

## The 1953 Short Course and Our Land Grant Colleges

THE 1953 Short Course of the American Oil Chemists' Society is to be held at the Agricultural and Mechanical College of Texas in July. In general, the course will cover the engineering aspects of oil seed processing into useful products. As the plans mature, details about the 1953 course will be given on other pages of the Journal. When the Education Committee of the American Oil Chemists' Society selected Texas A. & M. for the 1953 Short Course, they perhaps realized the educational developments which have led to this and similar colleges all over our country.



J. D. Lindsay

The historical trend has been for more and more education. Many of our parents had little compared to present-day standards. Most of us recognize the state college or university as contrasted to a privately-endowed institution of higher learning, but may not be familiar with the term "Land Grant College." In the early part of the 19th century there was little public support of education. In general, it was the business of the church or private enterprise or was supported by subscription. In those days the only activity recognized by the colleges was education in the learned professions. About 1850 there was a movement headed by Prof. J. B. Turner of Illinois to establish an "industrial university." Later (1857) J. P. Morrill introduced a bill into the House to provide a grant of land to each state for the purpose of establishing colleges as advocated by Professor Turner. Although passed by both houses, it was vetoed by President Buchanan. However in 1862 it was passed again and approved by President Lincoln. There was thus established a different system of higher education. The provisions of the act, commonly called the First Morrill Act, donated public land script to each state in the amount of 30,000 acres for each senator and representative then in Congress. The income from the sale of this land was "for the endowment, support, and maintenance of at least one college, whose leading object shall be, without excluding other scientific and classical studies, and including military tactics, to teach such branches of learning as are related to agricul-

ture and the mechanic arts—in order to promote the liberal and practical education of the industrial classes in the several pursuits and professions of life." This was a new type of college, new in financing and new in objective. Although students in the earlier colleges came from the farm and industrial families, they entered the learned professions and were lost to these most important activities for the development of the country. The purpose of the act was clear, through science and education to make leaders for agriculture and industry.

EACH state accepted the grant but dispersed the funds pretty much as it saw fit. In some the money went to help support what we normally think of as privately endowed colleges. In others it went to start or help general state universities. In others it went only for agricultural education. However some states started agricultural and mechanical colleges. For example, among others, we have Texas A & M and Oklahoma A & M. These early, new objectives were not easily achieved. Neither agriculture nor engineering, as the "mechanic arts" were later called, had courses of study, a literature, or competent teachers. Engineering appeared to be more fortunate, perhaps, because it was based on mathematics and its graduates were successful in industry. By 1880 engineering courses were well established, and in 1893 a national organization of engineering educators was formed.

Agricultural education did not fare so well. Much of the money derived from the original grant did not serve its purpose. In 1887 Congress passed the Hatch Act, which provided \$15,000 for each state to organize an experiment station for research to be conducted in connection with its agricultural college. In rather a short time this greatly aided agricultural education through stimulation of the discovery of the laws upon which plant and animal growth depend. It provided a basis for agricultural courses rather than a study of rule-of-thumb methods. The Agricultural Extension Service to carry the findings of the scientist out to the people in the states came later. It also was a boon to agricultural education.

This new type of college that was just getting started was greatly stimulated by a cash appropriation of \$25,000 to each for teaching by the "Second Morrill Act" of 1890. The exact organization is different for each state and is fixed by its own legislators. However the general framework of a school for agriculture and engineering with basic training in military science is much the same. Through the years there have been additional bills and support from the federal government to these educational institutions. The money allocations are usually on the basis of the census taken every 10 years. Although our Land Grant Colleges were initiated by federal funds, the major support now comes from the states themselves. This is particularly true for the academic or teaching division. The following recent figures give a breakdown of the annual expenses of a sample Land Grant College.

