fish Oil Trades

BY P. W. TOMPKINS

Continued from January Issue

Varieties of Oils Imported

A brief sketch follows of various oils imported on the Pacific Coast. It is not intended to cover the entire field, but merely the better known and those which have come most to our attention.

COCOANUT OIL was one of the first oils of any importance to be imported to the Pacific Coast, coming in the early nineties. Supplies arrived from Australia in very poor containers, representing old wine, olive oil and beer barrels, while those from Ceylon, via Hongkong, were packed in hogsheads and puncheons, and arrived in extremely poor condition with heavy leakage.

The supplies of cocoanut oil from Australia and Ceylon increased gradually with more modern packages being used, up to the beginning of the World War, when the Pacific Coast ports were the chief points of entry for Oriental products. During this period tremendous quantities of cocoanut oil were imported from Australia packed in modern second-hand barrels; from Java and Celebes packed in second-hand kerosene oil tins and later in new American barrels; from Indo-China packed in second-hand kerosene oil tins; from Japan packed in second-hand kerosene oil tins and in American barrels and from the Philippine Islands in barrels and drums, and also in bulk in steamers' deep tanks. One plant at San Francisco had storage capac-

ity for cocoanut oil alone of considerably over 4,000,000 gallons (approximately 15,400 short tons), and these tanks were kept full most of the time.

During the period of these heavy imports, cocoanut oil was free of import duty, but with the passing of the import tariff of 1922, which assessed an import duty of 2 cents per pound, the imports from all countries other than the Philippine Islands ceased. At the present time large quantities of cocoanut oil are imported through Pacific Coast ports from the Philippine Islands in steamers' deep tanks, which is the cheapest and most efficient method of handling and transportation. The principal uses are for edible products and soap making, particularly "salt water" soap.

There are also several cocoanut oil crushing plants located in California and one in Oregon, and occasionally some of the cottonseed oil mills will crush copra in the off season.

CHINA WOOD (TUNG) OIL attracted the attention of San Francisco importers as far back as 1889, the first imports being brought over by sailing vessels about 1890 and 1891. At that time, it was packed in the original Chinese containers, that is baskets, paper lined on the inside. A combination of hogs' blood mixed with a certain quantity of chunam (otherwise known as shell lime),

made a very good and powerful adhesive which held the paper lining firmly, these shipments arriving in perfect condition and without leakage. Other containers represented the Chinese oil tubs, made of soft wood, without bilge and with a set-in cover, which tubs were stowed in

out the United States among paint and varnish manufacturers, primarily as a substitute for linseed oil. This increased the demand, as is reflected in the comparison of the original selling price of about 2½ cents per pound with the high of this year of about 30 cents per



Near view of one of many conveyors for moving and burning oil-soaked wooden cases

the vessel in an upright position to prevent leakage.

China wood oil was then sold locally on the coast as soap stock at about 2½ cents per pound, the importers at that time not knowing that wood oil was more valuable for other lines of industry, which was discovered later on.

Continued efforts to introduce wood oil for purposes other than soap making were eventually successful, creating a demand through-

out the United States among paint and varnish manufacturers, primarily as a substitute for linseed oil. This increased the demand, as is reflected in the comparison of the original selling price of about 2½ cents per pound with the high of this year of about 30 cents per

ound, and today China wood oil constitutes one of the leading foreign commodities imported through Pacific Coast ports. It is the base oil in many varnishes, and is often preferred to linseed oil for many purposes.

In 1910 one of the local importers established a cooperage shop in Shanghai, with about fifty Chinese coopers under the supervision of an American expert, with a view to introducing American made up-to-

date barrels. The firm in question shipped to China huge quantities of high grade American barrels knocked down. This undertaking revolutionized the transportation of wood oil to the United States. Previous to the introduction of the new American barrels, wood oil was shipped in second-hand made-over European barrels, which resulted in a tremendous loss through leakage. During the World War period, tins were also used, but now practically all shipments arrive in bulk in the deep tanks of steamers, though recently, owing to the unsettled state in China and holding of the tank barges on the Yangtze by the Chinese, considerable has been again arriving in drums and a little in barrels.

China wood oil paid an ad valorem duty of 25% as expressed oil up until 1897, when importers claimed that it should be free of import duty and under the classification of nut oil, nut oils being free of import duty. It was placed on the free list in 1903. The annual imports now amount to between 80,000 to 100,000 tons, the bulk of which passes through Pacific Coast ports.

