At this time Dr. Vollertsen called attention to the interesting exhibits of reagents and apparatus on display.

Mrs. Edith Shuck of Chicago presented a paper on "Consumer Ideas of Oil Cookery."

Mr. A. E. King presented a paper on "The Accelerating Effect of Metals on the Development of Peroxides in Oils and Fats" written by himself in collaboration with Mr. H. L. Roschen and Mr. W. H. Irwin.

Mr. L. B. Kilgore of Washington, D. C., read a paper prepared by M. R. Coe and J. A. LaClerc for the last meeting of the American Chemical Society. The title of the paper was Photo Chemical Studies Relating to Rancidity.

Dr. Dorothy Whipple presented a paper on "The Relation of Fats and Vitamines in the Diet."

Professor F. W. Bouska of Chicago presented a paper on "Butter, Its Commercial Aspects and a Diagnosis of Its Defects."

Mr. T. Linsey Crossley asked if consideration had been given to the quality of paper used to wrap butter.

Professor Bouska replied that the paper should be porous enough to admit of some evaporation.

Mr. W. D. Hutchins reported on efforts to obtain new members during the past year.

The meeting adjourned at 1:00 P. M.

*Discussion of the several papers deleted but will appear with the several papers as published.

Packaging Laundry Soap

By F. E. Joyce, Omaha, Nebr.

PAPER, inks, and containers are three items that make up the package of laundry soap. A technical discussion of the manufacture of these three is not intended, rather, the practical experience obtained from the use of the various grades of paper, types of ink and container materials.

With the advent of high speed wrapping machines and the urge for continuous non-stop production, it became necessary to use grades of paper with sufficient strength to stand quick jerks from the magazine. The cheaper grades of paper such as news print and book stock served very well at slower speeds but on high speed machines they were a continuous source of interruption because of frequent tearing and jamming in the delivery wheels. Just why these cheaper papers do not have the strength may be learned from the method of manufacture. Newsprint contains considerable untreated ground wood mixed with some treated fibres. In the paper making process the wood is disintegrated by caustic soda, sulphurous acid or neutral sodium sulphite to remove lignin and resinous matter to produce a clean wood fibre. Ground wood, on the other hand, is just what its name implies, merely wood ground to a powder and ready to be mixed with the treated wood fibres without undergoing any chemical process. A paper made by this method lacks strength and easily turns yellow on contact with alkali because of the presence of resinous matter. The cheaper book papers are made from worked over paper and a larger percentage of treated wood fibre. They look better than newsprint and print well but they tear easily and turn yellow with alkali like newsprint.

Other grades of paper tried frequently are parchment, dry waxed and sulphite. Parchment is rather expensive and has a tendency to crack if all moving parts of the wrapping machine are not perfectly synchronized; besides it does not lithograph as well as other grades of paper. Dry waxed paper works fairly well on slower machines but on fast wrapping machines the tendency is for two or three sheets to come out of the magazine instead of one, due to cohesion.

Of the grades of papers mentioned, experience has shown that the pure sulphite sheet is best. That is paper made from treated wood fibres alone without fillers such as ground wood, old paper stock and mineral fillers. Such paper is long fibre stock and does not tear easily. This type of paper is available in any weight and may be successfully used for both the inner and outer wrappers of laundry soap cakes. It is usually cut with the grain running the long way of the sheet. The surface of the paper is slightly roughened so there will be enough friction to prevent more than one sheet at a time leaving the magazine. Pure sulphite paper is not affected by alkali even on long standing and makes excellent stock for fine printing and lithographing.

Fully as important as the paper is the ink that goes on to make up the design. There has been many a headache in the printing and lithographing trades on the subject of inks for laundry soap wrappers. The reason is plain. There have been very few alkali proof colors discovered. This accounts for the fact that the average laundry soap wrapper is not produced in exceptionally clean or brilliant colors. It will not be out of place to touch briefly on the composition of ink. Printing and lithographing inks are composed of a pigment, vehicle and a drier. The pigment is for color and body. The vehicle, or varnish, carries the pigment from the ink reservoir to a series of rollers to the printing plate and from the plate to the paper. After the ink is on the paper it must be dried quickly; that is the function of the drier. These driers do their work by oxidation of the varnishes and are usually the oxides of lead, manganese and cobalt. If driers were not used, it would take weeks for ink to dry. Oxidation is so rapid with metallic oxide that an ink becomes dry in five minutes. An exception to this is newsprint ink which drys by absorption due to the porous nature of newsprint paper.

Colors that are generally considered suitable for soap wrappers are:

Hansa Yellow	Fire Red
Cadmium Yellow and Reds	Para Red
Fast Orange	Ultramarine
Madder Lake	Earth Color Brown
Vermilion	Carbon Black
Toluidine Red	

Half of these colors are of mineral origin or are inorganic. The mineral colors are not affected by alkali but their use is objectionable from the printer's standpoint on account of the abrasive action of coarse pigments on printing plates. Carbon black, of course, is not affected by either acid or alkali or anything under the sun except a good hot fire. Most aniline colors except the ones just mentioned are affected directly; or, indirectly, by alkali in contact with varnish or linseed oil. When the vehicle is destroyed by alkali there is nothing to hold the pigment to the paper.