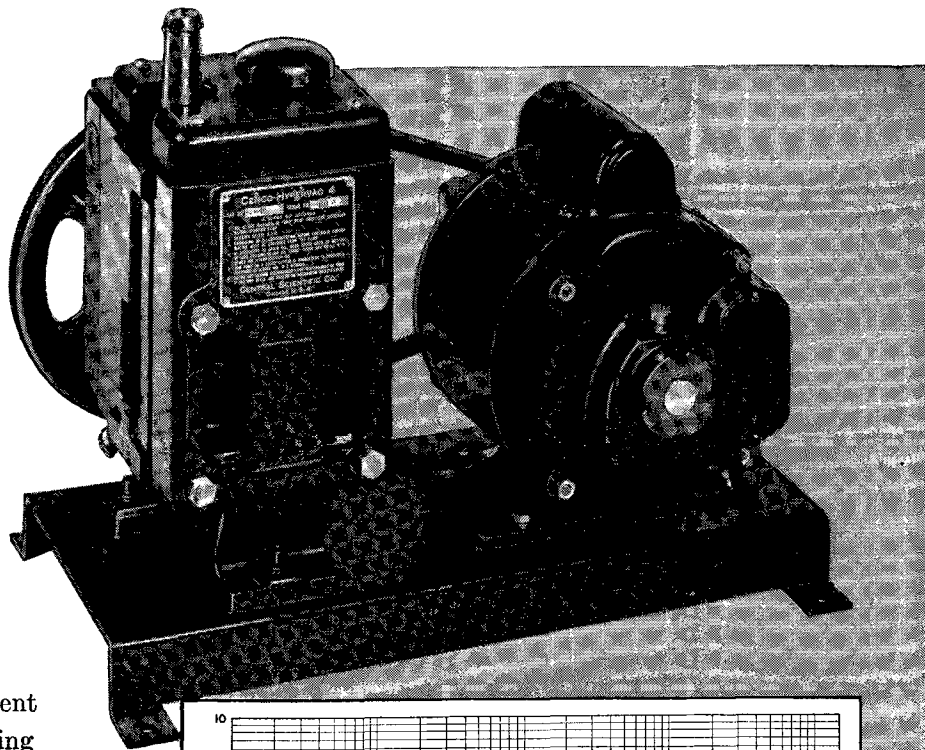
|                       | Teaching           | Ag. Expt. Sta.     | Ag. Exten. Ser.    |
|-----------------------|--------------------|--------------------|--------------------|
| Federal Funds.....    | \$ 110,000         | \$ 508,000         | \$1,995,000        |
| State Approp.....     | 2,809,000          | 1,228,000          | 692,000            |
| Fees, gifts, etc..... | 1,441,000          | 1,640,000          | 52,000             |
| <b>TOTAL.....</b>     | <b>\$4,360,000</b> | <b>\$3,376,000</b> | <b>\$2,739,000</b> |

(Continued on page 24)

