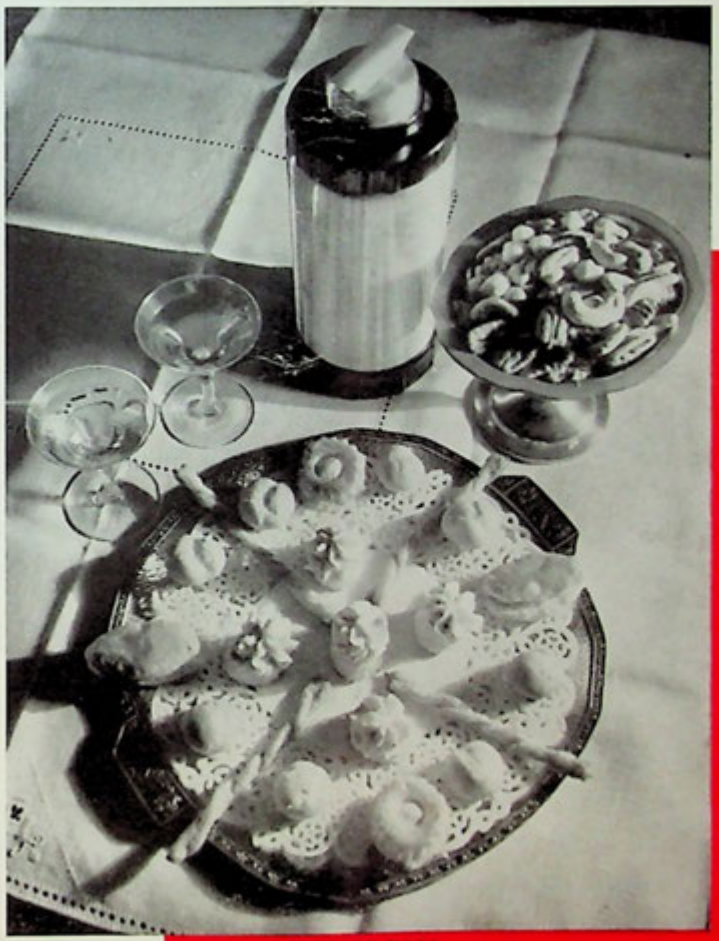
The Northwestern Miller



VOLUME 200
NUMBER 8

DECEMBER 13, 1939

In Two Sections — Section One

Like a Sponge takes up Water

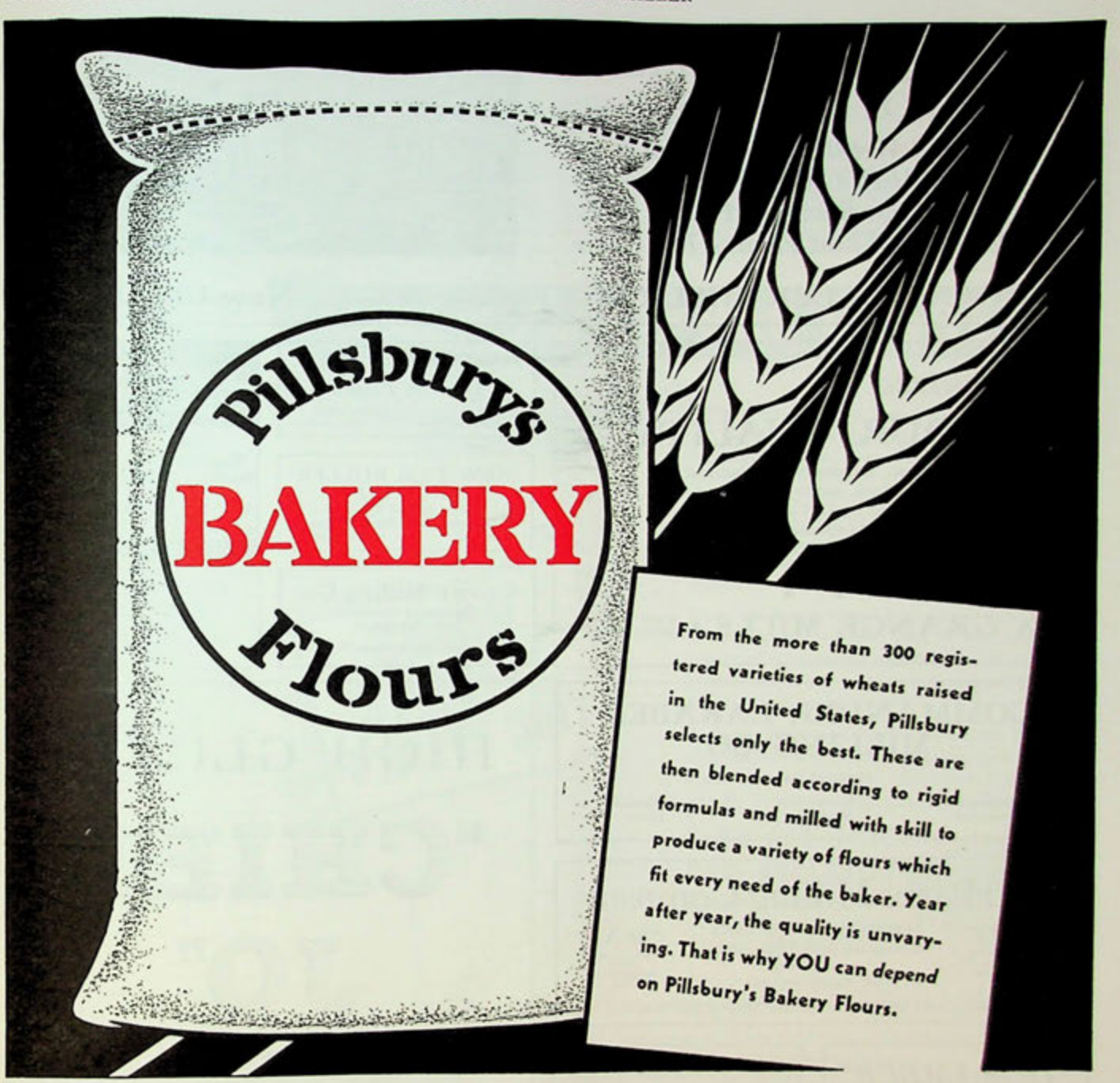
That's what bakers have told us again and again. "Seal of Minnesota Flour takes up water like a sponge." The reason? We have made wheat selection a firm rule. Each crop year baking tests of Spring wheat samples from every growing area, point out the best wheat sources. With this advance knowledge we purchase wheat to be safely stored in our own grain elevators until ready for grinding. The choicest Spring wheat not only means the maximum amount of water absorption for Seal of Minnesota Flour but the least fermentation and baking loss. You have every desirable baking requirement in Seal of Minnesota Flour. It produces a loaf that tells the World you know your business.

YOUR LOWEST COST

BREAD IMPROVER!

SEAL OF MINNESOTA FLOUR

Minneapolis . . . . . INTERNATIONAL MILLING COMPANY . . . . . Buffalo



PILLSBURY'S BAKERY FLOURS

PILLSBURY FLOUR MILLS COMPANY

GENERAL OFFICES: MINNEAPOLIS, MINNESOTA

The Northwestern Miller: Pub. weekly on Wednesdays, except 1st Wed. of each month, by Miller Pub. Co., Minneapolis, Minn., U. S. A., 10c copy; yearly rate $2 dom. and Canada, $5 foreign. The Northwestern Miller and American Baker pub. 1st Wed. of each month, 10c copy; $1 year dom. and Canada, $1.25 foreign. Combination annual sub. to The Northwestern Miller and The Northwestern Miller and American Baker $2 dom. and Canada, $5 foreign. Entered as second class matter at the Minneapolis Post Office.

DINOGRANCRUNCHIANS

By RICHARD E. MILLER

ASK anybody. That is, anybody interested. They'll tell you that fully to understand and be a student of technical principles surrounding any industry, you must have a sound knowledge of the background of that industry. Now milling is no exception. And, of course, there is supposed to be a great deal known about the history of flour.

Having little else to do some time ago, we sat down and began to wonder just how much *is* known about the beginnings of the flour business. How about, for instance, the Dark Ages? Where was milling then?

Considering this quite a question, we asked all the learned millers we could find, but none of them seemed to know. It appeared to be a general belief that the Dark Ages began some time following the flop of Roman elegance—about 500 A.D.—and that the dreary spell was so called because everybody had to eat dark bread. Our question, however, aroused the interest of many men to whom it had been put. *They* wanted to know where milling was long before the fall of the Romans; way back, in fact, when people were called savages instead of barbarians. Accordingly, they set about investigating this obscurity.

It is a pleasure to offer our readers some of the information these curious men have unearthed after, of course, considerable work. For those who might be doubtful, let us say that any statements made concerning these new discoveries can be backed up. Proof, or a reasonable facsimile thereof, of all the findings leading to certain conclusions about to be revealed has been filed away in archives given over to that sort of thing.

You've heard of mortars and pestles, but we'll bet our ability to spell dinograncrunchian that you've never heard of dinograncrunchians. It is reported to us that these—uh—things flourished during the middle savage period, when those two-legged creatures who are, it's said, our ancestors, were beginning to roam from a tropical climate, where food grew on trees, to a slightly colder atmosphere where such things as hatchets and spears were handy in helping to bring home something for Sunday dinner. Also about this time, our reconstructive historians have found, the wheat plant began to flaunt itself in the summer breeze.

It seems that a number of jaw-bones belonging to men of that period have been unearthed. The remarkable thing about these is that many of them are fitted with false teeth. It is these teeth, in fact, that date the jaw-bones, for almost all sets found carry the unmistakable handiwork of a well known dentist who lived in those days, too. The logical conclusion to make is that these chaps didn't have very good teeth. Naturally, none of them cared much about chewing wheat berries, for it was not only hard on their dentistry, but took a lot of energy, as well.

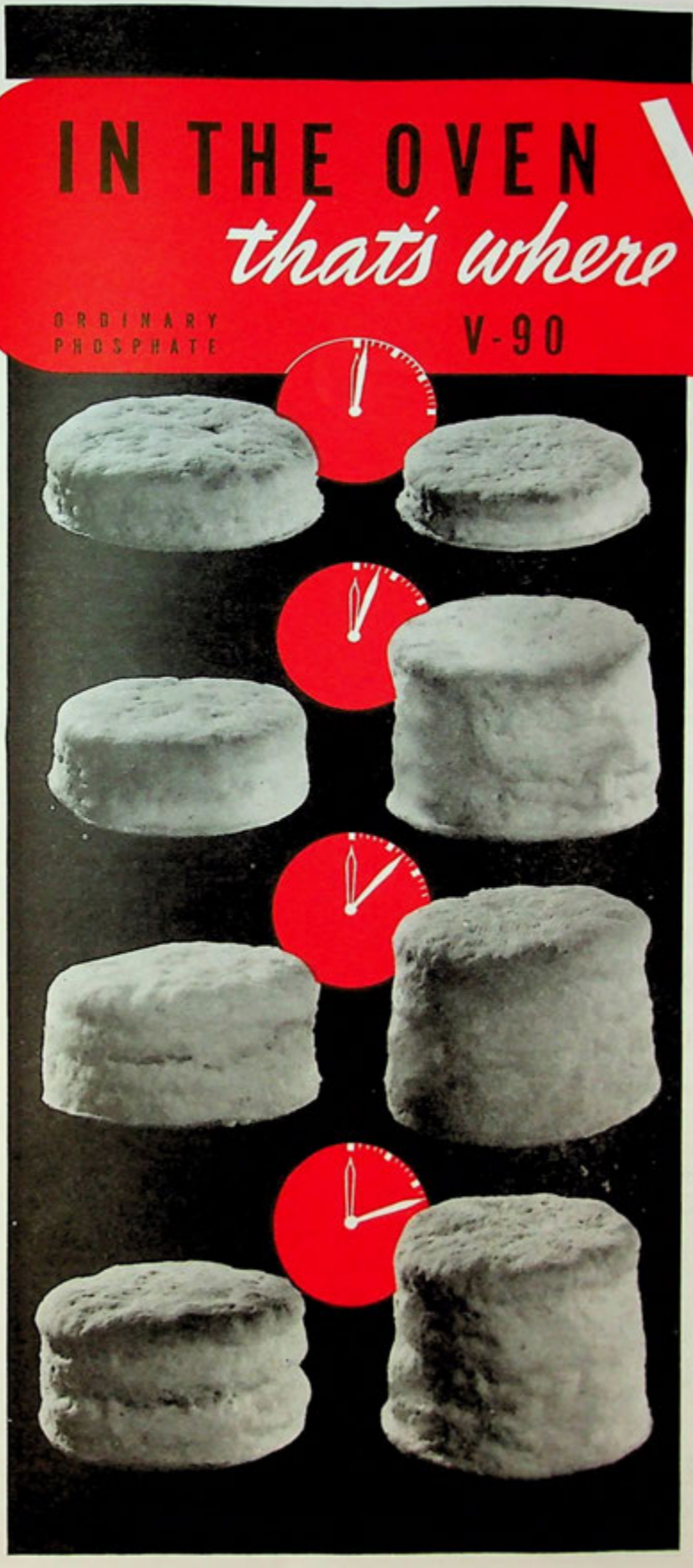
This fact brings the dinograncrunchians into the scene. These beasts—of huge proportions, as any one can easily see by looking at their skeletons now on exhibit here and there—had exceptional molars. They also sported some pretty fine fangs, and all in all their jaws provided excellent milling facilities, considering the standards of the time. The upshot was that elaborate traps were set for animals, who were, we hate to admit, ruthlessly killed and robbed of their jaws.

As nearly as can be surmised, the jaws —fully equipped with teeth but otherwise stripped down to the bare essentials— were held secure in some suitable place, grain was poured into the hollows of the lower teeth, and the uppers were snapped shut again and again. Each time they closed, a grinding action was provided by shoving the upper jaw from side to side until the wheat was reduced to suitable fineness. There is even some evidence to support a contention that gradual reduction was practiced, different sized jaw-bones (and therefore smaller and finer teeth) being used in sequence.

Another theory, based on similarity between certain types of bones, and all that sort of thing, has it that the milling industry gradually fell pretty much under the control of dinograncrunchian breeders. Presumably, there were many different types of wheat springing up from time to time, but the savages knew little or less about wheat breeding, and were forced to make the best of whatever varieties happened to survive the growing periods. For this reason, the mills themselves were bred to combine needed characteristics of different dino-etc., so that hard wheats could be crunched by one sort of jaw and soft wheats by another.

Unfortunately, little seemed to be known about sifting. However, a rough purifier was in use (not a sieve purifier, for cloth wasn't being woven extensively in those days, the people preferring to spend most of their time running about in fur beach attire). Getting back to the purifier—this, it has been concluded, also made use of the dinograncrunchian teeth.

IN THE OVEN that's where V-90 ...MAKES A difference!



"The baking of a biscuit" . . . that's what this picture might be called. It reveals the inside story . . . shows what actually happens in the oven to biscuits made with regular phosphate and V-90. After all, *that's* what counts!

Because V-90 is slow acting . . . less leavening gas is lost in the mixing bowl . . . more is saved for action in the oven. Biscuits are more efficiently leavened . . . that's why you get the outstanding difference pictured here!

That, too, is why V-90 biscuits are lighter, more tender and more digestible . . . why they taste better and have a softer, silkier interior and a rich, golden brown crust color. That's why high grade self-rising flour made with V-90 bakes such marvelous cakes.

Can such a striking difference fail to impress the most critical housewife?

Note: The doughs for the biscuits shown in the adjoining picture were rolled to the SAME thickness to make a fair comparison. To get a thinner biscuit with V-90 simply roll the dough thinner.

VICTOR CHEMICAL WORKS

141 W. Jackson Blvd., CHICAGO, ILL.

New York, N. Y.; Nashville, Tenn.; Kansas City, Mo.; St. Louis, Mo.; Greensboro, N. C.

Plants: Nashville, Tenn.; Mt. Pleasant, Tenn., Chicago Heights, Ill.

Following the grinding operation, a 1,500 r.p.m. centrifugal conoidal fan (with forward curved blades) was set in back of the jaws, and chaff, bran particles, germs and other parts of the wheat not popular in the flour were blown through the teeth. It isn't at the moment known whether they were caught in some manner and sold as feed. Anyway, the heavier middlings either were too big to be blown between the teeth or too heavy to be lifted by the air current. They were later removed and sent to another reduction.

