

# oil & soap

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## *The World's Fair and the Oil and Soap Chemists*

To those members of the American Oil Chemists' Society, who may possibly hesitate to take the time or bear the expense of a trip to Chicago to attend the Eighth Annual Fall Meeting, we wish to call attention to the outstanding exhibits which they will be privileged to see, not only by attending the Fall meeting, which is well worth while within itself, but by attending the 1934 edition of the World's Fair.

To those who will say, "Why, I saw the Fair last year, why should I see it again?" we answer in the vernacular, "You ain't see nothing yet," and you will find this very true because, especially as concerns those things of interest to the oil and soap chemist, we refer you to the new Ford Exhibit, which did not exist at all last year, and we refer you to the Swift, Armour and Wilson Exhibits, which are brand new. In fact, you will find that this is a bigger and better Fair in every way.

To those of you who "did the Fair" last year, we are pleased to announce that not only is the Fair scientifically better, but it is culturally improved in every respect. It is singularly true that most chemists are great music lovers, and the presence simultaneously of such great organizations as the Detroit Symphony Orchestra and Chicago Symphony Orchestra, and such wonderful bands as the Italian Military Band, Bachman's Million Dollar Band, etc., assures the music lover of special and unprecedented treats. At the Bridge of Service, you will find not only the Chicago Symphony Orchestra, but Jesse Crawford at the console of a mighty organ.

You will find the prices of food and everything else scaled down at the Fair this year. Everything is rea-

sonable and the jam and rush of hotel reservations has been very fortunately absent, this year.

In the scientific exhibits of the World's Fair of 1934 the soy bean, as a source of basic materials, is occupying a prominent place because of this bean's variety of economic appeals. Three exhibits in which soy beans are shown as an oil source susceptible of great development are those of the Ford Motor Company, the University of Illinois and the Sherwin-Williams Company. In the latter soy bean oil appears as a paint base with some limitations.

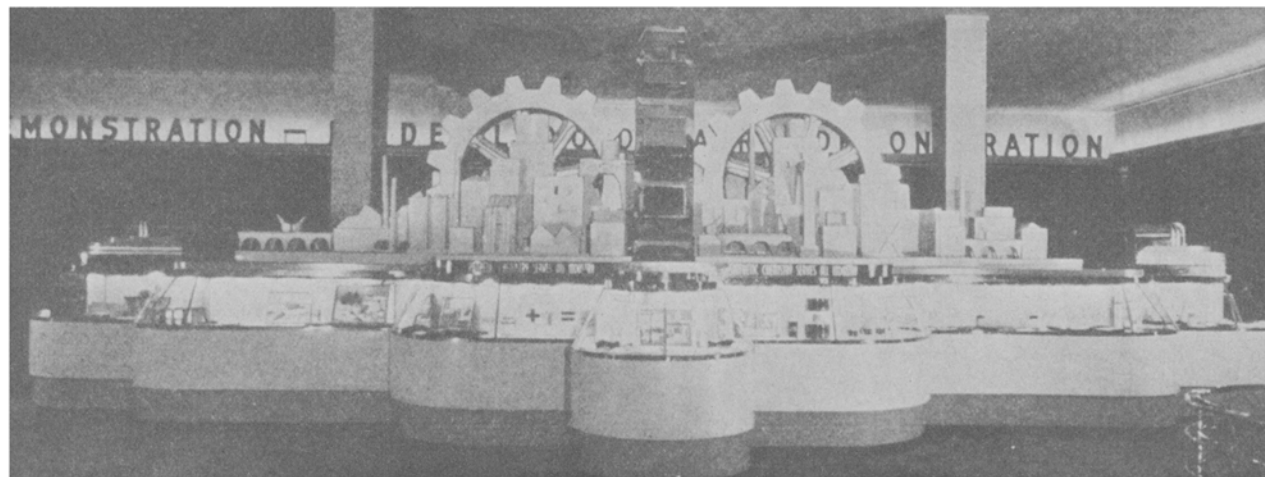
Dealing with the soy bean as an agricultural product the University of Illinois exhibit in the Food and Agricultural Building shows the possibilities of this plant as a profitable crop. In the past year, 4,350,000 bushels were produced in the state. As a result of replanting much of the burnt-out corn and other crops this year with soy beans the present crop may be much larger, although it may not figure industrially as a great proportion of the area was planted as an emergency forage and subsistence crop. Planting of soy beans has been encouraged generally as a rescue crop. The plant is so hardy and offers such special advantages in range of harvesting time that it probably will have increased favor with farmers from now on, after this forced introduction.