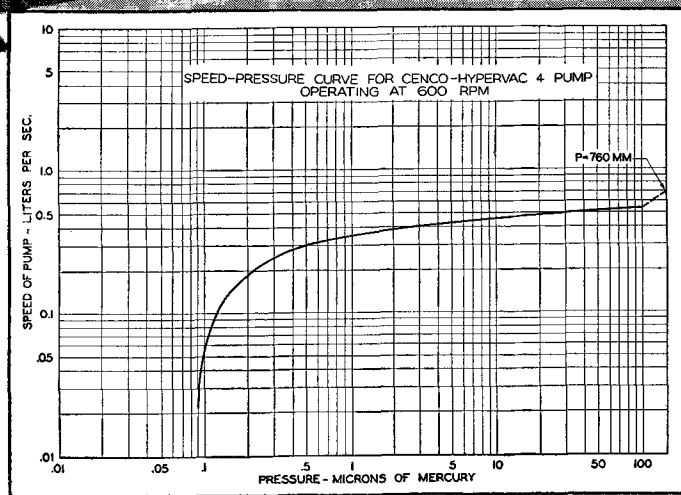
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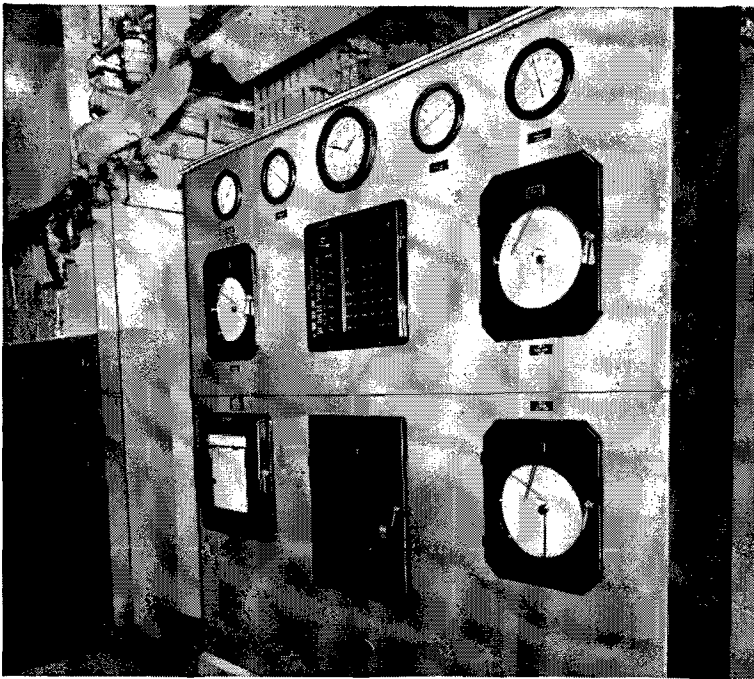
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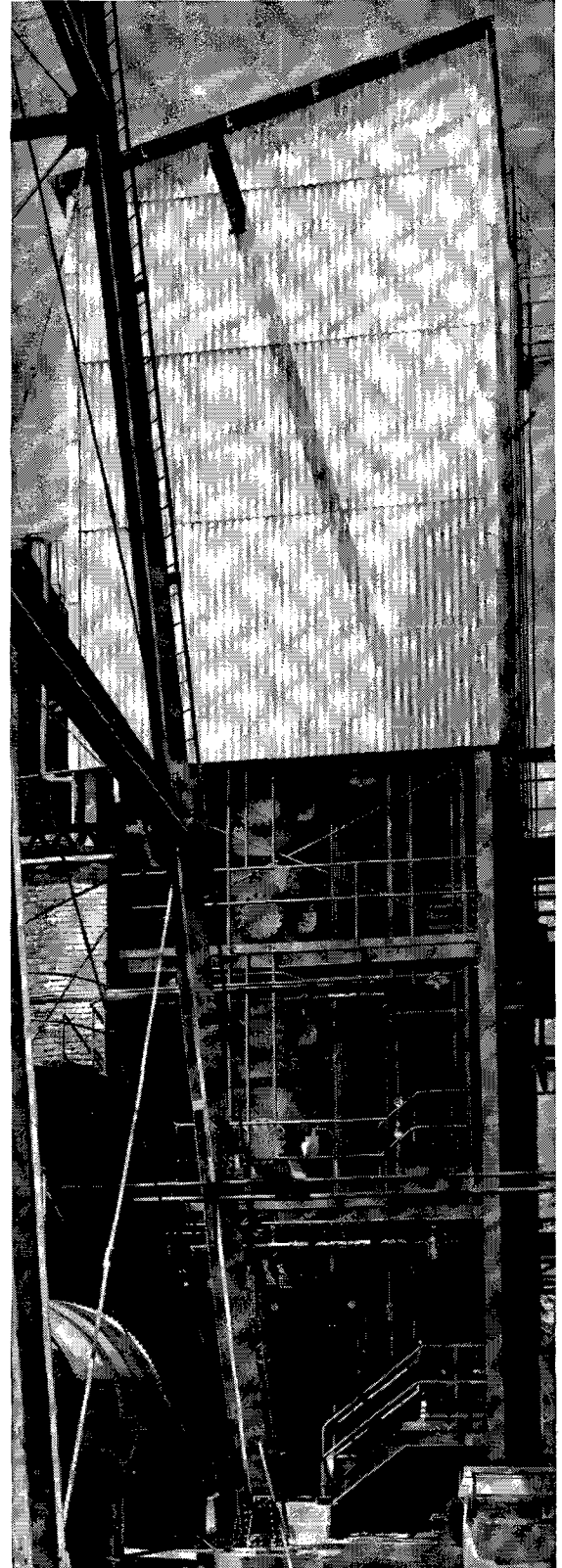