It isn't quite clear what happened to the dinograncrunchian milling industry, or why our delvers-into-the-past have never before even noted its existence. Some experts feel that the group which got control of the business became greedy. They started mixing quantities of other stuff in with their flour, and the common people, having lots of places to go and plenty of time to go there in, got disgusted and decided to migrate. This left the millers with no market, but it is believed that they weren't for long troubled by the lack of business, since there is good evidence that a dust explosion wiped the lot of them out during a meeting at which they were to decide how things could be put back on their feet.

As it all turned out, the milling knowledge gathered in that period was lost (until, of course, these recent discoveries). The next thing that made a stir in the way of milling equipment was the mortar and pestle. Those who used these had for many years no knowledge of reducing grain gradually, in the sense we now use the term, though there is reason to suspect that the wielders of the pestles considered the whole process too gradual for comfort. No doubt the fellows who thought up a real gradual reduction system in a primitive sort of way some hundred years ago or so considered themselves pretty smart. Luckily, they never suffered the humiliation of knowing how far behind they were compared to the dinograncrunchian millers.

—BREAD IS THE STAFF OF LIFE—

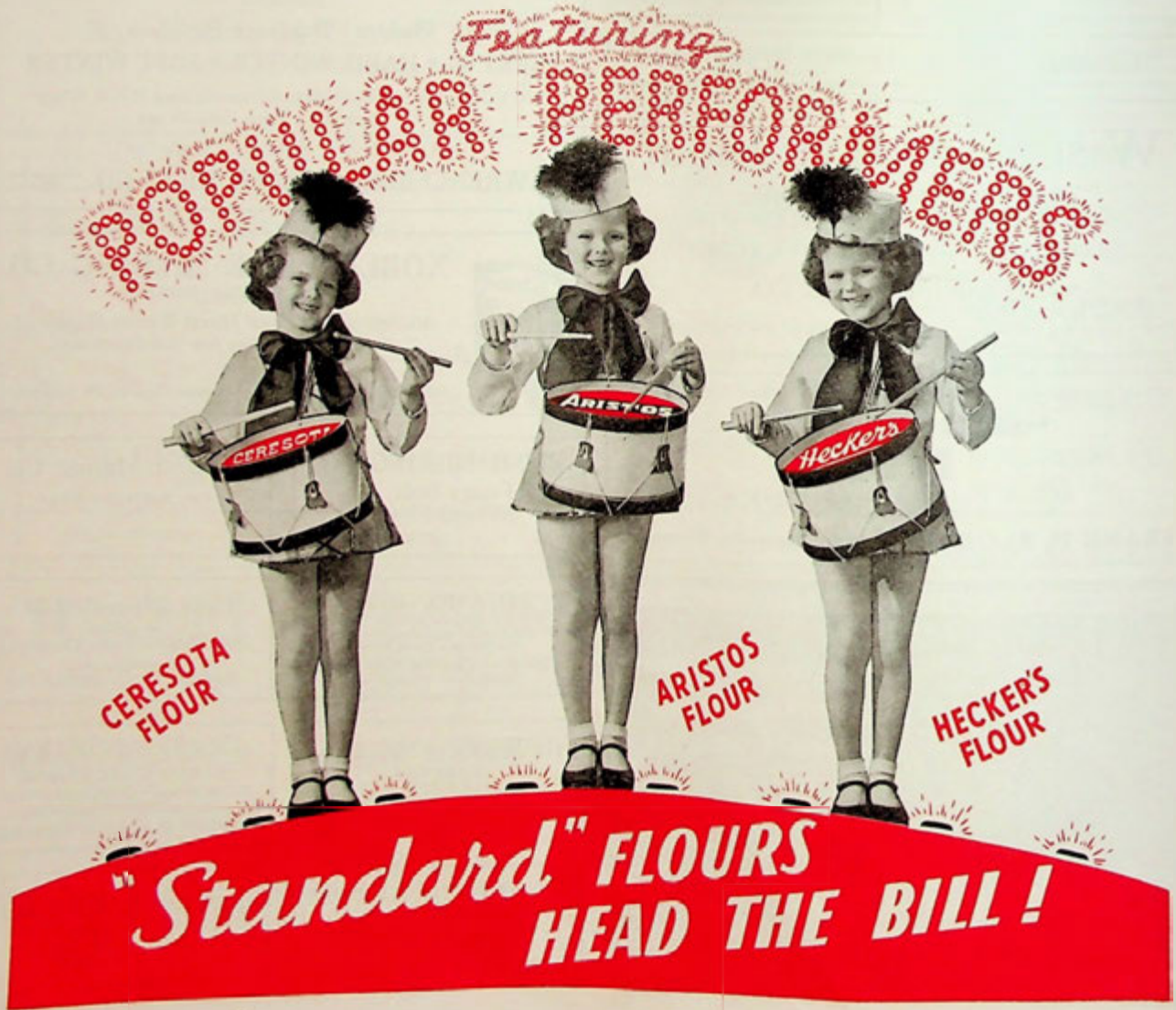
The crown of a good disposition is humility.—ARABIAN PROVERB.

CERESOTA, Aristos, and Hecker's flours are popular bakery performers—have been for generations. Doughs are lively—they spring in the oven. Loaves win popular favor with their wheaty fragrance and good eating qualities. Popularity of "Standard" flours has continued through the years because of uniform, dependable performance.

GENERAL OFFICES
309 WEST JACKSON BLVD.
CHICAGO

MILLS
★ MINNEAPOLIS
★ KANSAS CITY
★ BUFFALO

STANDARD MILLING COMPANY
BAKERY FLOURS



The Old Windmill at Wamego, Kansas

A Bit of Netherlands in Kansas

By Margaret Whittemore

In the Wamego, Kansas, city park, overlooking U. S. highway 40 from a 25-foot mound, stands a last vestige of the type of milling operation brought to this country by Netherlands pioneers, only to be supplanted in a few years by modern milling methods peculiar to this country. It is an old Dutch-type windmill, restored to its original beauty and potential efficiency through the generosity of a former Wamego boy, Robert Cox, now a wealthy oil man of Tulsa, Okla. Mr. Cox presented the town of Wamego with $1,000 for repairing the old landmark and equipping it with vanes.

Built in 1879 by a Netherlands immigrant named Schonhoff, the red sandstone windmill has long been cherished for its picturesque and sentimental value. All of the original machinery but the main shaft was constructed over a crude home-made forge. Telephone poles form the basis of the 40-foot paddles, while canvas is stretched across the wooden frames at the end of each. Of late years no attempt has been made to grind grain, although the well-worn buhrs, which came originally from France, are in place and the necessary machinery is intact. The structure is 40 feet high with a diameter of 25 feet at the base.

For 45 years the windmill stood on a farm 12 miles from Wamego, and Kaw

(Continued on page 40.)

STORED WHEAT DAMAGE PROBABLY NOT GREAT, SURVEY SHOWS

Preview of Reports Received by THE NORTHWESTERN MILLER on Condition of Farm and Country Stored Wheat in Kansas Indicates Small Loss

KANSAS CITY, MO.—A preview of reports so far received in a survey of the condition of farm and country elevator stored wheat in Kansas, conducted by THE NORTHWESTERN MILLER, suggests only moderate ground for fears of excessive or exceptional damage to wheat, particularly wheat under government loan.

Reports from a substantial number of millers of the state indicate there has been variable damage to farm stocks, mostly from weevil infestation, with not much resulting from must or heating. Their reports include expressions from farm agents on wheat under loan in farmers' granaries. Exceptions to the average or normal rate of damage are in the central part of the state, where wheat went into store with relatively high moisture.

Considerable susceptibility to continuing weevil damage is also indicated, despite fumigation and other control measures. Some instances are reported of loans being closed on wheat going out of condition, which may account in some degree for a relatively large percentage of arrivals on the market of musty, weevily and sick wheat, a substantial part of which is currently being condemned for use as human food.

A more complete report from the majority of Kansas mills will subsequently appear in THE NORTHWESTERN MILLER.

OCTOBER FLOUR EXPORTS TOTAL 622,851 BARRELS

WASHINGTON, D. C.—Figures from the Bureau of Foreign and Domestic Commerce show that this country exported 622,851 bbls of flour and 1,701,441 bus of wheat during October, 1939, compared with 669,277 bbls and 2,529,525 bus the previous month. A year ago, October exports totaled 376,164 bbls and 3,103,740 bus. Principal countries which imported United States flour were:

The Philippines 131,319, the Netherlands 125,607 bbls, Cuba 68,062, Norway 44,611, Venezuela 36,635, Palestine 32,647, Ecuador 32,547, Guatemala 13,212, Newfoundland and Labrador 10,528, the Republic of Panama 9,708, the United Kingdom 9,731, Gold Coast 9,463, Costa Rica 8,465, Canada 7,125, French West Indies 6,955, Hongkong 6,753, Nicaragua 5,493, the Dominican Republic 5,607, Haiti 4,872, Surinam 4,075, Nigeria 3,721, Panama Canal Zone 3,578, Jamaica 3,114, British Honduras 3,194, "other British West Indies" 2,588, Colombia 2,271, Salvador 2,055, Mexico 1,993, Honduras 1,811, Peru 1,798, Belgian Congo 1,832, Egypt 1,482, Barbados 1,300, Iceland 1,143, China 1,036.

During September 4,039 bbls flour were shipped from the United States to Alaska, 3,936 to Hawaii, 51,002 to Porto Rico, and 2,096 to the Virgin Islands.

Of the total 1,701,441-bu wheat export, 1,039,784 went to Belgium, 477,922 went to the Soviet Union, 57,292 went to Ireland, 35,195 to Salvador, 53,033 to Colombia, 28,207 to Honduras, 4,106 to Mexico, 2,474 to Cuba, 500 to the Dominican Republic, 896 to Venezuela, 16 to the United Kingdom, 6 to Canada.

The United States shipped 133 bus wheat to Alaska and 6,195 to Hawaii.

CO-OP INCREASING STORAGE

HUTCHINSON, KANSAS.—Chalmers & Borton, Hutchinson contractors, have begun work on additional 2,000,000-bu storage facilities for the Union Equity Cooperative Exchange, Enid, Okla. The contract calls for 30 26-foot tanks, 126 feet high, of re-enforced concrete. They will increase the co-operative elevator's capacity to 3,200,000 bus.

FEED FIRM STARTS WHOLESALING

The Antigo (Wis.) Flour & Feed Co., operated by Jake Hunter, has purchased a building on Fifth Avenue for its new wholesale department, which will operate as the Antigo Flour & Feed Co., wholesale groceries.

LIBERTY OR EFFICIENCY? ASKS CO-OP EXECUTIVE

WASHINGTON, D. C.—"Do the American people want monopolies and their dollars and cents savings in preference to freedom of competition, which means political and economic democracy?"

The question of choice, Hector Lazo, executive vice president of the Co-operative Food Distributors of America, points out in his recent booklet, "Controlled Competition—Corporate Chains, Cartels and Co-operatives," is one which cannot much longer be put off.

Challenging the entire development of industry, farming and distribution and calling on the American people to think honestly, the book deals specifically with monopolies and monopolistic controls of business.

The question, declares Mr. Lazo, is one of basic honesty, since monopolies can be defended largely on the basis of dollars and cents economies. "It is quite possible to set up a centralized dictatorship in government and a regimented system of business monopoly which will result in mechanical efficiency far surpassing anything we have ever known to date.

"No one who has studied the question in its entirety denies that monopolistic business entities have certain inherent economic advantages which can be passed on to consumers in the form of lower prices. Similarly, dictatorships are credited with being less costly, less cumbersome, more flexible than democracies in times of emergency."

SHIPPERS, TRAFFIC HEADS GATHER AT MINNEAPOLIS

MINNEAPOLIS, MINN.—The annual dinner of the Minneapolis Traffic Club on Dec. 7, brought to Minneapolis a number of nationally prominent railroad executives. Registrations were close to the 1,000 mark.

The speaker, Congressman Oscar F. Youngdahl, portrayed the difference between the American form of democratic government and that in force in the dictatorships of Europe, and urged the people of this country to preserve their priceless heritage.

Taking advantage of the occasion, local railroad representatives arranged numerous luncheons, preceding and following the day of the dinner, to enable shippers to meet the executives of their roads. Dec. 6, E. G. Simeon, general agent for the Lehigh Valley Railroad, gave a luncheon at the Athletic Club for E. J. Henry, of Chicago, and other officials of the road, at which there were about 20 shippers present. On Dec. 7, Ernest Irber, general agent for the Chicago & Illinois Midland, gave his annual luncheon in the Club Rooms of THE NORTHWESTERN MILLER, where shippers met William C. Hurst, senior vice president, Vance Williams, traffic manager, and others. Then on Dec. 8, E. H. Richards, assistant general freight agent, sponsored a luncheon at the Athletic Club on behalf of the North Western and Omaha roads, where shippers had an opportunity to get acquainted with R. L. Williams, the new chief executive officer of these roads. At this affair, Carl R. Gray, Jr., executive vice president, presided as toastmaster. In addition to these, there were a number of other parties, all of which kept the shippers busy most of the week.

CUDAHY SEEKS $308,182 IN PROCESS TAX SUIT

CHICAGO, ILL.—A federal court suit against the Collector of Internal Revenue has been filed by the Cudahy Packing Co. Cudahy is asking for the return of $308,182 in processing taxes allegedly paid between Aug. 9, 1933, and Nov. 15, 1934, as required under the former Agricultural Adjustment Act, which was declared unconstitutional in 1936.

A previous claim and suit against the collector, Carter H. Harrison, were unsuccessful for technicalities, and a second claim for the refund was lodged with him June 28, 1937. Since 29 months have elapsed without action on the claim, the suit was instituted, it is claimed.

The packing company said $291,666 of the refund sought was paid on processing of hogs and the remainder on wheat, cotton, field corn, jute and sugar.

ROY MOLAN OPENING BAKERY IN SHEBOYGAN, WIS., JAN. 15

SHEBOYGAN, WIS.—Roy Molan, veteran in the baking industry, and for 20 years merchandise manager of the Purity Bakeries, Chicago, a chain of bakeries headed by his father, M. L. Molan, until recent retirement, is opening a new wholesale bakery in this city.

Mr. Molan has acquired a 10-year lease on the Mohr bakery property, which he will modernize and remodel at a cost of about $40,000, buying considerable new machinery and equipment. He is also planning to erect an addition to the present plant. In the contract Mr. Molan also has provided for an option for an additional 10-year lease on the property.

It is expected that the plant will be ready for production by Jan. 15. Ten persons will be employed at the start, producing 60,000 loaves of bread weekly. As operations continue the employment roll will be increased to about 25 persons.

BUCKWHEAT PROMOTION

KINGWOOD, W. VA.—The Preston County Millers Association, which was organized recently to promote the sale of buckwheat flour to improve the quality of the crop and to increase buckwheat acreage according to the demand for flour, has completed its organization by electing officers and arranging for a radio program.

The officers are: president, Herman Welch, of Bruceton Mills; vice president, R. C. Worting, of Brookside, and L. F. Silbaugh, of Bruceton Mills, secretary-treasurer. Directors are Guy H. Rumer, of Eglon, and C. R. Freeland, of Albright, with John Collins of Kingwood, as sales manager.

The new group represents about 90% of the county's milled buckwheat crop. This is the first united, aggressive step the millers have taken to promote the sale of Preston County buckwheat flour.

B. J. STOCKMAN DIES AT HOME IN DULUTH

Former Head of Duluth-Superior Milling Co. Was Identified With Flour Trade for 50 Years

DULUTH, MINN.—Benjamin J. Stockman, prominent in the milling and grain industries for more than 50 years prior to his retirement in 1932, died in a Duluth hospital Dec. 10. He was 76 years of age. His health had not been robust for several years, and death was attributed to infirmities of age.

Mr. Stockman was associated with the flour trade in the United States and Great Britain for more than 50 years. Born in Leith, Scotland, in 1863, his first connection with the flour industry was in association with his father in the importing flour trade at Leith. In 1892, he came to the United States and joined the L. C. Porter Milling Co., at Winona, Minn. In 1896, he organized the B. Stockman Co. to carry on a flour commission business in Minneapolis. A few years later, he bought an interest in the New Ulm (Minn.) Roller Mill Co. and became president of the company. After leaving the New Ulm company, Mr. Stockman was appointed manager of the Duluth-Superior Milling Co., in 1911, succeeding Ralph W. Jones. The Duluth-Superior company then, as now, was part of the Standard Milling Co., New York. In 1928, Mr. Stockman became president of the Duluth-Superior company.