The University exhibit includes samples of jars of various grades of soy oil which may be used in hard and liquid soaps. There are also exhibits of varieties of soy beans and of soy bean flours and bakery goods made from them.

Henry Ford has been a consistent advocate of soy beans as a farm crop as part of his program for the industrialized farm, in which the farmer will have a variety of ways of turning his crop into money. In the Ford exhibit at the Fair the Ford "Industrialized Barn" is surrounded on two sides by plots in which soy beans are growing as demonstration of the vigor and productiveness of the plants.

The barn is the original Ford homestead barn built in 1863 near what is now the city of Dearborn, Michigan. The building was taken up and transported to the Fair, partly for its sentimental interest and partly as a demonstration of how a farmer may transpose his old home barn into an industrial unit. A soy bean processing plant is built around the interior of the barn, the engine being outside.

Units of the oil extractor are of simple design and made chiefly of standard piping and sheet metal that



Part of the exhibit of the Union Carbide and Carbon Corporation in the Hall of Science at the World's Fair of 1934 at Chicago

any mechanic could put together. The crushing rolls and a few accessories are the only parts that need be purchased.

**Forceful Educational Effort**

Oil extraction operation in this plant is by solvent. The beans are taken from storage in dry sheds, tempered to 12 per cent moisture content and then gravity fed to a series of five rolls between which they are progressively reduced to flakes of minimum thinness. The flaked beans are then passed by conveyor through a counter current of solvent, gasoline being used in the exhibit. The gasoline is distilled out of the solvent-oil solution and re-used. Flakes come through the process reduced to 2 per cent oil. The solvent is steamed out of the flakes, they are dried and ready for further conversion into food or industrial products. A paper covering soy bean oil extraction is scheduled for the morning of Oct. 11 of the A. O. C. S. meeting.

A soy food exhibit in the Ford barn shows soy flours, cheese, milk, butter, sprouts, salad dressing and various bakery goods. Dinners have been served at the Ford exhibit at which a number of guests have sat down to meals of which the entire menu was contrived from soy beans in various disguises. Plastic uses of the soy bean also are shown. Light switch assemblies are molded in a demonstration operation. Gear shift knobs and other small parts are exhibited. The entire exhibit is a forceful educational effort in which Henry Ford's campaign to urge the raising of crops that will provide the farmer winter employment as manufacturer is centered on the soy bean.

Uses of animal and vegetable oils for food and for soap making are seen in the meat packers' exhibits at the Fair. Armour and Company have a case exhibit of hard and liquid soaps, including olive chips. A miniature "solutionizer" and steel drum for mixing soap solutions is shown. The margarine exhibit is a series of jars of the ingredients; neutral, from the leaf of hogs—salt-milk—and oleo oil from choice beef fats. Cottonseed oil for salad dressing and cooking use also is exhibited.

**Swift & Company**

A large laboratory which gives the layman an idea of the extent of the scientific research behind a major meat packing business is shown by Swift and Company. The apparatus includes: melting point equipment for measuring the consistency of shortenings, fat extraction equipment, Kjeldahl nitrogen digestion rack,

stability apparatus for tests to control the keeping quality of shortenings, and testing apparatus for butter, margarine and lard. The soap equipment includes cleanser tests and apparatus for fabric analysis.

