



# FATS AND PROTEINS RESEARCH FOUNDATION, INC.

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(5 MINUTES FROM CHICAGO'S O'HARE AIRPORT)

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## "THE DIRECTOR'S DIGEST"

D. M. Doty

Technical Director

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In the "Director's Digest" for November 4, 1964, it was announced that Stanford Research Institute, Southern California Laboratories, would undertake a feasibility study on the use of chemically modified animal proteins for structural plastics. We have now received a report covering the first six months research on this project. A resume' of the results follows.

A simple chemical derivative of gelatin was prepared and then heated to produce cross-linking or polymerization. When the material was heated at 100°C for 16 hours, vitreous, brittle materials were produced that did not dissolve in water. However this material did swell when placed in water which indicated some moisture pick-up. The hard material contained bubbles and was somewhat foam-like in appearance. When the gelatin derivative was subjected to heat and pressure in a metallurgical press the discs that were formed still swelled when placed in warm water. Thus this material would not be satisfactory for structural plastics. The problem was then approached in a slightly different way. Gelatin was boiled with another chemical that rendered the protein completely moisture resistant. When this material was subjected to heat and pressure in a metallurgical press, the discs that were formed showed no sign of swelling after soaking in water for ten days. This simple treatment produced such dramatic and desirable changes in the properties of gelatin that additional studies are strongly recommended.

In view of the promising results obtained and the recommendation made by the researchers at Stanford Research Institute, the Research Committee and Board of Directors at their meetings on July 13 and 14 approved renewal of our contact with SRI for an additional six months.

## RESEARCH PROGRESS IN BRIEF

The Battelle Memorial Institute studies on water-proofing agents for concrete continue to show promise. Concrete slabs treated with a tallow derivative absorbed only 9% of their weight after immersion in water for 198 days. Also the Battelle studies have shown that another tallow derivative is a superior air-entraining agent for concrete. The salt scaling resistance of air-entrained concrete made with this tallow derivative is much greater than that of concretes made with commercial air entraining agents.

With the cooperation of The Allbright-Nell Co. and Darling and Company an experimental heater for destroying Salmonella in feeds has been built and is being tested. With this experimental unit it will be possible to determine the amount of heat required to kill Salmonella in feeds and to develop cost figures for the process.

### NOTES FROM BOARD OF DIRECTORS MEETING

At the meeting on July 14, the Board of Directors approved activation of the following research projects.

1. Continuation of the Standord Research Institute project on Use of Animal Portein for Structural Plastics (see above).
2. Studies on the Chemical Dispersion of Keratin Proteins at the Harris Research Laboratories, Washington, D. C.
3. Fats and Fat Derivatives in Rations of Dairy Cattle Under Different Temperatures at the Wisconsin Alumni Research Foundation.
4. Studies on the Control of Salmonella in Feeds for Poultry at the University of Massachusetts.

The Board also approved a Tentative Research Budget of \$209,700 for the 1965-66 fiscal year. Final adoption of the budget will take place at the next Board meeting which will be held on November 23 in Chicago following the Annual Meeting of the Members of FPRF. The Research Committee will meet on November 22.

The Board agreed to undertake a concentrated solicitation campaign to obtain additional FPRF members. The Chairman, Mr. R. J. Fleming, assigned several companies to each member of the Board for immediate personal contact.