COTTONSEED OIL from the Orient first appeared in San Francisco as far back as 1908, at which time the import duty was 8 cents per gallon. The oil brought forward was refined, but of a lower grade than the American Summer Yellow Cottonseed Oil. It was packed in new five gallon tins—two tins to the case—and originated in China. The Pacific Coast importers seeing an opportunity to develop a large business if the duty of 8 cents per gallon was removed, and the quality improved, set to work to have the commodity placed on the free list and were eventually successful, which resulted in

a very rapid increase in imports.

Shortly after the removal of the 8 cents per gallon duty on cottonseed oil came the Oriental crude cottonseed oil, which developed into an article of very large importation. Then shipments were always made in American new oak barrels and the commodity found its outlet on the Pacific Coast and as far east as the middle western states. A few shipments have arrived in bulk in steamers' tanks. The refined oil is used for edible purposes, but being unequal in quality, it does not compete much with the domestic product. The crude oil is used in soap making or is refined in this country for edible purposes.

Fluorescence in the refined oil was always present, and is characteristic of the Oriental product as well as of the oil from the Indian cottonseed.*

In 1910 heavy shipments of the refined oil began to come forward in new American oak barrels and the quality gradually improved, thus permitting large quantities to be sold on the Pacific slope annually. Imports of Oriental cottonseed oil steadily increased until the passing of the Tariff of 1922, when an import duty of 3 cents per pound was placed on this product, acting as an embargo and practically terminating all imports of both crude and refined cottonseed oil.

The domestic production of cottonseed oil on this coast is developing steadily in connection with the cotton industry in California and Arizona. According to a survey made by the research department of the California Development Association in 1926, there were 16 cottonseed mills operating in California and 7 in Arizona. About 400 tank cars of cottonseed oil are produced in California annually,

which is principally consumed locally in the manufacture of shortening, also as salad oil, a small portion as cooking oil, and some in soap manufacture.

SOYA BEAN OIL importation originated on the Pacific Coast, commencing about 1908 and arriving in second-hand kerosene tins. At that time the oil was dutiable and the importers, seeing a large business opportunity if the duty was removed, were successful in having it placed on the free list.

as 1910 started to ship it in tank cars across the American continent, which necessitated the installation of tanking facilities in San Francisco. This method of transportation was most economical, as well as being more satisfactory to the consuming trade. With the European war, the imports of soya bean oil showed an enormous increase, shipments then being brought forward not only in new American oak barrels, but also in tins, as well as in bulk in the deep tanks of steamers.



Bales of flattened coal oil tins, representing millions of cans ready for return to the Orient

The early shipments of soya bean oil, packed in tins and cases, were sold to soap manufacturers.

With the removal of the duty in 1909, the imports increased rapidly and the packing changed from tins to new American oak barrels. This oil found a ready market throughout the United States, and the Pacific Coast importers as far back

These heavy arrivals continued until the tariff of 1922, which removed soya bean oil from the free list and placed it on the dutiable list at the rate of 2½ cents per pound, thus reducing imports tremendously.

Soya bean oil continues to be an article of import but only spasmodically. All shipments now come forward in bulk in steamers' deep

tanks in quantities of approximately 500 to 800 tons at one time. Some of this oil is consumed in this country, while a large portion finds its way into Canada.

Some of the early arrivals of soya bean oil originated at Shanghai, Hankow, Newchang and Dalny (Dairen), but the Manchurian product shipped from Dairen constitutes the entire present import. Most of the oil is pressed, and is consumed by the soap industry, though some is used

early refining it for edible use.

PEANUT OIL, as already mentioned, was the first Oriental oil to be imported on the Pacific Coast, and until the World War was brought in chiefly for Chinese consumption and was packed in 18-lb. tins, as it still is for that trade. During the war period, as with most other Oriental oils, they began shipping it in second-hand five-gallon cans, as well as in barrels and drums, and later a little in bulk. Imports continued until the



Many thousands of bean oil barrels as far as eye can see at Dairen, awaiting shipment to the Pacific Coast—September, 1917

in the manufacture of paint. During the World War considerable was used for edible purposes, and at present when the price of cottonseed oil is high enough to more than offset the duty on soya bean oil, the latter is imported for edible purposes as a substitute for the former. However, it is not as satisfactory as some other oils for such use owing to the difficulty of prop-

Tariff of 1922 went into effect, when a duty of 4 cents was imposed, which stopped all but occasional shipments to this country, although considerable still enters Pacific Coast ports in bond for Canada, and is carried in bulk in ships' deep tanks.