**Union Carbide & Carbon**

In the extensive exhibit in the Hall of Science of the scientific products of the Union Carbide and Carbon Corporation is an exhibit of the use of triethanolamine in soap making. A small operating model of a scouring apparatus is shown, using soap and ethylene dichloride as a grease solvent. A demonstration of emulsifying with triethanolamine soap compared with an ordinary soap is given as one of the scientific "acts" in the Science Theatre shows in the Court of the Hall of Science. Cosmetic creams and shaving creams emulsified with triethanolamine are exhibited.

Stearates and metallic soaps are exhibited by the National Oil Products Company in the Hall of Science. The exhibit includes Vitamin D produced from cod liver oil as fortifier of human and animal foods.

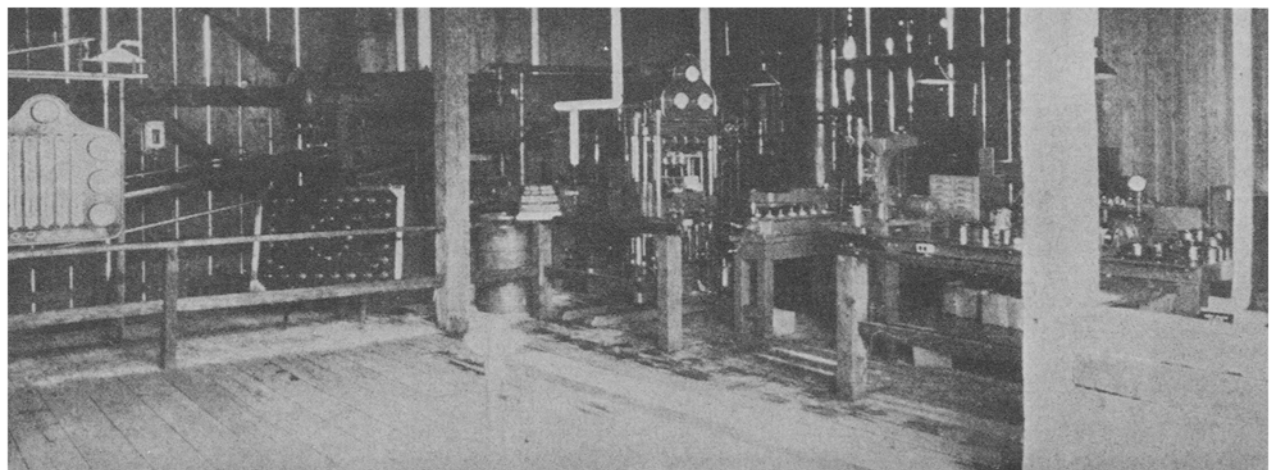
Cod liver oil as a source of Vitamin D is shown in the exhibit of the Burroughs-Wellcome Company while the Abbott laboratories stress the Vitamin D properties of halibut liver oil. Old Monk olive oil is shown in an exhibit of bottled and canned products, including mayonnaise and salad dressings. A distillation unit is part of the exhibit of Jules Riviere, Inc., in the General Exhibits Group. Flower oils separate or in combination, blended with ambergris or civet are shown in process of filtration and distillation.

**Pittsburgh Testing Laboratory**

The Pittsburgh Testing Laboratory, in Home Planning Hall, has an exhibit showing how tests are run on Tung oil. These tests have proved the remarkable powers of this oil when used in paints to resist sun and water. O'Brien's tung oil paint is used in the test.

Tung oil paint, it is explained, is a comparatively new product in America, made from the oil of the tung nut. The tung tree, native of China, has been introduced to the Gulf Coast where it gives much promise of becoming a profitable industry.

The Walgreen Company shows a moving picture of laboratory methods in the preparation of this drug firm's cosmetics and tooth paste. There are numerous exhibits of finished goods and beauty shop demonstrations by manufacturers of cosmetics.



This crude barn, originally built 71 years ago on the farm of Henry Ford's father at Dearborn demonstrates to World's Fair visitors what has been called "Henry Ford's Solution to the Farm Problem"