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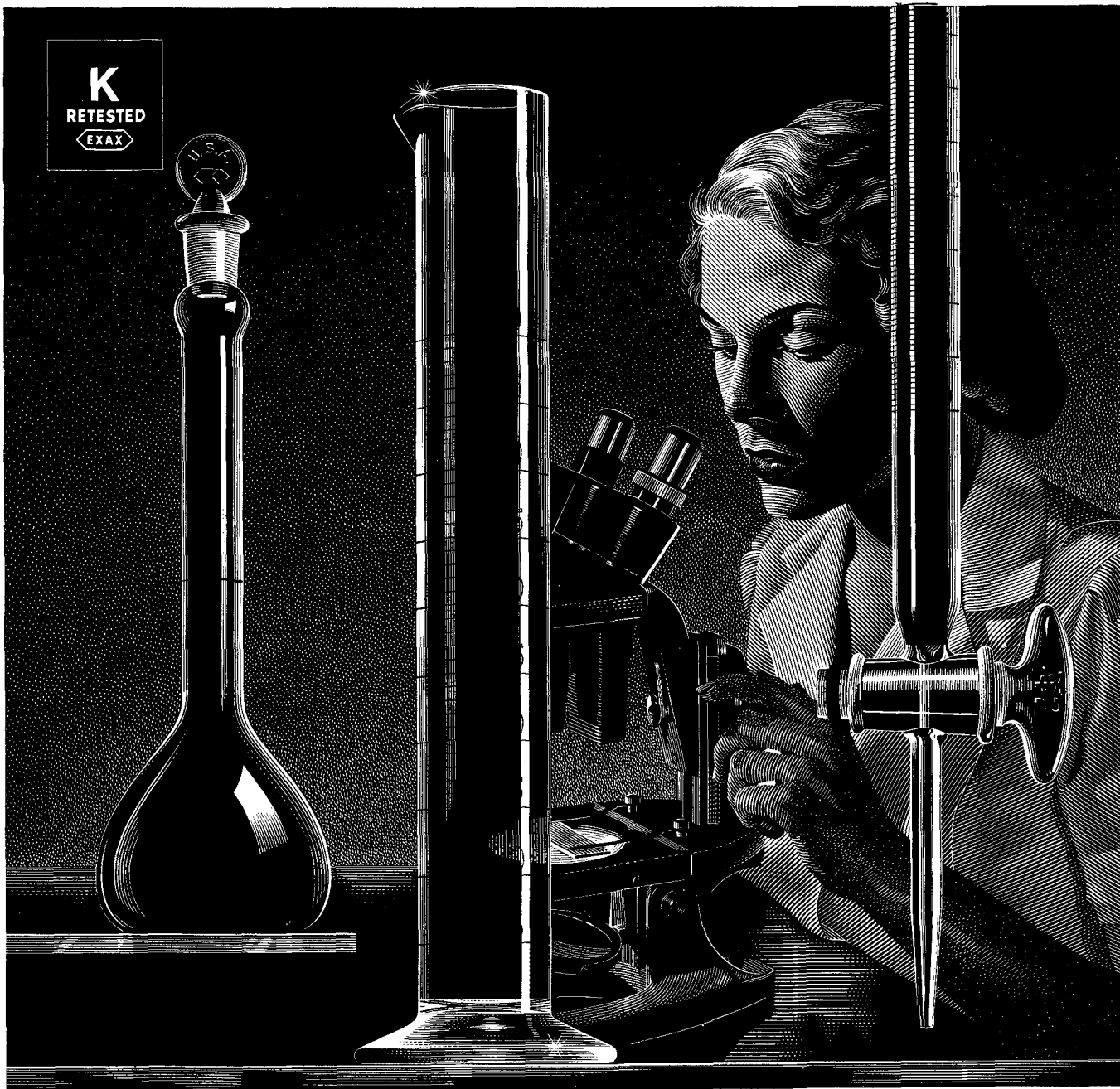
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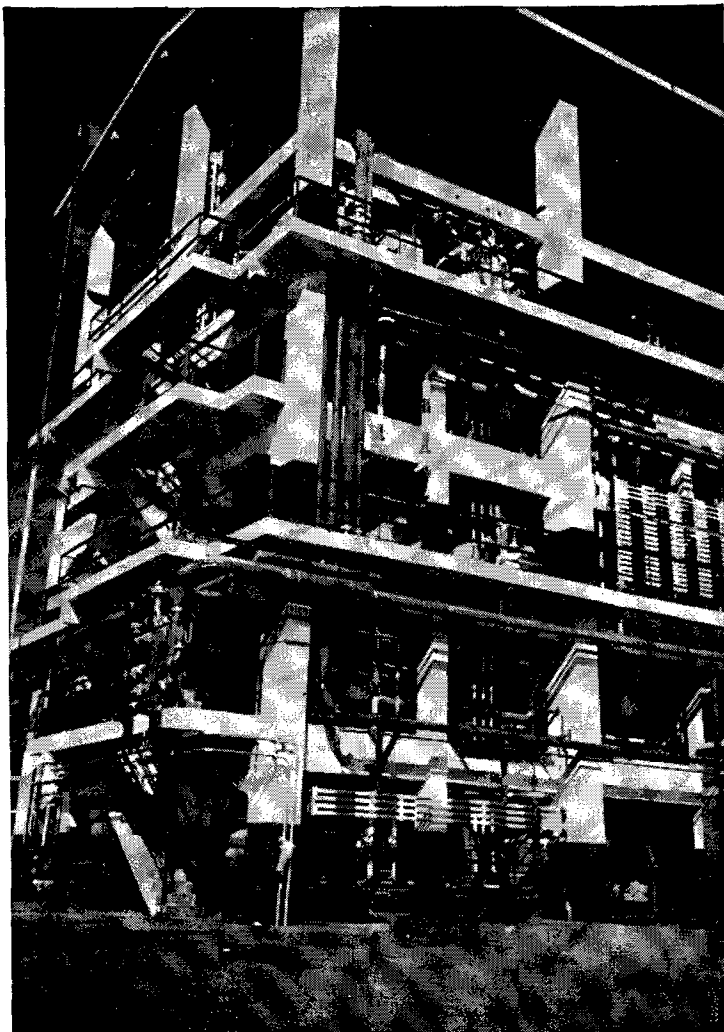