PERILLA OIL is another of the Pacific Coast initiates. When first brought forward it was known as

soozoo oil, also egoma oil, and later took its proper name of perilla. The first shipments about 12 or 15 years ago, were cold pressed oil of an extremely light golden straw color, originating in the Orient. Duty on the early shipments was assessed at the rate of 25% ad valorem as an oil expressed from seeds, but it later was discovered by a San Francisco importer to be produced technically from a nut, and in 1916 was placed on the free list as a nut oil.

Shipments of perilla oil since the removal of the duty have increased, but the oil coming forward now is hot pressed and slightly darker in color. There are two qualities imported now—one known as FAQ (fair average quality) of the season, with no guarantee as to the breaking point and the other guaranteed not to break below 600 degrees Fahrenheit. Until recently perilla oil was always packed in good second-hand barrels, but of late importers are getting away from the use of barrels and are bringing it forward in about 500-ton lots in steamers' deep tanks, this being the most economical method of transportation. The oil upon arrival is pumped into storage tanks for distribution or directly into tank cars for trans-continental transportation. It is used in the manufacture of paints, varnishes, enamels and printers' ink.

LINSEED OIL first became an article of import on the Pacific Coast after the beginning of the World War, during which period fairly large quantities arrived in second-hand tins, also in new and second-hand barrels; the importations being practically all consumed by the paint and varnish industry on the Pacific Coast. Since the war, imports from the Orient have dis-

continued, while spasmodic imports have been made from England and the Continent, arriving in bulk in deep tanks of steamers in quantities of 500 to 800 tons. Bulk shipments have also been received from the Atlantic Coast.

There is some linseed oil produced for local consumption around San Francisco Bay from linseed imported from the Argentine.

PALM OIL became an article of import to San Francisco in the early nineties but in rather small quantities until fairly recently, being used by soap and candle manufacturers, also for compounding lubricants and in the tin plate industry. The only grade brought forward was the Lagos (Africa) palm oil, which arrived in hogsheads containing about 825 lbs. each. Such shipments usually came to this country via Liverpool.

Sumatra (D. E. I.) palm oil first made its appearance on this coast about a year ago, being packed in new and second-hand American barrels. Recently some bulk shipments have been arriving by direct steamers from country of origin, being shipped in steamers' deep tanks of a capacity of about 500 to 900 tons, and arriving in perfect condition.

Sumatra palm oil is much lower in fatty acids than the Lagos product, due to more scientific methods of production, and is being used to an increasingly large extent in the manufacture of food products.

HEMPSEED OIL from Manchuria and Japan was another oil which was imported in second-hand tins. The first arrivals appeared about 1910 and imports were only spasmodic until the time of the World War, when large quantities were imported packed in the same manner, and shipped from here in tank cars to overland points to be

used in the manufacture of paints, linoleums and some for special soap purposes. This oil would still be an article of import were it not for the duty of 1½ cents per pound which makes its importation prohibitive at the present time.

SESAME OIL was not imported to the Pacific Coast in any quantity until the period of the World War, when large amounts were brought forward from China in second-hand tins, as well as in barrels. This oil not only found a large consumption on the Pacific Coast, but was dumped into tank cars and shipped throughout the United States. Refined sesame oil makes one of the finest of edible oils, being preferred to olive oil in some quarters, but has never been popular in the United States in proportion to its merits. The grade of oil usually imported here was the crude and only suitable for industrial purposes, such as soap making, although some refined oil was used by the fish packers.

RAPSEED (COLZA) OIL has been an article of import with local import merchants for many years, but in limited amounts, except during the period of the World War, when huge quantities were imported in both tins and barrels and later dumped into tank cars for transcontinental transportation. The first imports date back to the early nineties, and the refined oil still continues to be an article of import, but to a limited extent. It originates in Manchuria and Japan, and is used principally after being blown in making certain heavy lubricating compounds.

CANDLE NUT or *LUMBANG OIL* came into prominence on the Pacific Coast during the World War, at which time several thousand barrels were brought forward.

The oil found a ready outlet locally and was also shipped throughout the United States in tank cars, and used in the paint, linoleum and varnish trades, likewise in some kinds of soap. It belongs to the same family as China wood oil, but comes from the Philippines. Because of the low price of linseed oil, for which it was a substitute, none has been imported for the last three years, and the nuts are no longer gathered.

CHINESE VEGETABLE TALLOW did not attract the attention of the Pacific Coast until the World War when it became an article of importation and it continues today to be a commodity of importance for soap manufacture and candle making on the Pacific Coast and elsewhere.