The Late B. J. Stockman

After his retirement, Mr. Stockman, with his wife, traveled extensively in America and elsewhere, making one world tour. Mrs. Stockman died in 1935.

Surviving are a brother and a sister, both of whom live in Scotland, a nephew and several nieces. Funeral services were conducted Dec. 12 and burial was at Forest Hill cemetery, Duluth.

FLOUR TRIAL POSTPONED

NEW YORK, N. Y.—The trial of the alleged flour racketeers in the Court of General Sessions has been postponed until Jan. 3 by Judge John Freschi, because William W. Kleinman, counsel for one of the defendants, is in the federal court as defense attorney for Louis (Lepke) Buchalter. The four defendants are Max Silverman and his son, Herald; Samuel Schorr and William Goldis. Max Silverman, Schorr, William Goldis and his brother, Morris, are also under indictment for first degree murder in connection with the fatal shooting of William Snyder, president of the Teamsters Union, on Sept. 13, 1934, for which trial no date has been set.

"FREE" FEED SUPPLY LITTLE OVER AVERAGE

Total of Feed Grains Is Large, But Much Is Held Under Government Loans—Livestock Increases

Supplies of both forage crops and feed grains in the United States are again above average and, except in limited areas, are more than ample to meet livestock requirements. But excluding the quantity of corn now under seal because of government loans, the remaining supply is only slightly above the 1928-32 average in total quantity and in pounds per unit of livestock to be fed, according to the United States Department of Agriculture.

No material increase in the acreage of feed grains over the low acreage of the last three years is expected, and growing conditions about equal to the average of either the last three years or the last 50 years would result in a production about equal to the tonnage produced in 1939. Conditions about the same as the average for the period 1930-39, which includes the drouth years, would reduce production somewhere between 10 and 15% below the 1939 production.

Livestock numbers are expected to show an increase of about 7% during 1939 and some further increases in 1940. Present livestock, fed at about the same rate as during the period 1928-32, would consume about as much feed grain as was produced this year, and the total stocks of feed grain next July would be about the same as the holdings of last summer. Unless grain yields per acre are unusually high, it seems probable that supplies of feed grain per animal unit will be somewhat further reduced next season, and the livestock-feed price ratio will not be so favorable for livestock producers as it has been for the past two years.

The total supply of high protein feeds this season will probably be above that of last year and much above average. The supply of other by-product feeds this season is expected to be about the same as that of last season.

Feed grain prices during the winter and spring months are expected to average a little higher than a year earlier, but conditions which would cause a substantial advance from present levels are not expected.

Exports of feed grain are expected to be relatively small in 1940. Exports of livestock products are expected to show some increase in 1940, but are not likely to be large enough to have any material effect on the livestock situation in this country. Some improvement in the situation for feed grain producers is probable, however, as an indirect result of the expected increase in the incomes of domestic consumers, for such an increase would improve the domestic demand for livestock products and increase the prices that livestock feeders could pay for grain.

There appears to be a general tendency for farmers to increase production of hay along with increases in feeding requirements. The 1939 hay supply per animal is large, but with requirements increased by poor pastures, the carry-over next spring is not expected to be above the average during the pre-drouth years 1923-32. As a result of local drouth conditions in 1939, present supplies of both hay and feed grain are unevenly distributed among the states, and there are wide regional differences in present prices and in prospective carry-overs.

The total Oct. 1 supply of feed grains, including sealed corn, amounted to about 110,000,000 tons as compared with 101,000,000 tons last year, and 101,000,000 tons for the period 1928-32. These supply figures include Oct. 1 stocks of corn and oats, plus the Nov. 1 estimate of the 1939 production of corn, barley and grain sorghums. When the Oct. 1 supply as thus calculated is compared with the prospective number of livestock to be fed, the supply per animal unit is 2% smaller than the very large supply of last year, but 10% above the average Oct. 1 supply during 1928-32.

If from these supply calculations is deducted the corn already sealed (for this is not likely to be used extensively for feeding until prices rise above the October, 1939, level), the remaining supply is slightly above the pre-drouth average in total quantity and in supply per animal unit.

It is expected that a considerable quantity of corn from 1939 crop will be sealed, and that practically all the 1937 and 1938 corn sealed will be retained under seal or held by the government. Hence, if the total quantity of corn sealed or held by the government is deducted, the remaining supply of feed grains probably will be below the 1928-32 average.

The total supply of corn for 1939-40, including the Nov. 1 indicated production of 2,591,000,000 bus and the estimate of 561,000,000 bus for the Oct. 1 carry-over, is 3,152,000,000 bus, compared with 2,905,000,000 bus last year and 2,718,000,000 bus for the 1928-32 average.

Of the 1938 supply, about 257,000,000 bus were sealed for loans, leaving 2,648,000,000 bus unsealed. Indications are that the quantity of 1939 corn sealed may be larger than the quantity of 1938 corn sealed. In this event, the total quantity of corn neither under seal nor held by the government may be about the same as the total quantity of unsealed corn last year.

The domestic disappearance of corn amounted to 2,216,000,000 bus in 1937-38, and 2,311,000,000 bus in 1938-39, or 18.2 bus per grain consuming animal unit in each year.

—BREAD IS THE STAFF OF LIFE—

OHIO MILLS DECREASE, PRODUCTION STAYS SAME

The Ohio Millers State Association, in issuing a current list of 187 mills operating in Ohio with a total capacity of 33,605 bbls of flour daily, comments that "each year brings a reduction in the list, and in the last decade more than 100 firms have discontinued milling." Since Ohio production has been relatively unchanged while the number of mills has decreased, the association believes that the volume of business has increased for the remaining mills largely because of the others' failure. The following is a table currently prepared by the association, listing mills according to capacity groups and production:

Ohio mills according to capacity, in barrels:

No. of mills	Daily capacity groups	Total capacity
26	49 and below	650
91	50 to 99	5,255
41	100 to 199	4,550
14	200 to 499	3,050
7	500 to 999	3,600
8	1,000 and above	16,500
187		33,605

—BREAD IS THE STAFF OF LIFE—

PACIFIC N. W. FEED GROUP TO CONVENE IN FEBRUARY

The annual convention of the Pacific Northwest Feed Association will be a two-day affair this year instead of the customary one-day meeting. The New Washington Hotel in Seattle has been selected as convention headquarters and Feb. 21 and 22 have been named as the dates.

The first day of the meeting will be devoted to a study of nutrition and poultry diseases under the direction and sponsorship of the State College of Washington. The morning of the second day will feature a resume and discussion of experimental work being carried on by the college in regard to fertilizer.

The usual business session will be held in the afternoon and will be followed by a banquet and entertainment.

The convention committee is as follows: Al Anderson, general chairman, Albers Bros. Milling Co; Sidney Victor, vice chairman, Charles H. Lilly Co; Harold Bogan, Puget Sound Feed Co; Chet Burdic, Burdic's Feed Stores; Ronald Borgstedt, Fisher Flouring Mills Co; Bill Gee, Henry D. Gee Co; Ralph Johnstone, Tacoma Feed Co; Frank Lightfoot, Golden Eagle Milling Co; A. J. McFarlane, Fisher Flouring Mills Co; F. J. McKenzie, Albers Bros. Milling Co; O. J. Metzler, Centennial Flouring Mills Co; Karl Von Normann, Charles H. Lilly Co; Ned Shelton, State Department of Agriculture; Clay Whybark, American Potash Institute; Arthur Pittack, Arthur Pittack Co.

—BREAD IS THE STAFF OF LIFE—

FTC ACCUSES CONTINENTAL OF PRICE DISCRIMINATION

NEW YORK, N. Y.—The Federal Trade Commission has accused the Continental Baking Co., of this city, with price discriminations in violation of the Robinson-Patman Act. This company, which operates in 28 states, is alleged by the commission to sell its bread of like grade and quality and of a definite weight at one price in certain trade areas, while at the same time in another trade area, served from the same plant, it sold the same type of bread of the same grade, quality and weight, at a lower price.

Areas cited in the complaint are those served from the Shreveport, La., plant, where Louisiana and Texas retail customers were charged 10c for 24 oz of bread prior to February, 1939; but subsequently while still charging its Shreveport area customers the 10c, a 24-oz loaf was delivered from the same plant to customers in the Marshall, Texas, area for 8c a loaf.

Similar discrimination is charged in the Kansas and Missouri areas, where the 20-oz loaf is sold in the vicinity of Kansas City for 8c, while from the same plant a 24-oz loaf of the same quality bread is sold for 8c to customers in the Leavenworth and Osawatomie, Kansas, areas.

It is charged that such discrimination may tend to create a monopoly through a substantial lessening of competition. The company has been granted 20 days for filing answer.

—BREAD IS THE STAFF OF LIFE—

GENERAL BAKING DIVIDEND

NEW YORK, N. Y.—The board of directors of the General Baking Co. has declared a dividend of $2 per share for the quarter ending Dec. 30 on the $8 preferred stock, and a dividend of 15c per share on the common stock, both payable Dec. 23 to holders of record Dec. 16.

STUDENTS LEARN STORY OF BREAD AND BUTTER

WICHITA, KANSAS.—Miss Manty Harris, fourth grade teacher at Longfellow School in Wichita, has streamlined the teaching of geography. The pupils are studying history and geography of Wichita and Kansas in the fourth grade. In the study last week they learned that Kansas is an important producer of hard-winter wheat and that Wichita is an important milling center. They visited a flour mill to see wheat converted into flour and then they took the flour to school.

There they prepared dough, kneaded the dough with their hands, put it in pans, baked biscuits and ate biscuits spread with Wichita manufactured butter churned with cream from Kansas cows. Miss Harris reports that this method of teaching geography is widely used in the Wichita modern schools. She is certain that all of her pupils will be able to pass examinations with a grade of 100 when she gives them a test on Kansas wheat and Wichita flour.

OCTOBER PRODUCTION DROPS 1,760,000 BBLS

About Same as Year Ago, But Big Decrease From September Output, Which Boosts Third Quarter

WASHINGTON, D. C.—The Bureau of the Census reports that 1,054 mills, 1,000 of which accounted for 98,749,944 bbls of the total 1937 wheat flour production of 105,273,951 bbls, produced 9,427,603 bbls of flour and 376,425 tons of millfeed in October. This compares with the large September production of 11,191,001 bbls and 376,425 tons, with 1,054 mills reporting.

The previous year, 1,121 mills reported they had produced 9,631,210 bbls flour and 387,804 tons millfeed, operating at 60.5% of total capacity and using 273.1 lbs of wheat to make a barrel of flour. In October, 1939, mills reported an operating capacity of 61.5% and required 273.8 lbs of wheat to produce a barrel of flour, compared with the September figure of 75.9% and 274 lbs, respectively.

In October, 1939, reporting mills ground 43,024,778 bus wheat, compared with 51,101,057 the previous month and 43,896,454 the same month a year ago.

In October production, Kansas was first, with 1,457,866 bbls flour and 55,899 tons millfeed, or 15.5% of the total output for the month. New York followed with 1,251,947 bbls and 50,134 tons, or 13.3%. Third was Minnesota, with 1,147,359 bbls and 47,889 tons, or 12.2%, and Missouri fourth, with 879,407 bbls and 34,543 tons, or 9.3% of the total output.

The bureau also reports that an average of 1,805 mills, 1,425 of which accounted for 100,198,994 bbls of the total 1937 production, produced 29,415,095 bbls of flour and 1,189,285 tons millfeed during the third (July-September) quarter of 1939, compared with 27,592,975 bbls of flour and 1,119,150 tons millfeed produced by 1,932 mills the same quarter a year ago. In the second quarter of 1939, 1,822 mills produced 25,380,517 bbls of wheat and 1,037,687 tons millfeed.

—BREAD IS THE STAFF OF LIFE—

WHEAT FLOUR INSTITUTE ISSUES BAKING PRIMER

CHICAGO, ILL.—"A Primer of Bread Baking" is the name of the latest publication of the Wheat Flour Institute, which tells the how's and why's of the bread baking process. The booklet was written in response to hundreds of requests for this type of information.

Most of the questions about bread baking came from teachers of foods in high schools and colleges, and from leaders who work directly with homemakers. It is hoped that the primer will be useful to these people not only in their baking lessons, but also in answering the many questions about baking that come to them.

The front of the 40-page book contains information, while the last 18 pages contain tested recipes that have proved popular with women throughout the United States.

—BREAD IS THE STAFF OF LIFE—

100-BBL WEST VIRGINIA MILL WILL BE SOLD AT AUCTION

The property of the Hinton (W. Va.) Milling Co. will be sold at public auction Dec. 16 to satisfy a claim of $22,533.50 for a $5,000 loan, interest and back taxes, the auditor's office at Charleston, W. Va., has announced. Assistant Auditor Cleveland Bailey and Frank Lively, former supreme court judge, will conduct the sale at Hinton. The loan was made by the board of the $1,000,000 irreducible school fund in 1917 and renewed in 1922 and 1932. The mill has a daily capacity of 100 bbls.

SUBSIDIZED WHEAT, FLOUR EXPORTS TOTAL 22,701,000 BUS

Drouth and Uncertainties Created by War Put Program on Conservative Basis—September Exports Off Sharply

WASHINGTON, D. C.—The Department of Agriculture has announced that contracts were made during the five-month period July 1 through Nov. 30 for the exportation of 22,701,431 bus of wheat under the three phases of the department's general wheat and flour export program. This total includes contracts made during October and November for the exportation of 5,966,044 bus.

In view of the uncertainties brought about by the European situation and by drouth conditions in some of the wheat producing areas in this country the programs are being operated on a conservative basis. Contracts were made under the bid-payment program from the beginning of the program on Aug. 19, 1939, through Nov. 30, 1939, for the exportation of 4,958,147 bus of wheat. Of this amount contracts were made for the exportation of 4,101,000 bus prior to the outbreak of war on Sept. 1, for the exportation of only 445,106 bus during the month of September, and for the exportation of only 412,041 bus during the months of October and November.

During the five-month period the Federal Surplus Commodities Corp. sold 8,977,971 bus of wheat to United States exporters for export. This was out of the total of 14,220,000 bus of 1938 loan wheat which the Federal Surplus Commodities Corp. had purchased from the Commodity Credit Corp. up to the end of October for sale to United States exporters.

Under the flour export program, contracts were made during the five-month period ending Nov. 30 for export indemnity payments on the exportation of 1,905,504 bbls of flour, the equivalent of 8,765,313 bus of wheat.

The total of the contracts made under the three phases of the export program is the 22,701,431 bus figure for the July 1 to Nov. 30 period. Export benefit payments on wheat and flour during this period averaged about 32c bu. This average includes not only payments on wheat under the bid payment plan and the export indemnities on flour but also the difference in price at which the Federal Surplus Commodities Corp. bought the loan wheat from the Commodity Credit Corp. and the price at which the wheat was sold to exporters.

STAMP PLAN OF LITTLE AID TO WHEAT PRODUCER

Although over 13% of the blue surplus stamps are used to purchase flour, and as important as the possible sales increases are from the point of view of the miller and the consumer, they hold relatively little promise for farmers growing wheat, declared Milo Perkins, president of the Federal Surplus Commodities Corp., in an address before a committee of the American Farm Bureau Federation, in Chicago, Dec. 4.

"The increase in the number of bushels of wheat which might be consumed as flour would represent only a fraction of the total crops now being produced," he pointed out.

Preliminary figures indicated that about 25% of the stamps were used for butter, 25% for eggs and about 13% for flour. These figures were based on results shown in three cities. If the program was expanded to a national basis, about 15,000,000 persons would be involved and, on the basis of previous data, would offer a potential market for 294,000,000 lbs of butter, over 300,000,000 doz eggs and about 30,000,000 bus of wheat in the form of flour, he said.

—BREAD IS THE STAFF OF LIFE—

F. C. BRADEN WITH PILLSBURY

The Pillsbury Flour Mills Co., Minneapolis, announces the appointment of Frank C. Braden as a special representative in its bakery flour sales division. He will work under the general sales department at Minneapolis, but will have his office in the New York City branch of the company. Mr. Braden was formerly connected with the dry milk division of the Borden Co.

—BREAD IS THE STAFF OF LIFE—

KROGER EXPANSION

The Kroger Grocery & Baking Co., St. Louis, Mo., is spending $300,000 in constructing an additional story to its building at Chouteau and Spring Avenues to increase the floor space of the present building by approximately 50,000 square feet, thus providing for the expansion of bread, layer cake and pastry, coffee and cracker and cooky departments.

