Drying Oil Week Covers All Aspects

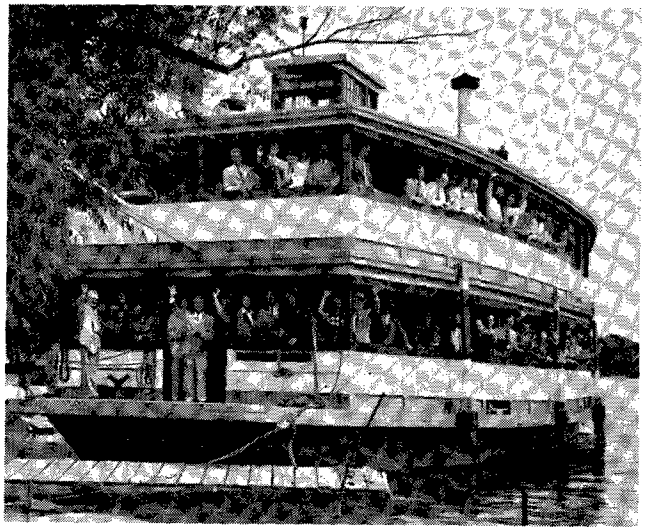
THE Third Annual Short Course sponsored jointly by the American Oil Chemists' Society and the Federation of Paint and Varnish Production Clubs was held during the week beginning August 7, 1950, at the University of Minnesota Center for Continuation Study in Minneapolis. It was attended by 97 students who had come from 24 states, Canada, and Holland to participate in the course on drying oils. Papers given at the Short Course will be published in the November issue of the Journal, and therefore only brief mention will be made of each of the talks.

W. O. Lundberg, the course chairman, first introduced S. O. Sorensen, who discussed the economic aspects of the drying oil industry and pointed out that the United States within the past few years has changed from an importer of fatty oils to an exporter. The price of drying oils now depends to a surprising extent on the availability of non-drying oils such as lard and cottonseed oil, on account of the importance of soybean oil as both an edible and a drying oil. The next lecture was on the chemistry of drying oils by D. H. Wheeler and contained an excellent review of the current theories on the mechanism of oil drying. J. W. Dunning in his discussion of the use of expellers for recovery of drying oils emphasized the importance of cleaning and properly preparing the seed before expulsion.

After lunch F. P. Parkin spoke on solvent extraction of drying oils. Max Kantor followed with a talk on the methods used to refine drying oils, in which he outlined the steps usually taken to obtain a high quality linseed oil suitable for varnish making. The methods by which drying oils are fractionated commercially were described by S. W. Gloyer. Extraction with furfural was shown to be an excellent method of producing from either soybean or linseed oil a food oil and a drying oil of much improved properties.

P. O. Powers in the initial discussion on Tuesday morning outlined the reactions which take place when a drying oil is heat bodied. He emphasized the importance of keeping oxygen from coming into contact with the hot oil during bodying if a light-colored oil is to be produced. He also showed that there was a general correlation between the rate at which oils body and their composition. W. L. Taylor then gave a talk on the techniques used in bodying oils by air blowing, and R. L. Terrill, in discussing the dehydration of castor oil, pointed out that the production of dehydrated castor oil has risen from practically zero 10 years ago until it is now one of the more important drying oils. The catalysts and conditions customarily used to effect this reaction were outlined.

ON Wednesday morning A. G. Hovey, J. C. Cowan, and C. A. Klebsattel continued the discussion on processing of drying oils. Dr. Hovey described how the properties of drying oils may be modified by polymerization with either styrene or cyclopentodiene. Oxygen is a catalyst for the initiation of this reaction, but once the reaction is started, it acts as an inhibitor by terminating chain growth. In his talk on isomerization and transesterification Dr. Cowan pointed out that ester interchange occurs to a considerable degree during heat bodying of drying oils. Mr. Klebsattel pointed to the present lack of knowledge regarding the mechanism of the action of driers in promoting film formation in drying oils and called for increased research along this line.



Jolly group of drying oil students sets out for Mississippi river trip to Port Cargill.

J. C. Konen discussed the various tests used in the drying oil industry and emphasized that no single test could be used to evaluate drying oils. Of great utility is the determination of drying time, but the temperature and the humidity must be closely controlled to get precise results. At the close of Mr. Konen's lecture a visit was paid to the research laboratories of the Archer-Daniels-Midland Company.