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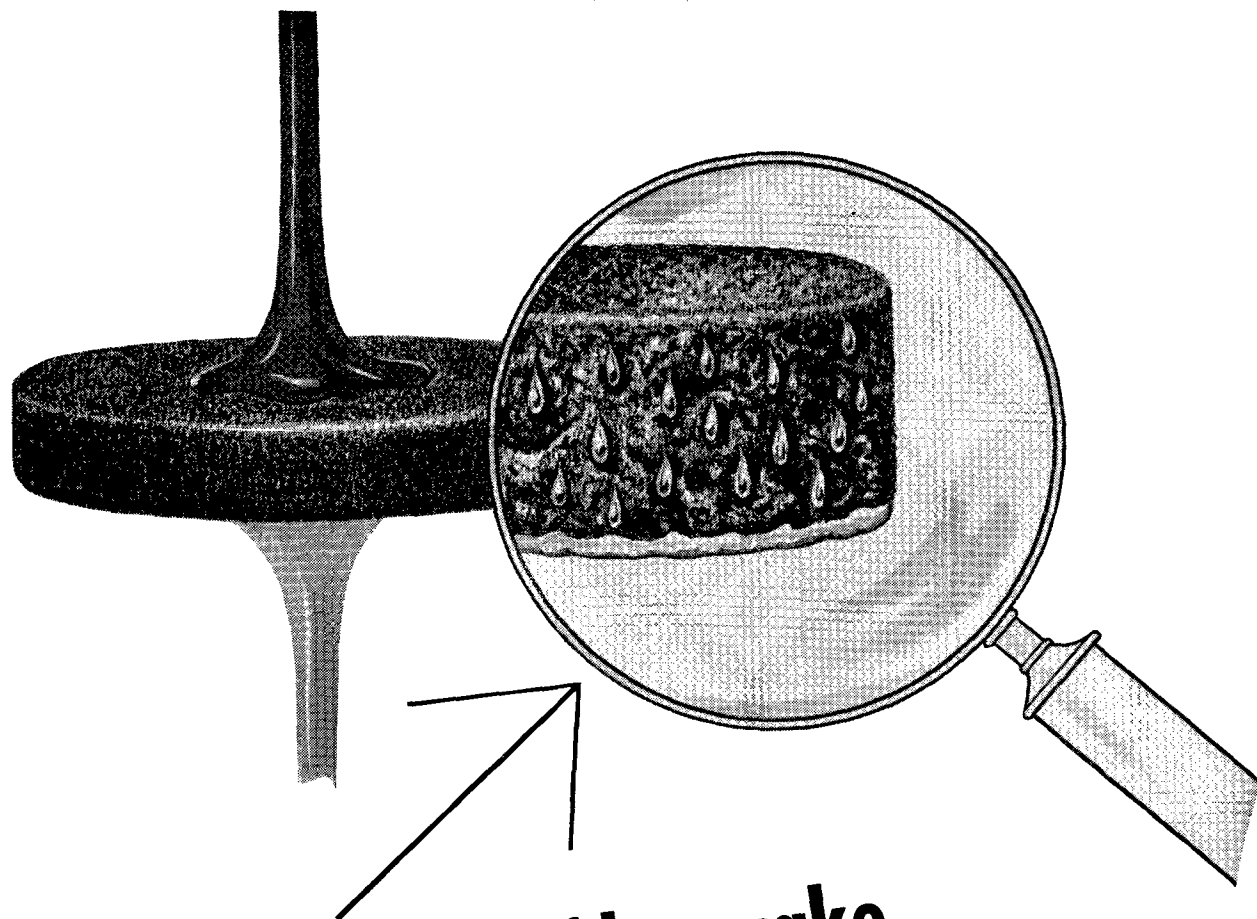
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**ANSWERS TO  
YOUR QUESTIONS ABOUT  
ROCHE VITAMIN A**