WHOLESALERS PLAN FIGHT AGAINST WAGE-HOUR LAW

NEW YORK, N. Y.—The Council of National Wholesale Associations, which represents all lines of wholesaling in which large volume business is done, met here recently and adopted recommendations for its member associations to support an effort to secure relief from what was called "unwise, uneconomic and disruptive burdens" resulting from the interpretations of the Fair Labor Standards Act of 1938.

M. L. Toulme, secretary of the National American Wholesale Grocers Association and chairman of the council, was appointed chairman of the committee which will go to Washington to represent the council in a conference with Colonel Philip Fleming.

Every member of every trade association has been asked to tell his members of Congress of the hardships resulting from the act. An amendment to the wage-hour law section of the act will be asked to exempt wholesalers from overtime.

—BREAD IS THE STAFF OF LIFE—

STORED CORN REPORTED CRUSTING ON TOP OF BINS

DES MOINES, IOWA.—Many reports have been received by the Western Grain & Feed Dealers Association from firms throughout the corn belt that corn stored in bins under the plan of the Commodity Credit Corp. is heating at the top. Apparently, the grain went into the bins at such a high temperature that on the first cold days, moisture in the warm air, after rising through the corn, condensed when it hit the cold upper levels, it is reported.

Some bins are said to be crusted over with a top layer of soggy corn, with grain actually sprouting at one station in northern Iowa. Storage operators are advised to watch their bins incessantly because of weevil, angoumois moth and other insect infestation promoted by undesirable moisture conditions.

In the case of moisture condensation, instructions may be obtained by writing or wiring details to Ivan Harden, of the Commodity Credit Corp., 164 West Jackson Boulevard, Chicago, at the same time notifying the local county committee. Permission will then be granted the operator to skim off the crust of damaged corn, and the county committee will be able to give instructions as to its disposal.

Operators are also reminded that, as long as the temperature of the grain keeps going down, there is nothing to fear. When the temperature rises abruptly, however, it is time to act quickly in an effort to protect the grain.

—BREAD IS THE STAFF OF LIFE—

PHIL MOHLER NOMINATED BY PITTSBURGH FLOUR CLUB

PITTSBURGH, PA.—Phil A. Mohler, representative of the William Kelly Milling Co. in western Pennsylvania, was nominated for the presidency of the Pittsburgh Flour Club at a meeting of the club held at the Roosevelt Hotel on Dec. 2. Ben H. Peoples presided.

C. E. Vickery, chairman of the nominating committee, submitted the following additional nominations: vice president, Arthur Van Dugteren, Commercial Milling Co; treasurer, V. M. Wintermantel, broker, and secretary, C. C. Latus. Directors nominated include W. C. Sweet, E. M. Peck and E. J. Bernel. The annual election will be held Jan. 5.

It was agreed to have a room sponsored by the club at the William Penn Hotel during the convention of the Pennsylvania Bakers Association Feb. 4-6 for the convenience of callers. It was also decided to hold the annual dinner dance on Easter Monday, the place to be announced later.

B. V. Hopper, of the Standard Milling Co., and William A. Smith, of the Bay State Milling Co., were elected to membership. A. W. Hockenberger won the door prize.

—BREAD IS THE STAFF OF LIFE—

NEW McMILLEN SOYA PLANT NEARLY FINISHED

Heavy steel work on the four-story soybean processing and feed mixing plant now being erected at Gibson City, Ill., by McMillen Feed Mills, Inc., is completed. Since the 1,200,000-bu storage bins are also finished, it is expected that the plant will start operating shortly after the first of the year. Training local employees in processing work has already been begun by men from the firm's Decatur, Ill., headquarters. Recently the Gibson City Chamber of Commerce brought 110 local business men to visit McMillen plants at Decatur.

—BREAD IS THE STAFF OF LIFE—

UNION BAKERS OPTIMISTIC

GREEN BAY, WIS.—Wisconsin's baking industry is enjoying appreciable increases, according to delegates attending the annual meeting of the Wisconsin State Board of Bakers (AFL) here. Officers of the organization reported that several contracts have been signed with bakers calling for vacations with pay, the first of their kind in the industry. Extra compensation for night work is also provided in many of the new contracts signed.

OKLAHOMA CITY, OKLA.—"I'd rather see a good stand of wheat than see the best moving picture ever made," declared Mrs. D. J. Holliday, 78-year-old Canadian county pioneer, after seeing her first picture show on Thanksgiving day. "I've seen better things," she remarked of the picture which starred two high salaried picture artists. She added that she hadn't lived in the backwoods either. As a matter of fact, Mrs. Holliday comes from a very prosperous wheat farming district, and the wheat lands have an appeal that the cinema does not. "No, I won't be going any more. One is enough," she added.

Land Sakes!

FSCC FLOUR PURCHASE TOTALS 42,300 BBLS

Five Milling Companies, All in Southwest, Are Successful Bidders for Relief Flour Business Placed Dec. 11

WASHINGTON, D. C.—Five milling companies, all in the Southwest, shared in the sale of 42,300 bbls of white flour to the Federal Surplus Commodities Corp. on Dec. 11. The flour is of types B and C—the former being a mixed hard and soft wheat product and the latter a soft wheat flour. It is to be distributed for relief purposes in Mississippi and Florida.

Deliveries are to be made during the period beginning Dec. 18 and ending Jan. 6.

Successful bidders for the business were the Rodney Milling Co., Kansas City; International Milling Co., Greenville, Texas; Maney Milling Co., Omaha; Moundridge (Kansas) Milling Co., and the J. C. Lysle Milling Co., Leavenworth, Kansas.

—BREAD IS THE STAFF OF LIFE—

ADDITIONAL TERRITORIES GET FOOD STAMP SCHEME

The food order stamp plan for distributing surplus agricultural commodities has been extended to Portland, Oregon, and the adjacent territory within Multnomah County; Macon, Ga., and the adjacent area within Bibb County; and Akron, Ohio, including the cities of Barberton and Cuyahoga Falls.

Gallup Poll Shows Approval

A large percentage of the public favors the stamp plan as a method for the distribution of surplus foods, according to statistics compiled by Dr. George Gallup's American Institute of Public Opinion. His report showed that 70% approved of the plan and 30% were opposed. Approximately 8 out of 10 Democrats voted in favor of the plan as against only 6 out of every 10 Republicans. Only 57% of the persons questioned favored the extension of the plan to include those whose weekly income was less than $20; 43% were opposed.

—BREAD IS THE STAFF OF LIFE—

ROBIN HOOD FLOUR MILLS TO BUILD ONTARIO PLANT

MONTREAL, QUE.—The Robin Hood Flour Mills, Ltd., has awarded contracts for the construction of buildings to house a 2,000-bbl mill, and a 1,500,000-bu elevator at Humberstone, Ont., on the Welland Canal. Work will begin on the buildings early in 1940. According to the company, the cost will be over [illegible]. So far, no contracts for machinery to equip the mill have been awarded. The new unit will give better service on shipments for export and to eastern markets. The Robin Hood Flour Mills, Ltd., already operates mills at Moose Jaw, Saskatoon and Calgary, and a dock and warehouse at Vancouver.

—BREAD IS THE STAFF OF LIFE—

SOUTH AMERICAN BRAN OFFERED AT LOW PRICES

The Agricultural Marketing Service reports that South American bran and middlings, scheduled to arrive at Atlantic ports next month, was quoted during the week at $23.75 for New York or Philadelphia delivery, duty paid. Canadian bran and middlings were offered in New York and Philadelphia at $26.75, or about 75c ton under domestic prices for the same feeds.

—BREAD IS THE STAFF OF LIFE—

VANCOUVER BREAD PRICE WAR

Safeway Stores, Ltd., have joined in the bread price war at Vancouver, B. C., and recently advertised a sliced or unsliced loaf at 5c.

FLOUR SALES, IN VIEW OF WHEAT ADVANCE, DISAPPOINT MILLERS

Southwestern Business Continues Good, But Spring Wheat Mills Fail to Hold Gain of Previous Week—Prices Keep Pace With Grain Strength

Although winter wheat flour sales maintained and even bettered the increase made a week ago with the advance in wheat, spring wheat mills did not fare so well. Winter wheat mills sold to 72% of capacity during the week, compared with 65% the previous week and 19% the corresponding week last year. New business for spring wheat mills, however, dropped from the previous week's high of 135% to a comparatively meager percentage just short of 60. Northwestern sales a year ago were 93% of capacity.

Southwestern business consisted in scattered sales to bakeries and family flour distributors, few of which amounted to more than 5,000 bbls. Sales arguments which helped maintain the increase for southwestern mills were mainly the continued drouth in winter wheat areas and the indicated reduction in the Argentine crop.

Buyers in the northwestern market, meanwhile, did not continue to come through after the brief flurry of sales were made the previous week. Many of them have indicated to millers, however, that they are still interested—especially in bargain prices. The optimism which grew out of the advance in wheat has almost disappeared among spring wheat millers, who now look for little improvement until after the turn of the year.

PRICES

The week's continued strength in wheat was reflected in flour prices, with spring wheat grades (excepting standard patent) moving upward 10@35c and winter wheat flours forging ahead about 35c. Even though it is said that some sales are being made at very low levels, most spring wheat millers, with an eye to weakness in the trend of millfeed, are keeping their prices in tune with the wheat market.

CLEARS

Spring wheat clears followed patents in rising with wheat, but their winter wheat equivalents did not respond to the advance so wholeheartedly, managing to push ahead only 5c over the levels of the previous week. Demand for clears in the Northwest is perhaps less than it has been for some time.

EXPORTS

Although the larger milling centers reported little or no export interest during the week, a few southwestern mills made fair sales to South American countries. Oriental business continues quiet, with Puget Sound mills selling a small amount to Hongkong, the first volume in many weeks. It is reported that the Philippine Islands are buying somewhat more freely for January-February-March shipment than a week ago.

MILLFEED

Although feeders are on the threshold of winter, mild weather has restricted them all fall from buying as heavily as they normally might, and the fact that millfeed supplies are rather low is not pushing them on to larger purchases. At larger centers of millfeed production and distribution, the price trend is lower and demand is waning, despite higher wheat levels and continued small production. Some say that stocks are not sufficient to meet the rush that is sure to come with the onslaught of honest-to-goodness, old-fashioned winter. Buying has been restricted to immediate needs, barely enough to take care of the limited production.

PRODUCTION

For the week ending Dec. 9, 1939, mills representing 61% of the total United States flour production reported to THE NORTHWESTERN MILLER that they had produced 1,276,711 bbls of flour, compared with 1,200,733 the previous week, 1,255,180 the same week last year, 1,220,687 two years ago and 1,218,108 three years ago. The largest single gain in production over the previous period was that made by northwestern spring wheat mills, which reported an increase of 57,000 bbls. Mills of the Southeast, including Kentucky, Tennessee, Virginia and Georgia, reported the aggregate increase of 11,715 bbls, while southwestern mills reported a 10,740-bbl gain.

For sectional and weekly comparison, a detailed production table appears on page 15.

—BREAD IS THE STAFF OF LIFE—

CHEMICAL EXPOSITION HIGHLIGHTS PROGRESS

Many Exhibitors at Last Week's Show in New York Are Widely Known to Milling Industry

NEW YORK, N. Y.—At a time when so much of the world is engaged in destruction, as opposed to constructive enterprises, the Seventeenth Exposition of the Chemical Industries, held in the Grand Central Palace, New York, from Dec. 4 to 9, was a bright spot in the progress of civilization. Three floors of the huge Grand Central Palace were crowded with exhibits, and every one was devoted entirely to constructive activities.

To describe this exposition properly would require the combined effort of chemists, engineers and others trained in the chemical industries. Many of the exhibits naturally held no direct interest for the milling industry. On the other hand, many manufacturers who are widely known among millers were represented, featuring for the most part the machinery and equipment they make for the chemical industries.

For instance, bags and other forms of packaging equipment were prominent among the exhibits. Among the firms exhibiting in these groups were the Chase Bag Co., Bemis Bros. Bag Co., St. Regis Paper Bag Co. and the Fulton Bag & Cotton Mills. Companies showing other types of packaging and filling equipment included the Stokes & Smith Co.

Another large group of exhibits dealt with sifting and mixing machines. Among such exhibitors were the Abbe Engineering Co., Inc., Read Machinery Co., Inc., Lancaster Iron Works, Inc., Baker Perkins Co., Inc., Allis-Chalmers Mfg. Co., Great Western Mfg. Co., B. F. Gump Co., J. H. Day Co., Gruendler Crusher & Pulverizer Co., and the Ajax Flexible Coupling Co.

Scales and weighing equipment were another prominent part of the exposition. Among such exhibitors were Kron Co., Pneumatic Scale Corp., Exact Weight Scale Co. and the Toledo Scale Co.

Research and testing equipment was featured in many exhibits, such, for instance, as those of the C. J. Tagliabue Mfg. Co., Taylor Instrument Co., Leeds & Northrup Co. and the Brabender Corp.

Among other exhibitors were the Robinson Mfg. Co., showing a hammer mill and gyro-sifter; Sprout, Waldron & Co., Inc., sifters and mixers; Richmond Mfg. Co., gyro-whips, sifters and graders; Charles Pfizer & Co., Riboflavin—Vitamin B; Buffalo Foundry & Machine Co., double drum dryer; Quigley Co., industrial paints; Jay Bee Sales Co., products of J. B. Sedberry, Inc; Williams Patent Crusher & Pulverizer Co., roller mill and separator; Fuller Co., conveyors; Pulverizing Machinery Co., pulverizers; Lewis-Shepard Sales Corp., lift trucks; Borden Co., Casein Division.

Included in the largest exhibits at the exposition were those of the Westinghouse Electric & Mfg. Co. and the General Electric Co.

—BREAD IS THE STAFF OF LIFE—

ONAWA, IOWA, FLOUR MILLS TAKEN OVER BY NEW FIRM

The Onawa (Iowa) Flour Mills, until recently operated by William Quilling, has been taken over by Richard Boyer and E. E. Fulenwider, of Des Moines. The latter have incorporated under the name of the Northwestern Milling Co. Mr. Boyer is a lawyer and Mr. Fulenwider, a flour broker of several years standing in Des Moines. The mill has a capacity of 50 bbls, but it is understood that the new owners have purchased the equipment of the Merritt mill at Dunlap, Iowa, and with this will increase the capacity of the Onawa mill to about 150 bbls.

—BREAD IS THE STAFF OF LIFE—

DEATH OF GEORGE ROTHWELL

WINNIPEG, MAN.—George Rothwell, director of production service in the Dominion agricultural department and formerly Dominion livestock commissioner, died in Ottawa Dec. 3. He was one of the best known agricultural authorities in Canada. He is survived by his widow, a son and daughter. He was 55 years old.

HIGHER OUTPUT WEIGHS FEED FUTURES DOWN

Heavy Imports of Canadian Millstuffs Considered Very Significant as a Market Factor

Weight of slightly higher output, an even more constricted territory, and lack of demand from mixers pressed millfeed options lower in Kansas City and St. Louis. Options were depressed, as feed men showed little inclination to buy. Mills are not selling their feed in the options because many still feel confident that the basic situation is bullish. Heavy importation of Canadian feed and prospects of continuation of this throughout the winter is considered very significant. Cash feed values, in the face of bulging grain price, continued their downward course.

Closing prices of millfeed futures on the St. Louis Merchants Exchange in dollars per ton, Monday, Dec. 11:

	Gray Shorts	Del. in Chicago Bran	Midds.
December	23.26	21.25	24.50
January	23.75	22.20*	25.00
February	24.25	22.35	22.50
March	24.75	22.60	23.00
April	25.25	22.25	23.25
May	24.75	21.00	23.50

All quotations bid. *Nominal

Closing prices of millfeed futures on the Kansas City Board of Trade in dollars per ton, Monday, Dec. 11:

	Bran	Shorts
December	18.85	21.75
January	18.85	22.00
February	19.20	22.50
March	19.45	22.80
April	19.15	23.25
May	18.60	22.10

All quotations bid.

FEED MARTS TAKE UPWARD TREND ON RISE IN GRAIN PRICES

Other Strengthening Influences Are Lighter Offerings and Good Manufacturers' Inquiry—Greatest Gains Made by High Protein Concentrates, Led by Soya Meal

Feed markets continued on an upward trend during the week, influenced principally by higher grain prices, light offerings for immediate shipment and a good inquiry from mixed feed manufacturers. High protein concentrates, led by soybean meal, made the greatest gains. Wheat feeds were up slightly at most markets, while corn by-product feeds were firm to somewhat higher than a week earlier. The index number of wholesale feedstuff prices advanced to 122.2 compared with 120.3 for the previous week and 98.9 for the corresponding period last season.

