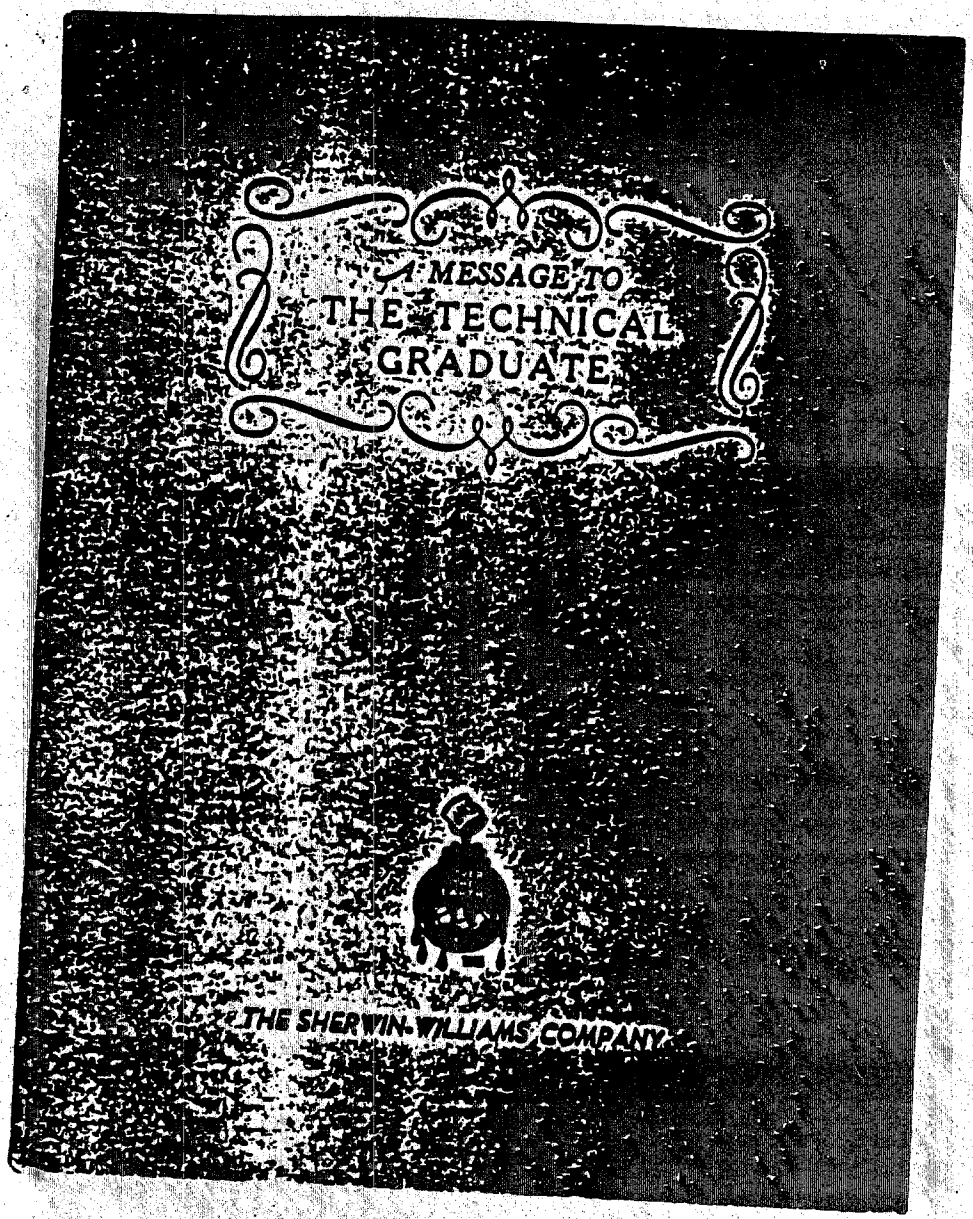

Auxiliaries Department

Pigments and Chemicals

At Coffeyville, Kansas, the company has a plant for manufacturing white pigments, chemicals and rare metals.

Lead and zinc ores are converted to leaded zinc oxide of various types by a process comprising volatilization and oxidation of the metals from such mixed ores. The fumes are cooled and condensed as a white pigment. This leaded zinc oxide finds its greatest usage in house paint.

In another process straight zinc ores are treated to obtain zinc sulfate. The zinc sulfate may be sold directly as a heavy chemical or it may be reacted with barium sulfide, obtained from reduction of barium ore whereby another white pigment, lithopone, is produced.

Various ores and/or sludges may be processed to recover rare metals.

The Coffeyville plant maintains laboratories, primarily for control of the process and the product, and for technical research as directly related to process problems.

Oils

At Cleveland, Ohio, the company has a mill for the extraction of drying oils from vegetable materials, refining such oils, and recovering useful by-products. Oils are extracted from various vegetable seeds and beans by either of three methods: hydraulic pressure, screw pressing or solvent extraction. The various oils are refined and treated to obtain straight refined oils, blown oils, heat bodied oils, linc varnishes, etc. One specialized process is the conversion of castor oil to the quick drying dehydrated oil known as Dehydrol by successive esterification of the castor oil followed by splitting back the ester to effect removal of hydroxyl groups and conjugation of the oil. Another department of this plant converts linseed oil into the popular "Flaxsoap," a pure linseed soap.

The residues remaining after extraction of the oil from vegetable materials are processed for the production of stock feeds and agricultural fertilizers. From some of the residues, proteinaceous compositions suitable for use in paper coating, plastics and emulsion paints are obtained by a process involving solubilization of the protein content, and reprecipitation of the purified proteins.

Both control and research laboratories are maintained at the Oil Mill, the latter being devoted to development of new processes and products from vegetable oils.

Auxiliaries Research Laboratory

The Auxiliaries Research Laboratory, located at Chicago, serves the interest of the pigment plant at Coffeyville, Kansas and the Oil Mill at Cleveland, Ohio. This laboratory has two primary functions: first to carry out pure and technical research in those fields related to the white pigment industry, the drying oil industry, heavy chemicals, rare metals, etc., and secondly, to train new personnel for future plant chemists and technicians in the pigment and oil plants.

A few of the general problems now being studied by this laboratory are: refining of drying oils, solvent extraction, proteins, especially with regard to purification and utilization of by-product proteins, development of new white pigments, and improving the white pigments now being produced, etc.

The Auxiliaries Research Laboratory is well equipped with the latest machinery, equipment and measuring instruments. Wide use is made of such instruments as the X-ray machine, photomicrograph, spectrograph, etc.

Because of the dual purpose of this laboratory a distinct opportunity is offered to young chemists and technical men to determine through further study and work in the laboratory whether his interests and aptitudes lie in research or production.