TEA SEED OIL from China, which was introduced by Pacific Coast importers, has been a spasmodic article of import since about 1910. The early shipments arrived packed in tins while the more recent shipments came forward in new American oak barrels. A 25% ad valorem duty keeps the importation of this oil down to a few tons yearly.

CHRYSALIS OIL, which is produced in Japan from the silk worm, claims San Francisco as its American birthplace. The first shipments arrived in 1910. The oil was packed in second-hand kerosene tins and was only suitable as a soap stock. For quite some years many thousands of cases of this oil were consumed on the Pacific Coast, the demand being much greater than the supply. Later on, experimental shipments were made to Germany, where it was found that the oil had certain qualifications which enabled the German buyers to pay more in the primary market than

could Pacific Coast importers. This eventually diverted practically all the supply of chrysalis oil to the German market, cutting off shipments to the Pacific Coast. In Germany this oil was refined and, if we are correctly informed, found its way into the silk industry.

LOOFAH OIL was never an article of large importation. It came from Japan and was used in the manufacture of soap. The first shipments in tins and cases appeared on the Pacific Coast about 1910 and only spasmodic shipments of 500 to 1,000 cases at a time were imported, which discontinued on account of the oil not being in favor for industrial purposes.

BEBE (INUKAYA) OIL appeared on the Pacific Coast about 1910, but only in a very small way, as the quantity available in the producing center (Japan) was so limited that it was not attractive to the importers. The small shipments that did arrive were packed in second-hand five-gallon tins and went into the soap kettle.

COQUITO and *COHUNE* (also termed *COROZA*) *OIL*—in former years spasmodic shipments found their way from Mexico to San Francisco. The oil being very similar to cocoon oil, readily went to the soap kettle. Sometimes it arrived packed in tins, sometimes in barrels and iron drums. Since unsettled conditions in Mexico, imports have been practically nil.

One of the difficulties in obtaining this oil in paying quantities was the removal of the thick husk and shell from the kernel, which formerly and to a considerable extent now, is done by hand by the natives until enough meat is collected for shipment or local crushing. Numerous machines and methods have been devised for this purpose, but most of them are only

partly satisfactory owing to the extreme hardness of the shell. One firm has been successful in perfecting a combined husking and cracking machine which first husks the nuts and then separates the kernels from the shells in a very satisfactory manner. A plant is being erected in Honduras where there is an abundant supply of nuts, and through their ability to handle quite a large tonnage, it is anticipated that considerable of this product should be available to Pacific Coast importers in the near future.

CASTOR OIL did not attract Pacific Coast operators to any extent until the period of the World War, during which time they imported large quantities from China, Japan and Manchuria, which found a ready market throughout the United States for rotary aeroplane engine lubrication, soap manufacture, etc., the best commercial grade being employed for aeroplanes. The oil arrived at ports of entry in both second-hand tins and in barrels, and after arrival was dumped into tank cars for transcontinental shipment. The rotary type of engine has practically been abandoned, therefore the demand has disappeared for this purpose.

KAPOK SEED OIL produced as a by-product of the kapoc fibre industry was shipped in small quantities during the World War from the Dutch East Indies in drums and cases and later a little from the Philippine Islands in barrels. It is consumed mostly by the soap industry and is very similar in properties to cottonseed oil.

WHALE OIL dates back to the early days when the American whaling industry was a very important factor on the Pacific Coast. In the early eighties there were about a score of vessels in the whaling

fleet, flying the American flag on Pacific waters, and by 1893 the number was nearly 50. Later on, the American whaling fleet decreased and then began the importation of Oriental whale oil in large quantities yearly, finding an outlet on the Pacific Coast, also being shipped in tank cars overland to supply the soap, leather, etc., industries. Importation of the oil continued until curtailed by high import duties, and in recent years local whaling has been resumed. Large quantities of No. 1 whale oil are used in this country for edible purposes after hydrogenation. There is one San Francisco company with two land stations in California as well as a floating factory and four killer boats, which produced about 250,000 gallons of oil last year. They have operated as far south as Mexico and north to the Alaskan waters. From Seattle another whaling company operates in northern waters, which is stated to have produced in 1926 about 1,000,000 gallons of whale oil. There are also Norwegian whalers operating off the coast of Mexico, but they are not permitted to whale in United States waters; their entire production, much of which is sold in Europe, is subject to export duty from Mexico and deliveries in the United States pay 6 cents per gallon duty. They also pay a concession fee to the Mexican Government.