Wheat millfeed market strengthened slightly but the advance was largely seasonal. Mill offerings for immediate shipment remained light, with most of the current output moving out on previous orders or in mixed car shipments. The relatively high prices of millfeeds this season have resulted in increased competition from Canadian and Argentine wheat feeds, and rather liberal offerings of Canadian bran and middlings in eastern markets have recently tended to check price gains. Imports of bran and middlings during the first four months of the current season totaled nearly 149,000 tons, compared with less than 10,000 tons imported during the corresponding months last year. Withdrawals from bond this season through October amounted to nearly 64,000 tons compared with 11,000 tons for the corresponding months last year. The average price of bran at the leading markets at the close of the first week in December this season was about $24.20 ton, compared with $18.90 a year ago. Some South American bran and middlings due to arrive at Atlantic ports in January were quoted at $23.75, delivered Philadelphia or New York, duty paid, while Canadian millfeed was offered at $26.75.

Oil seed cakes and meals were firm, and prices of soybean meal and linseed meal advanced around $1 ton. Scarcity of offerings for immediate shipment, together with a continued active inquiry from feeders and mixed feed manufacturers, were the principal strengthening influences. Advances in the prices of soybeans were an additional strengthening factor in the market for soybean meal.

The cottonseed meal market averaged higher, with the principal gains in the Mississippi Valley and Texas areas.

Linseed meal strengthened, influenced principally by the advance in soybean meal. Demand was fairly active in Minneapolis and other points where freight rates were favorable. In the Central West competition from soybean meal limited takings of linseed meal.

Corn feeds advanced, influenced by a good demand and higher grain prices. Other feeds were mostly steady to somewhat firmer.

—BREAD IS THE STAFF OF LIFE—

Bonded Grain in the United States

Bonded grain in the United States Dec. 9, 1939, in bushels (000's omitted):

	Wheat	Corn	Oats	Rye	Barley
Baltimore	6,720	..	52	8	195
Boston	1,822	..	..	..	..
Buffalo	1,813	..	1,163	337	844
Afloat	6,519	..	515	219	204
Duluth	2,312	..	..	..	..
New York	7,164	..	..	211	888
Philadelphia	2,855	..	..	..	..
Lakes	319	..	..	..	..
Totals	29,521	..	1,730	775	2,131
Dec. 2, '39	28,422	..	1,333	961	1,773
Dec. 10, '38	5,599	..	..	..	21

BULLISH TREND STILL HOLDS IN WHEAT MART

Prices Higher During Past Week, But Fade on Weather Reports From S. W.—Argentine Crop Hard Hit

Wheat prices advanced steadily during the past week, but began to fade on Dec. 11 on reports indicating unsettled weather in the Southwest. Heavy liquidation resulted. Adding to the easier tone in domestic markets was the weakness which developed at Winnipeg.

In spite of the late recessions, wheat prices for the week were higher than a week ago, with Minneapolis December showing a gain of ¾c, Kansas City 1⅛c and Winnipeg ⅛c. Chicago was off ⅛c.

The market borrowed its bullish action from reports of substantial damage in Argentina, poorer prospects in Australia, continued heavy exports from Canada and the serious condition in the hard winter wheat belt of the United States.

Frost damage in Argentina has been great. Estimates have slipped steadily from the 200,000,000 bus or more predicted earlier to as low as 136,000,000 bus. Now most of them center about 150,000,000. The Northwestern Miller's observer, however, suggests a final production of 155,000,000 bus. At any rate, the final yield will be much under the average for the past seven years of 237,000,000 bus. Last year the production amounted to 336,000,000 bus.

Harvesting is progressing in Australia, but frost and rust damage reports are increasing. It is becoming apparent that earlier expectations will not be realized, but it is almost certain that the final yield will be larger than last year's crop.

Private estimates of the winter wheat crop in the United States suggest a condition about the lowest of record. The forecasts averaged 389,000,000 bus, with the acreage seeded between 44,300,000 and 43,500,000. Rain is urgently needed in both the Southwest and the Northwest. The spring wheat outlook is not particularly bright. Little moisture has been received so far and with the arrival of cold weather, long postponed, the ground will freeze solidly and prevent any moisture from soaking in.

Export business in Canadian wheat and flour was placed at more than 5,000,000 bus, with about 20% representing flour business. The bulk of the wheat sold abroad was for neutrals, with Norway by far the best individual buyer. It was suggested that some of the purchases by Norway may possibly be for rail shipment to both Sweden and Finland, but confirmation is lacking.

Demand for cash wheat at Minneapolis turned a little duller with the rapid advance in the futures. Although open market offerings were light from day to day, yet mill demand was not active. Minneapolis received 710 cars of all classes of wheat, while Duluth unloaded 398. Receipts at Kansas City continued moderate at 325 cars and the total at nine winter wheat markets aggregated 1,056 cars.

——BREAD IS THE STAFF OF LIFE——

NEW YORK CHEMISTS MEET

The meeting of the New York Section, American Association of Cereal Chemists, on Dec. 5 drew an attendance of 80. Dr. Aksel G. Olsen, of the General Foods Corp. Central Laboratories, covered very thoroughly recent developments in the chemistry and utilization of pectin in the various fields, and he was plied with a large number of questions. A film taken at the Kansas City convention last spring was then shown. The January meeting of the section will be held on Jan. 9 because of the closeness of the first Tuesday to New Year's Day. Dr. E. Elion, now of this country but formerly director of the Institute for Zymo Technology in Holland, will be the speaker.

——BREAD IS THE STAFF OF LIFE——

JUDSON-SHELDON MERGER

New York, N. Y.—Merger of the Judson Freight Forwarding Co., established in 1873, and G. W. Sheldon & Co., custom house brokers, founded in 1870, will become effective Jan. 1. The new organization will be known as the Judson-Sheldon Corp. The united companies will be represented by the National Carloading Corp. as agents in more than 80 United States cities, in addition to its own 10 export and import offices and consignment stations.

——BREAD IS THE STAFF OF LIFE——

COTTON MARTS CONFUSED AS SUBSIDY IS REDUCED

Bemis Bro. Bag Co.'s cotton goods index, a composite figure reflecting wholesale prices of principal cotton cloth used in bag making expressed in cents per yard of cloth, is 4.69 as compared with 3.78 a year ago. The Bemis composite figure reflecting duty paid early shipment prices of heavy and lightweight Calcutta burlap expressed in cents per lb of cloth is 14.37 as compared with 7.54 a year ago.

New York, N. Y.—Cotton markets were confused, as the trade endeavored to readjust its ideas to the reduced export subsidy rate. A large volume of foreign business was done in the ninehour interval before the rate went into effect, greatly reducing available funds and giving support to the futures market. Later all prices advanced on active domestic trading, with volume contract turnover.

Practically all interests came into the market, and firmer outside markets helped the tone. Private crop estimates, issued in advance of the government report, averaged about 100,000 bales less than November indications.

Burlap prices were easier, as reports on supplies from Calcutta were confusing. The lack of demand also was felt. Representatives of some of the bag companies reported a definite switch from burlaps to cottons, with possible increase for paper bags in some fields. Other bag manufacturers stated that there was no burlap scarcity and that the current situation merely resulted from disarranged shipping schedules.

——BREAD IS THE STAFF OF LIFE——

Imports of Canadian Wheat

The United States Department of Commerce reports imports of Canadian wheat at the principal northern border ports as follows:

Week ending Dec. 2	Week ending Nov. 25	July 1-Dec. 2, 1939
.....	.....	2,000

Imports into bonded mills for grinding into flour for export, bus:

Week ending Dec. 2	Week ending Nov. 25	July 1-Dec. 2, 1939
[illegible]	121,000	1,544,000

Rye Flour Output

Following is the rye flour output reported to The Northwestern Miller by mills at Chicago, Minneapolis and outside points in the Northwest, in barrels, with comparative figures for the previous week:

	Week ending Dec. 2	Week ending Dec. 9
Five mills	11,931	*13,591

*Four mills

Millfeed Receipts and Shipments

Receipts and shipments of millfeed at the principal distributing centers for the week ending Dec. 9, in tons, with comparisons:

	Receipts 1939	Receipts 1938	Shipments 1939	Shipments 1938
Minneapolis	...	[illegible]	[illegible]	3,405
Kansas City	[illegible]	[illegible]	3,325	3,425
Philadelphia	[illegible]	[illegible]	...	...
Milwaukee	[illegible]	100	2,859	[illegible]

Flaxseed Receipts, Shipments and Stocks

Receipts, shipments and stocks of flaxseed at principal primary points for the week ending Dec. 9, in thousand bushels, with comparisons:

	Receipts 1939	Receipts 1938	Shipments 1939	Shipments 1938	Stocks 1939	Stocks 1938
Minneapolis	[illegible]	[illegible]	[illegible]	27	3,959	[illegible]
Duluth	[illegible]	...	[illegible]	[illegible]	[illegible]	119

Current Flour Production

An Exclusive Statistical Service Maintained for Readers of The Northwestern Miller for More Than a Quarter of a Century

WEEKLY FLOUR PRODUCTION

(Reported by mills producing 61% of the flour manufactured in the U. S.)

	Dec. 9, 1939	Previous week	Dec. 10, 1938	Dec. 11, 1937	Dec. 12, 1936
Northwest	[illegible]	223,613	[illegible]	261,918	263,337
Southwest	[illegible]	452,384	[illegible]	477,570	[illegible]
Buffalo	163,958	161,916	[illegible]	151,781	[illegible]
Central West—Eastern Div.	132,241	137,306	116,121	80,255	[illegible]
Western Div.	68,382	73,805	[illegible]	[illegible]	63,260
Southeast	38,201	28,486	[illegible]	*[illegible]	*[illegible]
Pacific Coast	130,193	[illegible]	[illegible]	56,531	[illegible]
Totals	1,276,711	1,200,733	1,255,180	1,220,687	[illegible]

*Includes Indiana, since 1937 under Central West, Eastern Division.

	Percentage of activity: Dec. 9, 1939	Previous week	Dec. 10, 1938	Dec. 11, 1937	Dec. 12, 1936	Crop-year production July 1 to Dec. 9, 1939	Crop-year production July 1 to Dec. 10, 1938
Northwest	[illegible]	[illegible]	[illegible]	38	[illegible]	[illegible]	7,506,189
Southwest	[illegible]	65	68	67	[illegible]	11,[illegible]	11,517,697
Buffalo	51	[illegible]	56	61	[illegible]	4,708,533	[illegible]
Central West—							
Eastern Div.	80	80	66	[illegible]	55	[illegible]	[illegible]
Western Div.	58	63	42	[illegible]	40	[illegible]	[illegible]
Southeast	70	49	[illegible]	66	72	[illegible]	1,[illegible]
Pacific Coast	59	53	64	56	35	3,394,398	2,357,167
Totals	60	[illegible]	56	[illegible]	55	32,109,455	[illegible]

THE SOUTHWEST

56 Representative Mills

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	399,600	[illegible]	62
Previous week	399,600	[illegible]	58
Year ago	397,200	[illegible]	61
Two years ago	400,200	[illegible]	62
Five-year average			59
Ten-year average			58

Kansas City

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	175,200	124,558	72
Previous week	175,200	137,707	79
Year ago	175,200	132,021	75
Two years ago	190,500	143,654	75
Five-year average			69
Ten-year average			68

Wichita

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	56,700	[illegible]	66
Previous week	56,700	[illegible]	58
Year ago	56,700	43,692	[illegible]
Two years ago	62,400	42,329	68

Salina

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	56,100	52,403	[illegible]
Previous week	56,100	51,480	[illegible]
Year ago	56,100	52,181	[illegible]
Two years ago	56,100	44,479	[illegible]

PACIFIC COAST

Principal mills on the North Pacific Coast:

Seattle and Tacoma District

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	147,300	78,155	[illegible]
Previous week	147,[illegible]	[illegible]	[illegible]
Year ago	98,100	[illegible]	[illegible]
Two years ago	98,100	55,031	56
Five-year average			[illegible]
Ten-year average			[illegible]

Portland District

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	74,600	52,038	[illegible]
Previous week	74,600	43,524	[illegible]
Year ago	57,300	42,[illegible]	[illegible]
Two years ago	57,300	31,[illegible]	55
Five-year average			[illegible]
Ten-year average			61

BUFFALO

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	[illegible]	163,958	54
Previous week	[illegible]	161,916	[illegible]
Year ago	294,[illegible]	[illegible]	[illegible]
Two years ago	294,[illegible]	[illegible]	61
Five-year average			[illegible]
Ten-year average			[illegible]

THE NORTHWEST

Principal interior mills in Minnesota, including Duluth, St. Paul, North Dakota, South Dakota, Montana and Iowa:

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	389,550	177,545	[illegible]
Previous week	389,550	159,590	[illegible]
Year ago	409,650	175,585	[illegible]
Two years ago	403,250	140,452	[illegible]
Five-year average			[illegible]
Ten-year average			[illegible]

Minneapolis

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	180,900	103,068	57
Previous week	180,900	70,506	39
Year ago	258,900	[illegible]	[illegible]
Two years ago	279,600	[illegible]	[illegible]
Five-year average			[illegible]
Ten-year average			[illegible]

CENTRAL WEST

Eastern Division

Mills in Ohio, Indiana and Michigan, including those at Toledo:

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	[illegible]	132,241	[illegible]
Previous week	172,620	137,306	[illegible]
Year ago	177,120	116,124	[illegible]
Two years ago	130,[illegible]	80,255	[illegible]
Five-year average			[illegible]
Ten-year average			[illegible]

Western Division

Mills in Illinois and eastern Missouri, including the Chicago and St. Louis districts:

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	117,600	68,382	58
Previous week	117,600	73,806	63
Year ago	165,300	69,431	[illegible]
Two years ago	[illegible]	[illegible]	[illegible]
Five-year average			49
Ten-year average			53

THE SOUTHEAST

Output of Kentucky, Tennessee, Virginia and Georgia mills, reporting each week to the Southeastern Millers Association:

	Weekly capacity bbls	Flour output bbls	Pct. of activity
Dec. 3-9	[illegible]	[illegible]	79
Previous week	[illegible]	[illegible]	49
Year ago	[illegible]	[illegible]	[illegible]
Two years ago	*[illegible]	[illegible]	[illegible]
Five-year average			[illegible]
Ten-year average			66

*Includes Indiana, since 1937 under Central West, Eastern Division.

MILLFEED OUTPUT

Production of millfeeds, in tons, for the current and prior two weeks, together with season totals of (1) all mills of Nebraska, Kansas and Oklahoma and the cities of Kansas City and St. Joseph; (2) all mills of Minnesota, North and South Dakota and Montana, including Minneapolis, St. Paul and Duluth-Superior; (3) mills of Buffalo, N. Y. (computed from operation reports made to The Northwestern Miller by more than three fourths of the flour milling capacity of the territories included):

	Southwest Weekly production	Southwest Crop year to date	Northwest Weekly production	Northwest Crop year to date	Buffalo Weekly production	Buffalo Crop year to date	Combined Weekly production	Combined Crop yr. to date
Dec. 3-9	21,599	[illegible]	[illegible]	[illegible]	6,148	17[illegible]	39,306	1,001,793
Previous week	20,598		9,734		6,184		35,626	
Two weeks ago	21,695		10,757		5,519		37,971	
1938	[illegible]	523,038	11,355	258,470	4,234	160,453	39,388	991,981
1937	[illegible]	[illegible]	10,673	262,778	5,517	172,[illegible]	34,971	979,522
1936	23,[illegible]	[illegible]	10,268	252,011	7,647	174,179	41,926	976,644
1935	[illegible]	[illegible]	12,517	[illegible]	7,431	[illegible]	37,[illegible]	935,221
Five-yr. average	21,[illegible]	[illegible]	10,556	[illegible]	[illegible]	173,[illegible]	39,919	977,517

WHAT HAPPENS WHEN THE ROBINSON-PATMAN ACT COMES DOWN TO CASES

By WAYNE G. MARTIN, Jr.

WHAT can and what cannot be done under the Robinson-Patman Act are questions perplexing flour millers, feed manufacturers, flour distributors and bakers. Virtually all are trying to follow the provisions of the act, but unfamiliarity with it and even uncertainty on the part of those charged with its enforcement, are virtually making it impossible to avoid some violations.

It is just as important, from the standpoint of business men, to know what can be done under the act as to know what is prohibited, for otherwise some perfectly permissible and desirable trade practices may be avoided in an effort to follow the dictates of the law.