**Q. What is Roche vitamin A?**

**A.** It is vitamin A, the product of a synthesis which starts with Citral, from lemon grass oil. It is identical biologically with the vitamin A from other sources, such as fish livers. A Roche research team directed by Dr. Otto Isler announced their famous synthesis in 1947. This successful, economical process is now used to produce vitamin A of superb quality by the tons at Roche Park.

**Q. Does Roche vitamin A have a "fishy" odor or taste?**

**A.** None whatever, nor is there any "fishy burp." In fact, Roche vitamin A has almost no odor or taste and so is preferred for processed foods such as margarine.

**Q. Will I be able to get a steady supply of Roche vitamin A?**

**A.** You will. The entire commercial needs of the food and pharmaceutical industries of the United States and Canada could be met from our Nutley plant.

**Q. Can I be sure of a "standard" product?**

**A.** You can. Roche vitamin A is manufactured under strict laboratory control. It is more stable. It is uniform. The regular commercial types of Roche material, if diluted to 50,000 to 65,000 units per gram, will meet the specifications of U.S.P. XIV for oleovitamin A. It is a product of excellent quality.

**Q. What about price?**

**A.** Roche vitamin A is not subject to wide fluctuation of price, as has been true with vitamin A from natural sources. This can mean large savings for you as there is no need to carry large inventories as was the case prior to the introduction of Roche vitamin A in 1950. Never before has the purchaser been assured of such low prices, consistent with quality and uniformity.

**Q. How is Roche vitamin A packed?**

**A.** All Roche vitamin A is packed under conditions which assure its stability in customary shipment and storage.

**Q. Can I get help from Roche in using vitamin A in my products?**

**A.** Yes, certainly! Roche technical experts who supplied so much data at the hearings for amended Definitions and Standards of Identity for Margarine are always at your service. It is important to you that Roche specializes in the manufacture of vitamins.

**Q. Is Roche vitamin A available in different types and potencies?**

**A.** It is. The following table shows the types most popular in food manufacturing.

| TYPE | DESCRIPTION         | POTENCY   | ADDITIVE*                           |
|------|---------------------|---|-------------------------------------|
| P1MO | Vitamin A palmitate | 1,000,000 U.S.P. XIV units per gram                               | Edible oil only for standardization |
| P1.3 | Vitamin A palmitate | Ranging between 1,250,000 and 1,500,000 U.S.P. XIV units per gram | None                                |
| A1MO | Vitamin A acetate   | 1,000,000 U.S.P. XIV units per gram                               | Edible oil only for standardization |

\*Antioxidants or other additives are included on customer's specifications.

Notes: Type P1MO has less tendency to crystallize during storage and handling than higher concentrations of vitamin A palmitate and acetate.

Type P1.3 is more susceptible to crystallization than type P1MO but can be handled without difficulty when using certain precautions.

**Q. Are special blends available for the margarine industry?**

**A.** Yes. Roche will supply blends to your specifications. A modern blending and canning plant is at your service.

**Q. What kind of service can I expect on special blends?**

**A.** The best—with special attention to accuracy, quality and control.



**ROCHE**

Vitamin A acetate and palmitate

*Call Roche for vitamins*

Vitamin Division

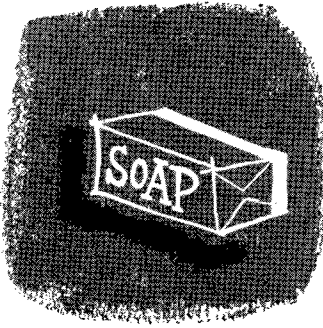
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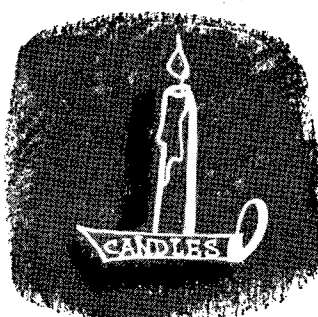
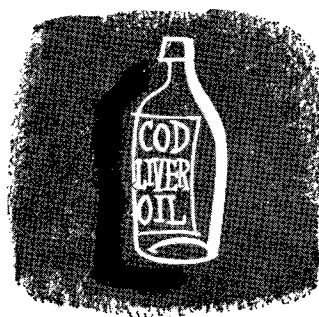
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In Canada: Hoffmann-La Roche Ltd.  
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**CLOTHS LAST LONGER**—Because the "cake" of Celite that builds up on the cloth does the actual filtering, the filter cloth does not become impregnated with slimy

solids. It therefore lasts longer, requires less frequent washings. Thinner and less expensive cloths may be used, too.

**COLOR AND FLAVOR ARE IMPROVED**—Wherever the apparent color is due to suspended matter alone, a change to Celite filtration will eliminate the need for bleaching agents. And, because Celite is pure and inert, it will not react chemically with liquids and alter their flavor in any way.