The discussion of the uses of drying oils was begun on Thursday morning with C. G. Moore speaking on their application to the manufacture of alkyds. These resins are being employed to an ever increasing extent in paints and varnishes because of their good adhesion, durability, resistance to chalking, and ability to hold color. Linseed and soybean oils are used to about equal extent in the manufacture of alkyds although many other oils may be involved. L. L. Carrick discussed the properties which the various drying oils impart to paints made from them. The importance of using a vehicle which will properly wet the pigment was emphasized. Oleoresinous varnishes were the subject of a paper by J. Hafeli. The trend in this field is toward the use of phenolic or alkyd resins to obtain products of high water and abrasion resistance. Alkali refined linseed oil is the oil most commonly used because it produces a light colored varnish.

ON the morning of the final day the discussion of the uses of drying oils was conducted by G. A. O'Hare with a talk on floor coverings. Dr. O'Hare pointed out that this industry is a major consumer of drying oils, especially linseed and soybean. The enamels used in enamel coated felt base, the major product of the industry, are exceedingly long (60-80 gals.), and the vehicle is usually a mixture of a fast drying oil, such as tung or dehydrated castor oil, and linseed or soybean oil. In the manufacture of linoleum, linseed and soybean oils are used almost exclusively. Faster drying oils produce a product which is too brittle.

I. M. Bernstein continued the discussion with an interesting talk on printing inks. The ratio of drying

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oil consumption to dollar sales in the printing ink industry has been declining for the last 10 years. This is on account of the demand for inks which dry instantaneously (1/10 sec.). Of the materials now under investigation, styrenated alkyds offer the best chance of reversing this downward trend. These alkyds when spread in a thin discontinuous layer (0.005 to 0.0001 in.) form a film instantaneously due to secondary or Van der Waal valence bonding. S. S. Gutkin described the use of drying oils in such products as glazing and calking compounds, putties, rust proofing agents, stamping and drawing compounds, gasoline resistant greases, and core oils.

Dr. Lundberg concluded the lectures with a discussion of the phases of drying oil industry in which research should be most productive. The mechanism of film formation, the action of driers in oil oxidation, polymerization and film formation, and a correlation between glyceride structure and drying were suggested as profitable lines for future research.

R. A. REINERS.

[EDITOR'S NOTE: Other photographs taken of the short course will be published in the October issue.]

Wanted: January Issues

Because of a shortage of January 1950 issues of the Journal, members of the American Oil Chemists' Society who have any to spare are asked to send them to the national headquarters at 35 E. Wacker drive, Chicago 1, Ill. If not donated, the office will pay 10c a copy.

Bailey to Humko

Effective August 19, 1950, A. E. Bailey has been named research director for the Humko Company, Memphis, Tenn. Since 1946 he has been with the Votator Division, Girdler Corporation, Louisville, Ky.

New Members

Active

Roy R. Baker Jr., chemist, Swift and Company, Chicago, Ill.
Arthur E. Bayce, chemist, Colgate-Palmolive-Peet Company, Berkeley, Calif.
William Payne Bulloch, chemist, Texas Vegetable Oil Company, San Antonio, Tex.
Harold Y. Gilmore, manager, Laboratory Products Division, El Dorado Oil Works, Oakland, Calif.
Henry Libkitz, chemist, El Dorado Oil Works, Berkeley, Calif.
Noble Hunt Moore, assistant manager, Delta Products Company, Wilson, Ark.
Harold Stanley Mumford, plant chemist, Colgate-Palmolive-Peet Company, Berkeley, Calif.
Mario Scolamiero, assistant chemist, Congoleum-Nairn Inc., Newark, N. J.
Julian C. Shaw, research engineer, American Laundry Machinery Company, Norwood, O.
Robert Joseph Stapf, associate chemist, Kraft Foods Company, Glenview, Ill.
Jose S. Vibar, mill superintendent and chemist, San Pablo Oil Factory Inc., San Pablo City, Philippines.

Individual Associate

James W. Garrett, chemist, Archer-Daniels-Midland Company, Minneapolis, Minn.

Referee Application

APPLICATION FOR REFEREE CERTIFICATE. *(First Notice).* Claude E. McLean, Arizona Testing Laboratories, Phoenix, Arizona, has applied for Referee Certification on cottonseed, on oil-cake and meal, and on fatty oils. Information from any member of the American Oil Chemists' Society on the qualifications of this applicant will be gladly received by the Referee Board and may be addressed to A. S. Richardson, M. A. & R. Bldg., Ivorydale 17, Ohio.

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