In this connection the Federal Trade Commission has prepared a brief summary of 61 cases, brought to its attention under the Robinson-Patman Act, for which formal complaint was not filed after careful investigation. The reasons why such complaints were not filed provide an interesting insight into what is permitted under the law, and why the act is not operative in some instances.

The majority of the cases discussed in this summary deal with complaints of price discrimination. While the act definitely prohibits this practice, nevertheless there appears to be a wide misunderstanding on the part of many business men as to what constitutes price discrimination under the Robinson-Patman Act.

For instance, it is apparently permissible to sell a product at different prices in different communities if this is necessary to meet competition, for a case bearing on this question was outlined as follows in the summary:

"Party charged with selling two loaves of bread for price of one in local competitive areas in two states and not doing so in other areas. The evidence shows that practice complained of was begun to meet competitive practices of other bakers and was discontinued when such practices stopped. Hence the file was closed."

Another similar incident involving the baking industry was described as follows:

"For a period of eight days in June, 1936, a baker engaged in the practice of giving two cup cakes free with every purchase of a loaf of bread in local communities in two states, but did not follow this practice in other portions of its sales territory. The baker engaged in the above practice in order to meet competition, and discontinued it while some other competitors were still giving premiums."

Further bearing out the right of business men to meet competitive practices under the Robinson-Patman Act is another case in which certain wholesale bakeries were accused of selling 19-oz loaves of bread to retailers at 8c in some cities and at 6c per loaf in other cities of the same state.

"The reduction in certain cities from the regular price of 8c per loaf," the summary states, "to 6c per loaf was made to meet price reductions by local bakeries in one city and spread to other cities because of competition due to the overlapping sales territories of the various bakers. Restoration of previous prices began in outlying cities, was hastened by a prosecuting attorney, who threatened to institute criminal proceedings under a state law, and was completed when the local bakeries which had initiated the reduction raised their prices. Since the discriminations were to meet competition and have been terminated, partly by local authorities, the file was closed."

In another case a beet sugar refiner was accused of selling beet sugar to retailers in one city at $5.08, and in another city 65 miles distant at $5.03. The refiner claimed that competitive conditions in the latter city made the small differential necessary. The summary stated that no evidence to the contrary was obtainable, and "as between customers in each of the cities named there was no price discrimination." This file was also closed.

Occasionally other factors, as well as the need to meet competition, enter into individual price reductions. This was brought out under a charge that a wholesaler was selling a product at one cent per carton less to a few preferred customers than to others. "The investigational file," the summary states, "indicates that the wholesaler complained against did sell out of stock at a price one cent per carton higher than the price for drop shipments. A similar practice was followed by several competing wholesalers, some of whom sold drop shipments at even lower prices than the wholesaler charged. The inquiry did not show the existence of any unjustified discriminations among customers and did develop the fact that competitors were selling at comparable and lower prices. Hence the file was closed."

The principle that flour and feed can be sold in carload lots at lower unit prices than in smaller lots has apparently been acknowledged under the Robinson-Patman Act. In describing a case of a certain product wherein the carload extra discount amounted to $50 on an $8,000 purchase, the summary stated that "the carload price differential apparently can be justified in the particular circumstance on the lower cost of selling and shipping in carload lots."

In another instance wherein a confectionery manufacturer was granting a quantity discount of 2% on carload or truckload purchases, the summary stated that "the file was closed because the 2% differential to carload or truckload buyers is justified by the difference in cost of selling, handling, and shipping carload and less than carload shipments." It is doubtful, however, if the truckload exception would be maintained in the case of flour.

Because of the rapidity with which flour prices change, the following case, which apparently recognizes the fact that buyers cannot expect to be protected against price advances, is particularly interesting:

"It was charged that a manufacturer discriminated in price among competing customers. The record indicates that one purchaser, taking advantage of a notice of price increase from $3.20, purchased large quantities prior to the rise. The other purchasers continued to buy for current sales in a rising market which, at the time of complaint, was $4.85.

"There was no evidence of price discrimination, the ability to resell at the lower price being based on purchases at former lower prices which were available to all customers; hence the file was closed."

Another interesting point brought out in this summary of cases is the apparent recognition of the right of the manufacturer of a perishable product, such as are many foods, to limit the sale of such merchandise. The case described is that of a manufacturer of a perishable product who established a discount for the purchase of large quantities of his product, but refused to permit customers who heretofore had bought in small quantities to buy in larger lots in order to secure the discount.

The reason for this step, according to the survey, was that "the manufacturer felt that such quantities were more than those customers could sell before the products were injured by deterioration. It was felt that the sale of deteriorated merchandise to the public would seriously injure the business of the manufacturer."

The decision on the right to limit sales under such conditions held that "the manufacturer's refusal to sell in larger quantities than a customer could dispose of before the merchandise deteriorated was a reasonable measure for the protection of the public and of its business and good will."

The right of manufacturers to select customers to whom they are willing to sell is another question that has been brought up under the Robinson-Patman Act. That this privilege is not destroyed by the law is indicated in the findings regarding a complaint that tobacco manufacturers had granted a quantity discount to large buyers and had refused to sell directly to members of a co-operative buying group.

As the result of a recent investigation of the tobacco industry the commission found that "each manufacturer selects his customers after taking into consideration the number of distributors he already has and the credit responsibility and general business methods of each would-be customer. No evidence of co-operation or collusion by the tobacco manufacturers in the selection of customers could be found, nor of such selection resulting in restraint of trade or a substantial effect on competition. In view of the foregoing, the file was closed."

Much has been heard about the granting of trade discounts under the Robinson-Patman Act. It is now generally assumed that quantity discounts, where an actual difference in costs can be shown, are permissible. Under some circumstances, at least, manufacturers can apparently grant a trade discount to wholesale factors as opposed to direct purchasers. In describing such an instance it was written in the survey that "denial of the trade discount is explicable by the costs of indirect selling to small accounts."

Display allowances are usually considered banned under the act. The most significant comment on this question in the survey was the following: "Certain chain drug stores were receiving $25 a month from a manufacturer for advertising and display of the product. Such allowance was not available to competing customers. The manufacturer canceled the contract. Hence the file was closed."

Advertising allowances have also generally been considered prohibited under the Robinson-Patman Act. However, certain types of advertising co-operation can be carried on by manufacturers and distributors, providing the former receive full value for their expenditures. For instance, a case was cited of a chain store organization soliciting small amounts from manufacturers for defraying the cost of illustrating their products on the listing sheet which the chain organization furnished to each of its store managers. If the manufacturer does not care to pay this cost his products are

FROM MILL TO MEDICINE

Many are the uses and disuses of manufacturing plants that once were listed among this continent's flour mills. Of such is the former People's Mill at Guelph, Ont., here pictured. Bought and rebuilt about 1867 by James Goldie, son of John Goldie, famous Scottish miller who built Greenfield Mills at Ayr about 20 years before, this plant had a long flour milling history. In 1930 it was bought by the Pratt Food Co. of Canada, Ltd., Guelph, Ont., and in 1936 was dismantled. It is now being used in connection with the Pratt company's remedy business.

included in the listing sheets, but without illustrations. The commission found:

"The use of listing sheets by the chain store company enables the seller to furnish a price list only to the head office of the chain store company instead of to each of the company's individual stores, thereby resulting in a substantial saving to the seller.

"The policy of requesting sellers to share the cost of listing their goods does not result in price discrimination. Contributions made by sellers who participate constitute payments for services or facilities rendered by the chain store organization."

That millers, flour distributors, bakers and feed manufacturers, so long as there is no price discrimination on their part, are not responsible for retailers offering loss leaders, is also revealed in the survey, in which this situation was explained as follows:

"A manufacturer was charged with discriminating in price in favor of a drug chain. The complainant was of such opinion because the chain was selling the product cheaper than the small retailer could purchase it. Investigation disclosed the chain was using the product as a loss leader, selling the same at 20% below invoice cost and that no discrimination in price existed in sales made by the manufacturer. Hence the file was closed."

While the foregoing are the most pertinent of the cases reviewed by the commission in this survey, nevertheless it contained additional interesting information. Among other things it stated that "the Attorney General of the United States has held that the act is not applicable to contracts with agencies of the federal government for supplies."

Another case was described of a creamery paying more for cream in a certain town than the prevailing price among competitors. It was held that "price discriminations in *buying* prices are not denounced by the act."

The factor brought out most frequently in this survey of cases under the Robinson-Patman Act was the fact that the law applies only to interstate commerce. Many complaints of violation of the act have been brought before the commission, which, upon investigation, found that interstate commerce was not involved, and invariably no further steps were taken. Obviously, therefore, the first consideration in applying the Robinson-Patman Act to business practices is to determine definitely if interstate commerce is involved. If it is not, the act is entirely inoperative.

While the foregoing is a brief review of some of the business practices which apparently can be carried on legally under the Robinson-Patman Act, it should not be accepted as final authority even on these specific questions. The courts have by no means finished interpreting the act, and merely a slight variation in a business practice might cause it to fall under the ban of the law. It is encouraging to learn from this summary, however, that the Federal Trade Commission has given public recognition to the fact that there are limits to the Robinson-Patman Act, and that it is not attempting to go beyond those boundaries.

—BREAD IS THE STAFF OF LIFE—

EXCESSIVE BROKERAGE COSTS UNDER R-P ACT SEEN

In its petition for a writ of certiorari filed with the United States Supreme Court, the Great Atlantic & Pacific Tea Co. has declared that under the Federal Trade Commission's interpretation of the brokerage provision of the Robinson-Patman Act, the brokerage costs on foodstuffs alone would be increased from $102,986,640 to $334,497,000.

According to statistics from the Department of Commerce, cited in the petition, the aggregate retail sale of foodstuffs in food stores throughout the country in 1935 amounted to $8,362,425,000, and the commission's order would require either that brokerage be paid to brokers or that sellers receive an additional amount equal to brokerage on that entire amount, instead of merely on the $2,574,666,000 actually handled by brokers. At 4%, this would mean a rise of more than 200%.

The petition goes on to say that "the Robinson-Patman Act, as so construed, levies the most colossal tribute on the nation's business and the consuming public, for a favored few, ever levied in times of peace or war. The commission's order requires, in effect, that there be added to the cost of every piece of merchandise traveling on its way from farmer to consumer an arbitrary charge for brokerage, whether the goods have passed through the hands of a broker or not. The common merchandise broker becomes a privileged character, protected by statute against encroachments by newer forms of distribution."

—BREAD IS THE STAFF OF LIFE—

ALL-TIME HIGH RECORD FOR LAKE NAVIGATION

BUFFALO, N. Y.—The Pennsylvania Railroad sent 24 solid through trains of grain to the eastern seaboard, Dec. 4 and 5, an average of a long train every two hours. Each of the trains averaged 65 cars. If all of them had been moved out at one time, there would have been a 13-mile string of 1,560 cars.

This 16,836,838 bus grain which arrived in Buffalo is believed to be an all-time high weekly record for lake navigation. Grain transportation experts in the city claim that Buffalo is the only port in the world with facilities to handle such an enormous amount of grain within such a short time and that Fort William and Port Arthur are the only ports which could have sent it out.

Of the total, 12,773,978 bus were Canadian grain. An 11-year record was set the previous week, when 9,195,661 bus were brought here.

—BREAD IS THE STAFF OF LIFE—

N. E. BAKERS DISCUSS TRENDS IN INDUSTRY

A discussion of general business conditions, particularly those affecting the baking industry, featured the annual fall convention of the New England Bakers Association, which met at the Hotel Statler, in Boston, Dec. 10-12.

Motion pictures were shown by Anheuser-Busch, Inc., and Swift & Co. A featured speaker at the convention was Russell W. Varney, Standard Brands, Inc., who discussed trends in the industry. The convention was concluded Tuesday night with a banquet. Leverett Saltonstall, governor of Massachusetts, was the principal speaker.

—BREAD IS THE STAFF OF LIFE—

BUFFALO CHEMISTS TO MEET

The Niagara Frontier Section, American Association of Cereal Chemists, will meet Dec. 16 at MacDoel's restaurant, Buffalo, N. Y. L. H. Rooney, chief chemist for the Spencer Lens Co., will give an illustrated lecture on "Microscopy as Applied to Chemistry."

FEDERAL AND STATE FLOUR REQUIREMENTS

The Bureau of Supplies and Accounts of the Navy Department has announced that it will receive sealed bids, in duplicate, at Washington, D. C., until 10 a. m., EST, Jan. 4, on miscellaneous quantities of sacked wheat flour, to be delivered at various East Coast points, f.o.b. cars, or on wharf at or near contractor's works.

WILLIAM HAUSER ● and his HOBBY

This is William Hauser, a baker of 2296 Main Street, Buffalo, shown with an example of his hobby. For many years Mr. Hauser has studied windmills and churches with an eye to fashioning their models in cake and icing. His interest in windmills was stimulated during travels in Holland; the one shown above follows faithfully a mill he saw in the interior of the Netherlands. The arms of this mill revolve, attracting attention to his store window. Chocolate piping is used to delineate windows and for decorative effects.

SUPER-MARKETING

Modernization

Modernization and improvement of the Callahan-Johnson One-Stop Food Service, 317 West Walnut Street, Green Bay, Wis., formerly the Central Food Store, has been completed, with new show and counter cases, a new store front, streamlined illuminating fixtures, and other improvements being included under the program. A complete line of foodstuffs is now being carried.

A & P Breakfast Food Plant to Be Built

The Quaker Maid Co., subsidiary of the Great Atlantic & Pacific Tea Co., will build a six-story plant at Terre Haute, Ind., costing about $500,000. A similar six-story building is already being operated in Terre Haute. It is reported that breakfast food will be made in the new plant. The building will be completed within a year, according to present plans.

New Supers

The Kroger Grocery & Baking Co. has opened a new self-service super market at 960 Parsons Avenue, Columbus, Ohio, with Charles Hafey as manager.

A new Great Atlantic & Pacific Tea Co. super market has been opened at 1648-50 Ludington Street. Built at a cost of $12,000, the structure contains 6,420 square feet of floor space. It has a depth of 107 feet with a rear 44 feet, and a 60-foot modernistic front. John E. Bogrand is store manager.

The Great Atlantic & Pacific Tea Co. has opened a new super market at 367 High Street, Pottstown, Pa. The market is one of the largest in eastern Pennsylvania and has been built in a manner to provide free parking for 200 automobiles at one time. I. B. Leaman is the general manager. The one-story, 63x130-ft building is of brick and steel construction.

Common Sense System

The Common Sense System is the name of a new Chicago food chain which will be introduced to the public through the sharing of space with established meat markets. The central warehouse and first retail outlet have been opened at 711 South Dearborn Street. The plan is to pay the meat market operator a rental for the space the grocery department occupies and also give him a share of the grocery profits. Much of the merchandise will be offered under the brand name of Custom Seal. George H. Kane is promoter and manager of the system.

Twenty-fourth

The American Stores Co. has opened its twenty-fourth large self-service grocery and meat market in Baltimore and vicinity. The new store is at 2302 Annapolis Road, in the Westport section of the city.

Five in One

A new A. & P. Self-Service Super Market has been opened in Manitowoc, Wis., at 1120 Washington Street. It includes five complete stores: a bakery section, one devoted to dairy products, another for fresh fruits and vegetables, a coffee department and a meat section.

MIDDLE, SOUTHWEST RECEIVE FAIR RAINS

Topsoil Needs Fulfilled in Many Southwestern Areas, but Subsoil Still Deficient in Moisture

WASHINGTON, D. C.—Light to moderate showers, in some sections fairly heavy rains, materially benefited the top soil and supplied sufficient moisture for present agricultural needs in most places over considerable interior and southwestern areas, the Weather Bureau reports.

Favored areas include Louisiana, most of Texas, south central and eastern Oklahoma, Arkansas, eastern Kansas, Missouri, southeastern Nebraska, Iowa, extreme southeastern Minnesota, and most of the lake region and Ohio Valley. Also, good rains occurred in much of the northeastern area and moderate showers were helpful in middle Atlantic states. The rains generally improved the outlook in the central and eastern winter wheat belt.

While the topsoil was benefited in these sections, rainfall was not sufficient to penetrate to any considerable depth. The subsoil remains dry generally throughout the interior of the country, with complaints of wells failing and a continued shortage of stock water in a good many places. The water situation has improved in the upper Ohio Valley.

In north central states, from the Great Plains westward, there was not sufficient rain to be of material benefit anywhere, except locally in the North Pacific area. However, in the far Southwest, notably in Arizona and New Mexico, there was enough to be materially helpful. The drouth situation continued serious over most of the western half of the country. Some drifting soil was reported in South Dakota and Wyoming.