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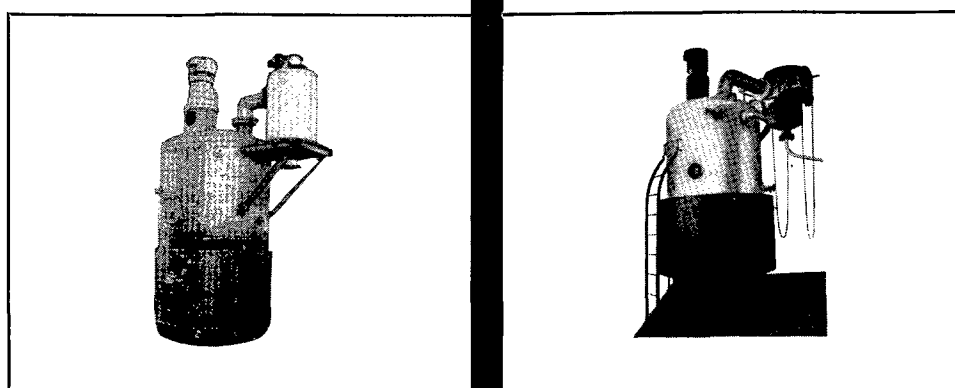


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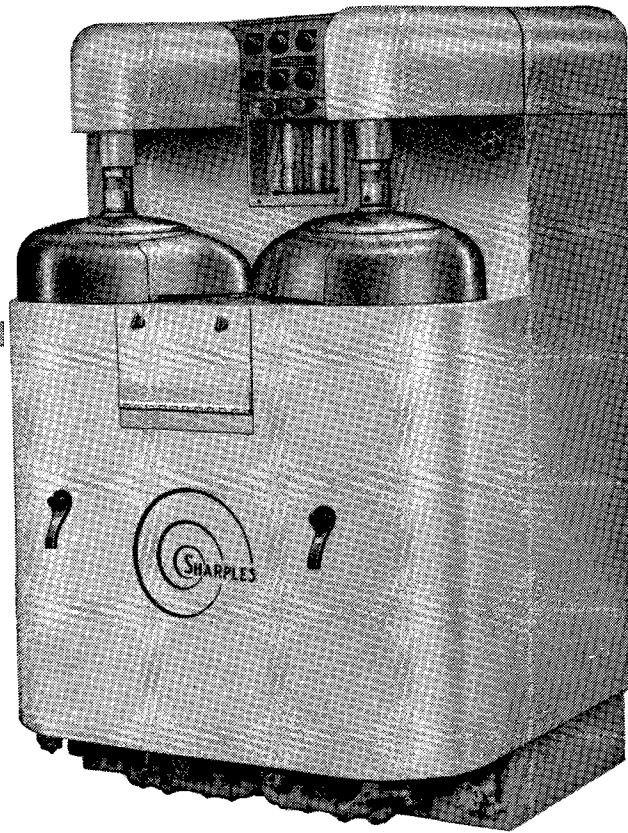
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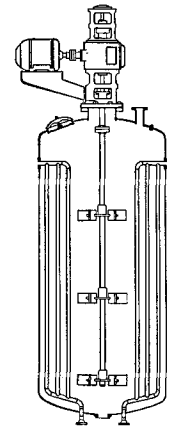
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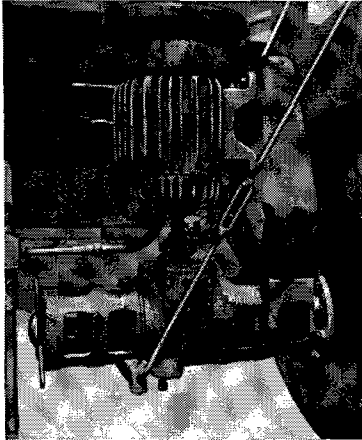
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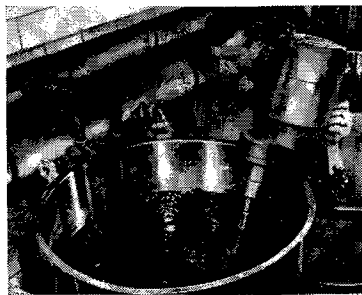
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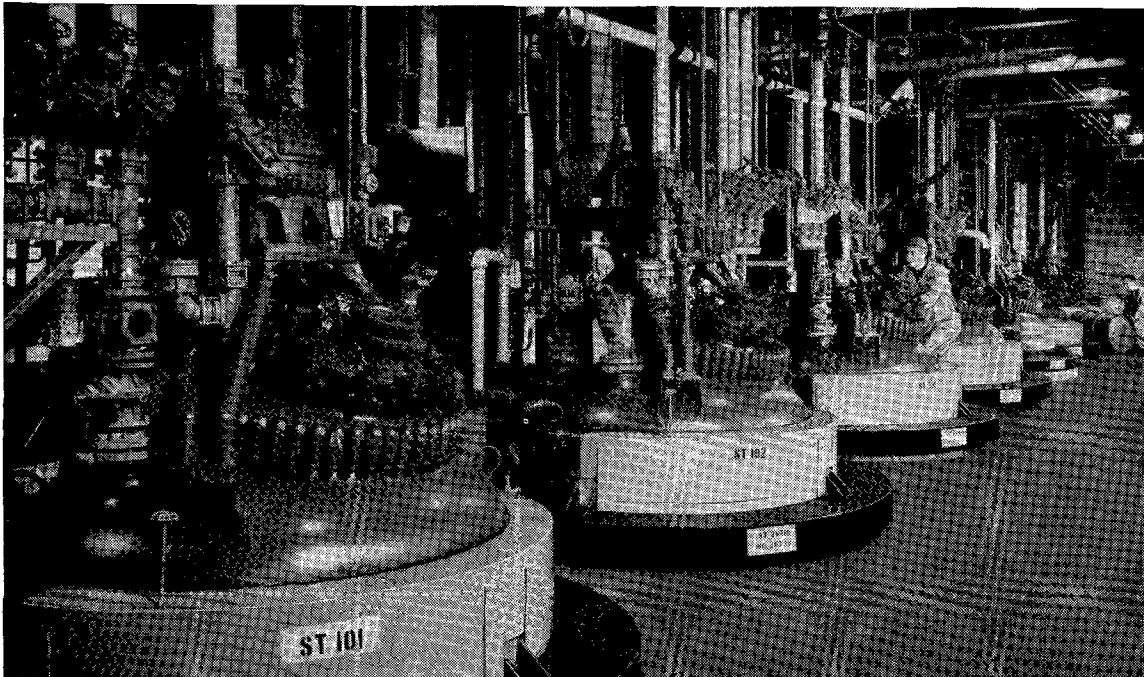