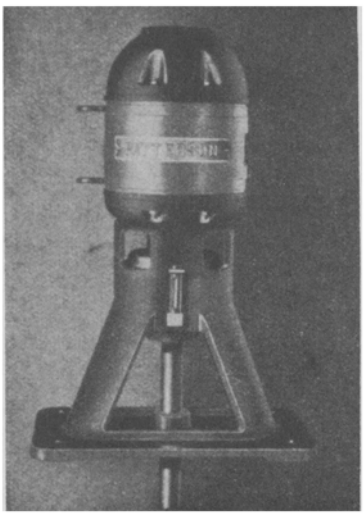
A wider range of colors could be discovered if the printing ink manufacturers would bring their troubles out in the open. Most of them, though not all, surround themselves with mystery and do not make much effort to

study the possibilities of the thousands of aniline dyes that have been discovered. It appears that each ink maker has his own batch of secrets and the mystery of alkali proof inks is not the least valuable. A good way to test printing and lithographing inks on soap wrappers is to take a cake of laundry soap, wrap it completely with printing outside and immerse the wrapper and soap in water for twenty-four hours. If the ink stands up under this test, it will be suitable for a laundry soap wrapper. Spot testing with 5 per cent caustic soda solution is not satisfactory and gives unreliable results. Wrappers that may not fade when touched with strong caustic solution may fade when the soap is packed in a tight box and subjected to sweating.

Following inks and wrapping paper, the container bears an important relation to the merchandising of laundry soap. The general custom today is to use solid fibre board boxes. This type is preferred to the corrugated container on account of the relatively larger percentage of moisture in laundry soaps which has a tendency to weaken corrugations through dampness. Solid fibre containers in recent years have undergone a decided improvement. For a long time they were decidedly porous and made from board that absorbed moisture like a blotter. The average box board is made up of three or four pliés of material. The outer liner with a finished surface for printing, one or two plies of common chip board made from waste paper and an inner liner faced with jute or craft paper. Jute liners are inferior to kraft liners for laundry soap, as they are more easily disintegrated by moisture and alkali. Kraft liners are made from any of the cone bearing woods by the sulphate process which produces an exceptionally long and tough fibre. In addition to its characteristic strength kraft paper is impervious to the moisture and alkali given off by laundry soaps. There has been some discussion whether some moisture should be allowed to escape from laundry soap or whether as much of the moisture as possible should be retained. Both plans have their merits. To allow some of the moisture to escape will diminish sweating and at the same time the weight of the cake diminishes, which is not so good from the merchandising angle. Retaining moisture in the container as much as possible keeps the cake fresh looking and up to the desired weight for a longer period of time at least. Containers to retain moisture as completely as possible are now available on the market. Some of them are lined with paraffin, others have a thin layer of asphalt between the chip board. Boxes that have pure kraft liners inside and out are highly satisfactory for this purpose. A more recent container makes use of rubber cement instead of silicate of soda to building up the three or four plies required. Boxes made in this manner are also quite satisfactory for retaining moisture but the manufacturers of these boxes have to consider the nature of the liners and chip carefully and gauge the amount of cement to be used, otherwise the plies of board will show a tendency to fall apart. Closely related to the moisture retaining properties of containers is the problem of mold. Whenever the container is made of porous material the chances of developing mold are very good. Chip board made of waste paper is usually treated to destroy any mold spores. However, the treatment may not thoroughly sterilize the pulp and under the right conditions of dampness and warmth mold will develop. Most box manufacturers deny this but the facts are there just the same. A theory advanced by some manufacturers of boxes is that mold is due to the use of North American woods that are ground up for use in connection with the construction of the liner. Prior to the use of North American timber their raw material was imported from Norway and no complaints of mold were brought to their attention. However, the source of mold is not definitely settled but the use of moisture proof containers will do much to eliminate the absorption of dampness which precedes the development of mold spores.

Patterson Announces Unipower Agitator

The latest addition to the extensive line of Agitators, Mixers and Stirrers manufactured by The Patterson Foundry & Machine Company is illustrated in the accompanying illustration. Used for several years with Patterson machinery, it is now offered as a separate agitator for all purposes.



The UNIPOWER AGITATOR is built in both vertical and horizontal types and, when using 1800 R.P.M. motors, will produce shaft speeds down to less than one revolution per minute if desired, without the use of gears.

While one way or two way agitation can be accomplished without noise, vibration or grease slop of any kind, and heavy, continuous loads or momentary overloads as high as 400% can be carried, the unit is very compact and light, making it especially attractive for installation over tanks and vats.

The UNIPOWERS are built in sizes of 40 horsepower down to fractional sizes in several frame types, and require no additional bearings or flexible couplings for installation.

Presentation of Chemical Industry Medal to James G. Vail

The new Chemical Industry Medal of the American Section of the Society of Chemical Industry was presented last evening to Mr. James G. Vail of the Philadelphia Quartz Co., at a meeting held at The Chemists' Club, New York City, for making a valuable application of chemical research to industry. The meeting was held jointly with the American Chemical Society, the Electrochemical Society and the Societe de Chimie Industrielle.