In the South conditions are rather favorable, except for dryness in Mississippi, Alabama and most of Georgia. In Florida heavy frost extended to the interior southern sections. In extreme southern Texas rain is needed badly.

Kansas

HUTCHINSON, KANSAS.—Seeded wheat over the Southwest is at a standstill, but would be moving if there were winds, D. B. Frazee, of the Security Elevator Co., recently declared after an inspection trip. "Everything is static," he said, "wheat that was dusted in still has not sprouted and that which had sprouted 30 days ago is just where it was then. About all you see is dry fields. I'm afraid we're in for a lot of dust here because the dust bowl has moved nearer. In the old original dust bowl of southwestern Kansas, southeastern Colorado and the Oklahoma panhandle, they have the soil pretty well anchored. They have not attempted to plant wheat, and weeds and stubble cover the fields." He believes it is too late for rain to accomplish any good in the area beginning 60 miles west of Hutchinson.

Oklahoma

OKLAHOMA CITY, OKLA.—Winter wheat in the south central and eastern parts of the state has shown some improvement as a result of recent rains which continued through the closing days of the month. The greatest precipitation was nearly three inches at Wagoner. The state average rainfall was only 64% of normal, while the percentage for the western third of the state was only 40%. On the whole, the state wheat crop is far below normal and is rated "poor." Only a small percentage of wheat acreage is providing pasturage, and in some areas the wheat is not even showing through the ground. Temperatures have averaged 4° above normal for the week. Because of the dry condition of the soil, farmers are taking care of farm chores rather than engaging in agricultural work.

Pacific Northwest

PORTLAND, OREGON.—Winter wheat in the Pacific Northwest is spotted and generally in poor condition. The dry spell in the interior was broken Dec. 8, but many farmers will be compelled to reseed in the spring. Acreage planted is far below normal.

ARGENTINE CROP CABLE

BUENOS AIRES, ARGENTINA.—As the harvest progresses southward early threshing returns do not indicate expected improvement. Trade estimates of gross wheat production vary from 130,000,000 to 160,000,000 bus, having been reduced again after frosts the night of Dec. 7. The government's first official estimate will be issued Dec. 15. Old wheat continues to leave the country in heavy volume. The demand for new is fair, and speculation has increased. New crop wheat is several cents a bushel over the recent minimum price, which the government found expensive to maintain.

JUDGING BREAD AT THE GRAIN SHOW

These well known cereal technologists comprise the committee that judged breads baked from wheats grown and milled for the International Grain and Hay Show held in Chicago Dec. 2-9 (detailed account on page 21). Left to right they are: Dr. E. G. Bayfield, Department of Milling Industry, Kansas State College, Manhattan, Kansas; Dr. William H. Catheart, American Institute of Baking, Chicago; Ralph W. Mitchell, Purity Bakeries Corp., Chicago; F. T. Dines, Oklahoma Agricultural and Mechanical College, Stillwater, Okla; L. W. Haas, W. E. Long Co., Chicago, and Dr. M. J. Blish, U. S. Department of Agriculture, Western Regional Research Laboratory, Berkeley, Cal.

—BREAD IS THE STAFF OF LIFE—

WHEAT IMPORT COUNTRIES BETTER OFF THAN IN 1914

At the outset of the present war, European countries are in a far better position than in 1914 to hold down their essential requirements for oversea wheat, the Food Research Institute of Stanford University points out. And this difference is likely to persist even if the war should last for four or five years, the institute declares.

During the World War, difficulties in maintaining wheat supplies in Europe culminated in acute shortage in 1917-18. Small crops in the unblockaded part of Europe created enormous import requirements, even with utilization defined in terms of wartime levels much below those customary in peacetime. Russia could not ship wheat to the deficiency area. The full burden therefore fell upon the distant oversea exporting countries.

These oversea countries secured only moderate crops in 1917, in spite of the expanded acreage, and their total supplies were too small to yield exportable surpluses adequate to cover the heavy world import requirements of 1917-18. In addition, shortage of shipping space prevented southern hemisphere surpluses from passing fully into export. Heavy drafts upon stocks in North America, economies in American consumption, and stretching of wheat supplies in Europe so ameliorated the European situation position that mass starvation or hunger was generally averted outside of the Central Powers. Yet there was profound disturbance of consumption habits, even privation, and wheat prices rose exceedingly high.

At the present time, the oversea exporting countries with normal yields on present acreage, could probably supply maximum import requirements with ease. Recurrence of a world stringency like that of 1917-18 seems improbable for at least two years and possibly three, and would probably not occur later except in the event of abnormally low yields per acre in the oversea exporting countries.

EDITOR'S NOTE.—The subject of "Wheat and War, 1914-18 and Now" is completely covered by M. K. Bennett in a *Wheat Studies* bulletin, issued by the Food Research Institute, Stanford University, Cal. It is Vol. XVI, No. 3, and is priced at $1.

—BREAD IS THE STAFF OF LIFE—

WISCONSIN ELECTION

MILWAUKEE, WIS.—Officers of the organization elected at the November meeting of the Wisconsin Flour & Bakers Allied Trades Association are E. C. Lang, president, W. N. Burbach and Henry Kleinsteuber vice presidents, and Leonard P. Kenney secretary-treasurer. They will be installed Dec. 15 at the annual Christmas party in the Elks Club.

AAA ADMINISTRATOR PLUGS PROCESSING TAX

R. M. Evans Advocates Some Form of Tax to Provide Continuous Income for Farm Program

Some form of processing tax is needed to provide a continuous source of income for the AAA farm program, declared R. M. Evans, administrator of the AAA, in an address before the Oregon Wheat League, at Condon, Ore., Dec. 9.

"Since parts of the first AAA were invalidated by the Supreme Court, our farmers have had to look to annual appropriations out of the national treasury for revenue to operate their programs," he said. "This method of financing during these years has worked well in helping the farmer get a more just share of the national income, but because of its year-to-year uncertainty, it is not a method that builds for continued program stability. The most effective program will be financially self-supporting," he continued.

"Industry of this country grew up behind the protection of tariff walls," he pointed out. "Farmers helped pay for that protection in order that our industry might develop and in order that, once developed, it might remain a strong part of our economy. A continuing plan for parity payments is the farmer's tariff. Such a plan, whether modeled after the old processing tax or after the certificate plan which is a new version of the processing tax, is not contrary to the interests of the consumer, as long as the market plus the tax does not exceed parity. The consumer who is willing to grant the farmer a fair price for his commodities doesn't care whether he pays that price through the market or the tax," he asserted.

"Whether the certificate plan or some other is finally worked out, the farmers of the United States are determined to hold the gains they have made after more than 20 years of effort and to do that they must insure a permanent financing plan as an essential part of the program," he declared.

OBITUARY

CHARLES G. EDEN

Charles G. Eden, vice president and director of H. C. Bohack Co., Inc., operators of more than 500 grocery and meat stores in Brooklyn and Long Island, died on Dec. 5 in the Long Island Hospital after a seven weeks' illness. Mr. Eden was 65 years old and had started working for the late Henry C. Bohack over 40 years ago, rising through various posts in the chain until he succeeded Mr. Bohack as president of the company on his death.

GEORGE W. ROCKEFELLER

George W. Rockefeller, 65 years of age, sales manager for the western New York and Pennsylvania territory of the Worcester Salt Co., died Dec. 2 in Buffalo. Born in Tivoli, N. Y., Mr. Rockefeller had been a resident of Buffalo for 26 years. He was a member of the Rotary Club of Buffalo, Allied Trades of the Baking Industries, Buffalo Flour Club, and Pennsylvania Bakers Association. His widow survives him.

JACOB F. RENZ

Jacob F. Renz, who established the Renz Bakery in Lima, Ohio, in 1887, died in the Memorial Hospital there on Nov. 29. He was 75 years of age. He was a native of Germany and came to the United States in 1880, locating at Bucyrus, Ohio, at the age of 16 as an apprentice baker. Three sons and a daughter survive.

KANSAS EXPERTS SEE HIGHER WHEAT PRICES

Steady Corn, Steady to Lower Prices for Livestock Predicted—Higher Butter, Lower Egg Values

Kansas State College experts say that the best information available indicates higher wheat prices, steady corn prices, steady to slightly lower hog prices in early December, with slightly higher prices by the latter part of the month, steady to slightly lower prices for good grade fat cattle, steady prices for medium and common grades of fat cattle and for stockers and feeders, lower prices for fed lambs, steady prices for feeder lambs, higher butter prices, and slightly lower prices for chickens and eggs during December.

WHEAT

Higher wheat prices during December are indicated by (1) the poor condition of the growing winter wheat crop, (2) the usual seasonal trend in wheat prices during December, (3) improving business activity, and (4) the possibility of revival of speculative interest if crop conditions indicate a reduction of supplies during the 1940 season. However, domestic prices are approaching an import basis, and price increases are expected to be small unless there should be some advances in Canadian and Argentine markets. If wheat prices should advance 8@10c, wheat probably would move into the United States from Canada. This would tend to place an effective ceiling on further price advances.

CORN

Steady corn prices are expected during December. Corn prices usually reach a seasonal low during the winter months. This season, further weakness in corn prices is not expected because of (1) the large amount of corn that will be withheld from the market, (2) improving business activity, and (3) prospects for higher wheat prices.

The total supply of corn (including the new crop of 2,591,000,000 bus and the Oct. 1 carry-over of 561,000,000) is nearly 250,000,000 bus larger than in 1938, and nearly 400,000,000 larger than pre-drouth average supplies. However, it is expected that more than 400,000,000 bus will be under loan or held by the government, so that the available market supply may be about the same as in 1938 and not far from the pre-drouth average supply.

HOGS

Steady to slightly lower hog prices are expected in early December, with slightly higher prices probable by the end of the month. However, the present narrow spread between prices of light and heavy hogs will tend to widen by the end of the month. Although current prices probably are near their seasonal low, increased supplies and heavier weights are expected to be depressing factors during early December.

Considering the fact that a relatively large per cent of the available hog supplies was farrowed in regions adapted to early production and marketing, market receipts should be near their seasonal peak. Slaughter figures, however, indicate a moderate delay in the marketing of the 1939 spring pig crop. Federally inspected slaughter during September and October was only 8% larger than in the corresponding months of 1938, while slaughter at 27 packing centers during the first three weeks of November was only 12% larger than for the same period last year.

CATTLE

Steady to slightly lower prices for good grade fat cattle and steady prices for medium and common grades of fat cattle and for stockers and feeders are expected during December. A continued heavy market movement of well-finished slaughter cattle and increased competition from other meats, including pork, lamb and poultry, are factors expected to have a depressing effect on fat cattle values. The influence of these factors on prices probably will be modified by an improved consumer demand for meat, the strong demand for two-way feeders and replacement cattle, the probability that a large proportion of the cattle on feed will not be marketed until late winter and early spring, and the estimate that, compared with last season, somewhat smaller numbers of cattle are on feed in western states.

SHEEP AND LAMBS

Lower prices for fed lambs and steady prices for feeders are expected during December. Increased market supplies of fed lambs from the corn belt probably will be the important price depressing factor. The feeder lamb movement into five corn belt states was both larger and earlier than last year. Shipments to these five states, July through October, were 19% larger than in 1938; however, shipments during the first three months of this period were 47% larger than for the corresponding months of 1938. A supporting factor will be the improved demand for dressed lamb and wool, which already has been reflected in current values.

Feeder lamb prices are expected to remain relatively steady, for available supplies are expected to be small; and the prospects of higher fed lamb prices during the late winter and the abundant supplies of low cost feed are expected to cause a continued active demand.

DAIRY PRODUCTS

Butterfat prices during December are expected to average higher than in November. In 14 of the last 22 years, December butterfat prices at local Kansas cream stations averaged higher than November prices. Sharp increases in the consumption of dairy products in recent weeks, improvement in consumer purchasing power, and reduction of storage stocks of the principal manufactured dairy products are factors lending strength to prices of dairy products during the next few weeks.

—BREAD IS THE STAFF OF LIFE—

2,000,000-BU ELEVATOR BEING BUILT IN OKLAHOMA

OKLAHOMA CITY, OKLA.—A 2,000,000-bu grain elevator is being constructed in Enid, Okla., for the Union Co-operative Exchange, to augment the present 1,250,000-bu structure, bringing the plant's total storage capacity to 3,250,000 bus. E. N. Puckett, manager, said the elevator will be completed in time for the 1940 harvest. With the completion of the new elevator Enid's total storage capacity will be 14,250,000 bus.

The contract for the new unit provides for approximately $60,000 being set aside for common labor, principally local. The project is sponsored by 75 elevator stockholders in northwestern Oklahoma and in the Texas panhandle.

—BREAD IS THE STAFF OF LIFE—

DUNWOODY ACTIVITIES

November was a busy month for the students in the baking class at the Dunwoody Institute, Minneapolis. Besides their regular classroom studies, they made a great many trips to commercial bakeries and the plants of varied allied trades. The instructors feel that these trips are of great educational value, since they enable the students to witness practical application of the rules they are studying, and see how the raw materials they handle are manufactured or processed. Among the plants visited during the month were: Swift & Co., South St. Paul; Rapinwax Paper Co; Griggs, Cooper & Co.'s cracker bakery, and General Mills, Inc. On the latter trip, the students were shown through a mill, luncheon was served in the company's model kitchen, and afterwards, the commercial and experimental bakery was visited. Problems in baking were discussed by various members of General Mills' staff. In addition, during the month, several demonstrations were held at the institute. Allied companies participating in these demonstrations were: Bowman Dairy Co., Chicago; Red Star Yeast & Products Co., Milwaukee, and Wilson & Co., Chicago.

—BREAD IS THE STAFF OF LIFE—

PILLSBURY AIDS ARBA

The Pillsbury Flour Mills Co. has joined the group of firms sponsoring the Research and Merchandising Department of the Associated Retail Bakers of America. President Walter Jesse, chairman of the board; Peter Redler, and Secretary Frank G. Jungewaelter were influential in obtaining the support.

—BREAD IS THE STAFF OF LIFE—

ARGENTINE WHEAT ESTIMATE SHOWS SHARP REDUCTION

The Argentine wheat harvest was under way by Dec. 2, with conditions ranging from average to poor as a result of too much rain during October, according to the International Institute of Agriculture at Rome. Estimates by the trade indicate a total crop within a range of 136 to 184,000,000 bus. Rains in the northern half of the wheat zone have been excessive, and some frost damage was reported in the southern part of the Territory of La Pampa.

Wheat production in Argentina during 1933-34 to 1937-38 averaged over 220,000,000 bus and in 1938-39 the outturn totaled over 336,000,000 bus. Exports were small during the early part of the current year, but beginning in March, they increased in volume and a total of about 145,000,000 bus moved out of the country during January-October. It appears likely, however, that about 75,000,000 bus at least will be carried over into the new crop year beginning Jan. 1, depending upon December shipments.

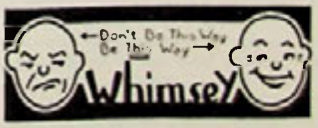
The flaxseed crop has also suffered from too much rain, but a crop about equal to average is expected, according to trade opinion. Production during 1933-34 to 1937-38 averaged about 68,000,000 bus. In 1938-39 only 56,000,000 bus were harvested, and the surplus available for export late in November was placed at only 2,000,000 bus.

Corn plantings for the 1939-40 harvest were benefited by the unfavorable weather of October, and the condition of the crop is reported to be good.

—BREAD IS THE STAFF OF LIFE—

BREAD MOVIE POPULAR

Teachers, students, members of the baking industry and the general public are invited during the month of December to the free showings of the talking motion picture "In the Dough" at Franklin Institute in Philadelphia. This picture, sponsored by Standard Brands, Inc., tells the story of bread from the Stone Age down to the present time, from stone-crushed, rock-baked slabs, to the perfect loaf of today.



BAKER'S FIRST VACATION

Brodhead, Wis.—Will Swanton, baker here for 47 years, is planning to take his first vacation—in the form of retirement. He has sold his shop. Once he almost had a vacation, but his substitute at the shop took his place so poorly the first day Mr. Swanton was away that the boss called him back immediately, leaving wife and children alone at the lake shore. He says it'll be great to sleep late mornings. For 47 years, he has risen at 2 a. m.