SPERM OIL—the Japanese product represented quite a large article of import on this coast for several years for lubricating and other industrial purposes. The first shipments commenced to arrive about 1910, being packed in second-hand tins. Part of the oil was consumed locally and the balance dumped into tank cars and shipped to eastern points. The present high duty on

this oil is practically stopping all imports, but a small amount is produced on this coast.

FISH OILS—for many years, probably commencing about 1910, fish oils, such as herring, shark and sardine, were imported from Japan for Pacific Coast consumption. The oils arrived in second-hand tins and cases, and have various industrial uses. The importations were not large until about the time of the World War, at which time Pacific Coast importers did an enormous business in these products, dumping the oil upon arrival into tank cars for shipment to various points throughout the United States. Importing of these fish oils has been practically stopped by the heavy import duties.

There is, however, a thriving fish oil industry on this coast; production of sardine oil began at Monterey, California, in about 1915, and there are now some ten plants operating there. There are eleven plants at San Pedro, California, where the industry started in about 1918. The oil is a by-product of fish canning, and its principal source is the trimmings from the packs. Five or six hundred tank cars are produced in California each year. Sardine oil is used in the paint and varnish industry and sometimes employed as a substitute for linseed oil, and some of the oil is refined, deodorized and hydrogenated locally for edible purposes.

Besides sardine oil about 400 tank cars of herring oil is produced annually in Alaska. This oil being very high grade a large portion is hardened (hydrogenated) and used for edible and soap products. Two years ago the Canadian Government opened Vancouver Island to the reduction of pilchards, which is really a variety of sardine, and the first season we understand about 50

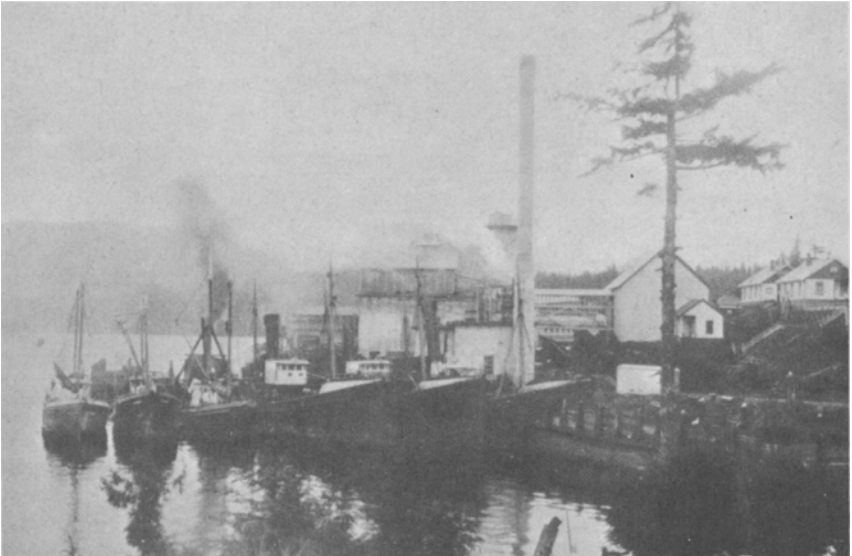
tank cars of pilchard oil were shipped, while last year the production was about 250 cars. There are also numerous other fish oils, such as salmon, dog fish, tuna fish, etc., produced on this coast in smaller quantities, the oils frequently being mixtures depending on the fish caught and packed at the time.

COD LIVER OIL has assumed considerable importance in the last few years on account of the public attention to vitamins. It is high in vitamins A and D and a large quantity is fed to poultry. Virtually all imports are from Norway and come in 30-gallon tin-lined casks.

CITRONELLA OIL from Ceylon first made its appearance on the Pacific Coast about the year 1890, and was at that time and for several years afterward packed in old bottles. At the present time both Java and Ceylon contribute to the requirements of importers, the oil now being packed in iron drums of

both 55- and 110-gallon capacity. It is used as a perfume in the manufacture of soap and is also very useful as a repellent for mosquitoes. It is a high and variably priced oil, the Java product, which is more choice, having sold at times in the past for considerably over a dollar a pound. The quantity imported, however, is rather small owing to the limited number of consumers on the Pacific Coast.

MOWRAH NUT OIL—during the early nineties several experimental shipments for soap making were made from Liverpool to the Pacific Coast, but this oil was not found to be competitive with other oils of similar character, though it is an important article of commerce in India where it originates. It is used there for edible purposes as well as having various technical uses, and considerable quantities are shipped to Europe. Of later years there have been no importations on this coast.



Modern Pacific Coast cannery and fish oil plant with its own fishing fleet in foreground