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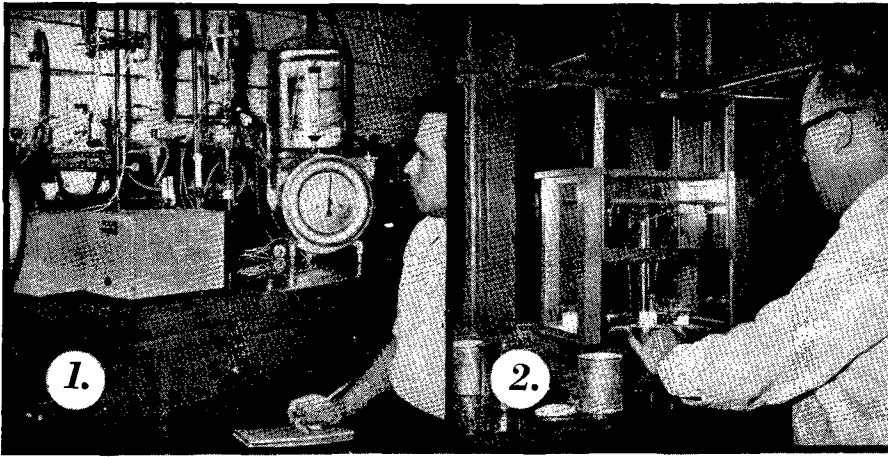


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quarters will remain at the Buffalo address until further notice.

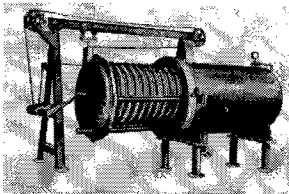
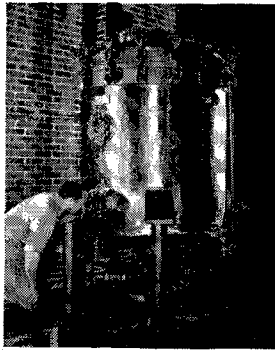
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Why you'll get

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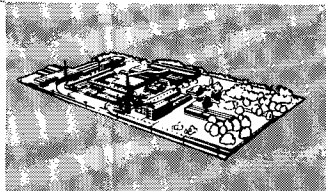
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You have a large "plus" to gain from the new Niagara Filter administrative and manufacturing set-up.

First and foremost, you'll get the same high calibre of engineering service as always; the same unique background of experience in filtration, applied to your specific production needs.

Second, your new Niagara Filter will be better built than ever before. Niagara engineers and production men are now working with vastly improved manufacturing tools. They are already drawing upon the resources and skills of the AM&M production staff—backed by large, modern plant facilities that greatly simplify the job of building the *right* filter for your operations.

Third, you'll get faster service. Your order will get into production days, even weeks earlier than heretofore possible. You'll enjoy, that much sooner, the unusual labor and upkeep savings which Niagara Filters make possible in processing plants everywhere.

*Niagara Filter* DIVISION

**AMERICAN MACHINE and METALS, INC.**

**SALES AND ENGINEERING OFFICES**  
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