ABOVE AVERAGE CROP SEEN FOR AUSTRALIA

Large Carry-over Reported—Exports Drag—No Figures Available Since Outbreak of War

The first official estimate of Australian wheat production in 1939 is placed at 180,042,000 bus. The 1938-39 crop totaled only 154,426,000 bus, or about 3% less than the five-year average, 1933-34 to 1937-38. Over 13,000,000 bus of wheat were carried over into the 1938-39 marketing year, which added to production gave a total supply on hand Dec. 1, 1938, of about 168,000,000 bus. With domestic utilization for all purposes estimated at 56,000,000 bus, about 112,000,000 bus were available for export or carry-over.

Australian wheat has moved rather slowly during the 1938-39 season; exports during December-August totaled only about 74,000,000 bus as compared with 114,000,000 exported during the corresponding period of 1937-38. No official trade figures have been released since August, but, if Australia exports the same percentage of the year's total during September-November of this season as was shipped out during the corresponding period last year, the total for 1938-39 would amount to about 84,000,000 bus and would leave some 28,000,000 bus for carry-over into the new marketing year. This added to the first estimate of the 1939-40 crop, 180,000,000 bus, would indicate a total supply on hand Dec. 1 of over 200,000,000 bus.

Australian Wheat Scheme

Australia enacted a scheme late in 1938 designed to assure to commonwealth wheat growers a so-called "payable average price" for wheat sold for home consumption through a system of sliding-scale excise taxes imposed on flour consumed in Australia, if the price of wheat in the export market fell below a stipulated sum (5s 2d, about 96c bu); or on sales of wheat by producers, if export wheat brought a higher price than that stipulated. In other words, when wheat prices were low, it was intended that flour consumers would subsidize wheat farmers; when wheat was high, growers were to subsidize the flour consumers. Revenue from the taxes was to constitute a Wheat Industry Stabilization Fund to be administered by a Wheat Stabilization Advisory Committee. Besides guaranteeing a subsidy to the grower or the flour consumer, as the case might be, some of the fund was to be allocated to the various states for drouth relief and the rehabilitation of wheat growers who were cultivating submarginal land.

Although in operation less than a year, considerable opposition was voiced against the scheme. What the outcome of the various proposals for changing it would have been is problematical, as the outbreak of the European war changed the outlook for Australian wheat. Under present conditions, the crop will be marketed through a compulsory wheat pool controlled by a committee appointed by the commonwealth government, rather than through state pools as was the case during the World War.

—BREAD IS THE STAFF OF LIFE—

DRIVERS AND HELPERS MUST BE OVER 18

The Federal Fair Labor Standards Act prohibits employment of persons less than 16 years of age and also prohibits employment of persons 16 to 18 years of age in occupations which the Chief of the Children's Bureau in the Department of Labor declares to be hazardous or detrimental to health or well-being. The Chief of the Children's Bureau has now declared the occupation of motor vehicle driver or helper to be hazardous within the meaning of the act effective Jan. 1.

WAR GOSSIP FROM LONDON

By C. F. G. RAIKES
European Branch Manager of The Northwestern Miller

Britain's Food Supplies

JUDGING from what we hear of the food shortage in Germany, the heart of the most loyal Nazi would be broken were he able to make a tour of the shopping districts of any town in Great Britain. The provision shops in London are literally groaning with food of all kinds and only today we read in our morning paper that the distribution of meat has been heavier this week than any week since the outbreak of war. What is more, the price of meat is the same as it was in August and some shops are even selling below the maximum. The only scarcity in the food line at present is in bacon and butter but even these are not rationed although the public is asked to economize in its purchases. However, it is expected that this temporary shortage will be adjusted in due course when supplies of bacon and butter have time to arrive from distant markets. Supplies from Denmark and Poland, naturally, have been curtailed, but Canada and New Zealand are in a position to make good these deficiencies.

In spite of the German claims in their propaganda that they now control the North Sea, having driven off all British shipping, the supplies of fish caught by North Sea trawlers are now nearly normal and the fish markets, such as Grimsby and Billingsgate (London), are abundantly supplied each day, so that the retail shops can secure all they want of a large variety of fish. One or two of the cheaper grades, such as mackerel and herring, are sold at a fixed price, the former at 8d (16c), and the latter at 6d (12c) per lb. The Englishman's favorite breakfast and supper dish is a kipper or a bloater, both of which are smoked herring, and sell at 10d (20c) and 7d (14c) per lb, respectively. The higher grade fish, such as soles, plaice, turbot, halibut cod, etc., are somewhat higher in price than they were before the war, but are very plentiful.

The fruit shops also are well stocked with fruit of every description. In addition to English apples, pears, and grapes, supplies from Australia, South Africa, United States and South America are very abundant. Later on, when English grown supplies are finished, Canadian apples will come on the market.

Although food rationing has not as yet come into force the government has made all the necessary arrangements and ration cards already have been distributed so that the scheme can be put into effect instantly when the government considers the time appropriate. It is not thought likely that food rationing will start until after the New Year.

The Opposition party (Labor) is inclined to criticize the delay on the part of the government in bringing in food rationing and recently one of the Labor leaders moved in the House of Commons for an immediate application of a comprehensive rationing scheme. It was inferred that the reason the government did not bring in the rationing of bacon and butter was the fear that it would not be able to supply the entire population with more than four ounces of each and only a small money value per head per week of meat.

However, the Minister of Food, replying to the Labor Party's motion, said that if he saw a severe scarcity of meat or any other commodity in sight he would certainly recommend that the House should agree to its rationing, but the government did not want to see the matter treated as a doctrine—as though rationing was good for its own sake. He explained how the food department of the government had been able, since the outbreak of war, to effect a very marked check on what might otherwise have been a very steep rise in prices. He claimed that his department had saved many millions of pounds sterling in foodstuffs, having been aided by the reserves accumulated in peace time of essential commodities. He pointed out that the substitute for butter was margarine, for which the materials held by the government were plentiful and cheap and that it had been possible to accumulate these in peace time in far greater quantities than it was possible to accumulate butter. He also said that the storage of raw material for margarine was far more economical than that of storing butter in refrigerating plant and, in addition, it placed at the disposal of consumers a food commodity of high vitamin value at 6d (12c) compared with 1s 6d (36c) per lb. He believed that the consumer should be given the utmost amount of freedom possible and that while proceeding with the preparations for rationing the government should do so with prudence and not ask people to undergo the inconvenience of rationing unless there were such a shortage of a commodity as to interfere with equitable distribution.

Although rationing has not come into effect, the public has been instructed to register with the shops at which it is intended to buy commodities that are likely to be rationed. A very large selection of food, such as fish, poultry, game, rabbits, hares, eggs, flour, bread and milk are not to be rationed, so that consumers can obtain a large variety of food in addition to the foods rationed.

Milk supplies at present are very plentiful and the government Milk Board is asking the public to drink as much milk as possible. The winter price has been fixed at 8d (16c) per quart and the price of bread is 8d (16c) per quartern of 4 lbs—in other words, 4c per lb. The flour used is of excellent quality, consisting of an extraction of 73%. The milling mixture from which the flour is made contains 40% of Manitoban wheat.

The price of eggs is fixed according to grade. At this season of the year English eggs are always scarce but in normal times this is not felt very seriously by the public as enormous supplies come from near-by continental countries, such as Holland and Denmark. These eggs, for some reason or other, always sell at far lower prices than the English. The present price of English eggs, first grade, is now 3s (72c) per dozen, but the smaller size new laid are 2s 6d (60c) per dozen. Next in value come those termed "near European," which include Holland and Denmark. These sell at 2s (48c) to 2s 3d (54c) per dozen. Eggs from more distant markets, such as Australia and South Africa, sell around 1s 6d (36c) per dozen. Chinese eggs are in plentiful supply at 24c per dozen. Only this morning I read an advertisement in one of the London papers that the Admiralty Prize Court is asking for bids on a large consignment of Chinese eggs, captured as contraband going to Germany.

Christmas supplies of dried and citrous fruits are said to be arriving freely and no shortage is expected for the Christmas trade. The price of such goods, however, is somewhat higher than usual owing to the increase in freight rates and insurance. Huge quantities of Christmas plum puddings already have been made and there is no doubt whatever that the British Army overseas will be liberally supplied with this traditional Christmas fare.

For these abundant supplies of food every Britisher takes off his hat in gratitude to the Royal Navy, which, in spite of the menace of German submarines, has protected merchant shipping, thus enabling this steady flow of food ships to be maintained.

EUROPE'S WAR REDUCES U. S. EXPORTS

* * * *

Agricultural Advisory Council Receives Report From U. S. D. A. Economists on What Has Happened to United States Agriculture the Past Three Months

WASHINGTON, D. C.—War in Europe has caused exports of farm products from the United States to be smaller than they would have been if the war had not started, members of the Agricultural Advisory Council were told recently in a special report prepared by the Bureau of Agricultural Economics.

The Advisory Council was formed early in September to advise with Secretary of Agriculture Henry A. Wallace on agricultural problems brought on by the war. Its membership represents organized producers, processors and distributors of agricultural goods and the general public, including organized labor.

The report to the council states that little change in imports of agricultural products has been occasioned by war during the first three months of the conflict. Taking a forward look, the report concludes that if European war continues through the current marketing year:

Imports of farm products will not be greatly affected.

The tonnage of United States farm products exported will be somewhat less than it would have been had Europe stayed at peace.

Nevertheless, there will be some increase in farm prices and income over what they would have been without war. This increase will come about because of slight speculative rises in the prices of farm products caused by anticipation of the development of wartime demand, plus greater buying power of domestic consumers brought about by increased industrial production for war purposes. The Advisory Council is told in the report that the following are the chief forces at work in the wartime supply and demand situation:

The long period of unrest preceding war's outbreak enabled the warring nations to accumulate much larger stocks of farm products than they held in 1914 and their production at home is greater than in 1914. Furthermore, when they do go into the world market to buy they can select from among a much wider range of sellers. South American countries and Canada now are much more important suppliers of several farm commodities than in 1914. The warring nations have already put on governmental control over prices, imports, exports, methods of buying. United States producers and users of goods are feeling the effects of these controls. For example, apple growers have been hard hit by the British and French decision not to license the imports of apples from the United States. This action shuts off practically the entire foreign market for United States apples. Another instance is offered by the British governmental control of the entire wool clip in Australia. Britain will be the sole bargaining agent for all Australian wool sold to the United States and other nations that import wool.

These monopolistic controls over the flow of trade are further implemented

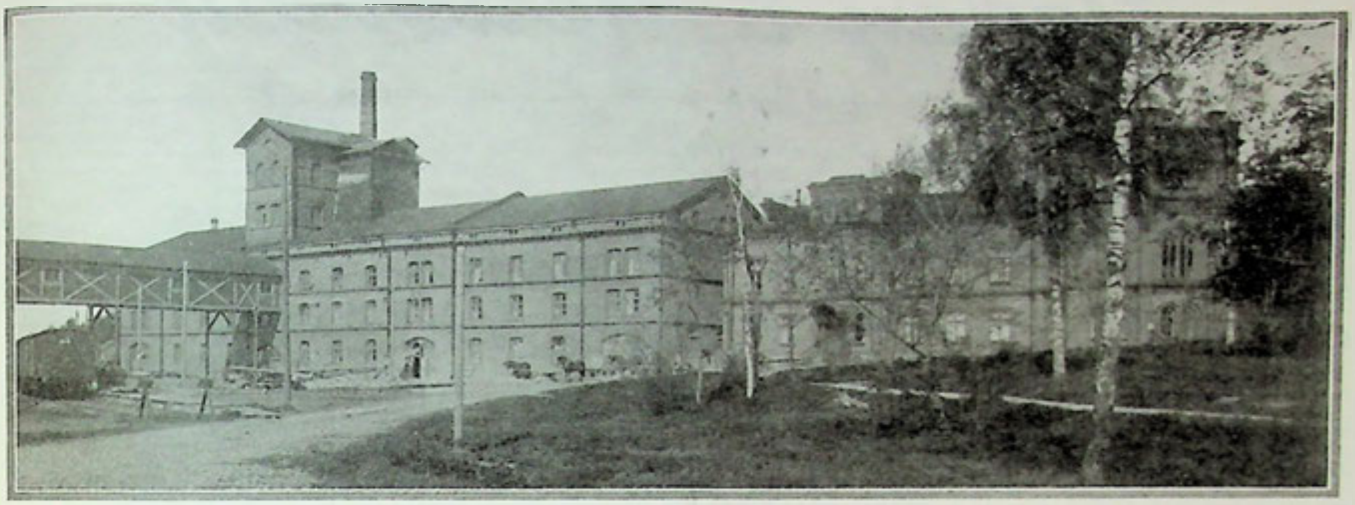
STALING AND BREAD FLAVOR

* * *

Baker and Scientist Urged to Study Phenomenon of Staling to Make Bread More Appealing

I believe that bakers are concerning themselves too much over the question of bread flavor and ways and means of rendering it more distinctive. Conceive of the widest range of formulation on white bread possible and you still have a relatively neutral-flavored item that has the capacity of not tiring the palate and lending itself readily in combination with many other foods so that it can be eaten every day with every meal. Bread made from the leanest formula extant tastes good when it is fresh. So does that made from a rich formula and probably it retains it longer by reason of the observation that it apparently does not stale as rapidly. Is it not possible that the consumer unconsciously reacts to a quality associated with freshness rather than flavor by itself when she says she likes a particular loaf because it "tastes" better? We know that freshness is her cardinal requirement in the bread she purchases. Would not the baker, and the scientist associated with him in his interests, be more warranted in studying the phenomenon of staling, for ways and means of retarding or inhibiting it, rather than devoting his time to the study of flavor beyond letting it reflect the combination of good, sound ingredients, normal effects of fermentation and the exclusion of foreign and objectionable elements? Perhaps investigation in this direction would provide the answer for which bakers are searching since there is some reason for believing that staling and bread flavor are intimately associated.—*George F. Garnatz, chief of staff of laboratory division, Kroger Research Food Foundation.*

A MODERN FLOUR MILL IN FINLAND



So far as the news reports it, the tide of war has not yet overswept Finland's largest and finest flour mill—for several years a showplace and the pride of the Finnish industry. It is here pictured as it stood—at last accounts—in the western seaport city of Vaasa, near the northern extremity of the Gulf of Bothnia. With a large production and under energetic management the Vaasen Hoyrymylly, as it is named, has enjoyed a practical monopoly of the trade in flour in northern Finland. Other large Finnish mills are located in Viipuri, Helsinki, Hyvinkaa and Turku, all cities on the southern coast. Large quantities of rye flour and meal are still produced for local use by small rural mills, operating by hand, wind and water power. Some of these mills are being adapted to wheat grinding, higher tariffs and the substantial difference between the import duties on flour and grain being chiefly responsible for this stimulation of the industry.

by the pooling of purchasing by the British and French governments, to avoid competing with each other in the world markets. The decisions as to when and what and how much farm products are to be bought for the accounts of the two governments will largely determine the volume of United States exports. These decisions will be influenced by exchange rates, which now favor sterling block countries as against the United States, and the desirability of conserving dollar exchange for use mainly in buying munitions and other industrial products which can be had only from the United States. These considerations now tend to influence the allied nations to buy farm products chiefly from their dominions or other countries with currencies closely linked to theirs, to whom they are able to ship their manufactured products in exchange for farm products, and from whom they can obtain credits.

Should the war at sea drastically cut down the tonnage available for ocean shipping or raise the costs of shipping materially from their present level (they already are much higher than in peace time) the position of the United States on the short north Atlantic sea lanes would be likely to cause the allies to favor purchase of more farm products in the United States, the Advisory Council is told. However, the sinkings to date plus the effects of higher freight and insurance rates on cost of cargo carriage have not, combined, exerted such an effect as to shift buying policies in favor of the United States.

Comments of the BAE economists in their report to the Advisory Council regarding probable wartime effects, during the current marketing year, on exports and imports of specific farm products may be summarized as follows:

Wheat.—Exports due to fall off this marketing year, regardless of war, because of the poor prospects for 1940 crop. However, war cuts exports below level they would reach in peace, since allies prefer to buy now from Australia, Canada, the Argentine and North Africa, where exchange favors them and where trade balances can be settled in goods, rather than gold.

Cotton.—Ultimately war may cut cotton exports, mainly because the market in Germany and German-controlled territory has largely disappeared. Allied countries also may not stock American cotton so heavily as they would have in peace time, because of the higher transporting costs. Some cotton manufacturing machinery may be destroyed by military operations.

Fats and Oils.—Exports of lard and soybeans are expected to increase somewhat as result of wartime interference with shipping and rise in costs of shipping along trade routes from the Far East to the warring nations and the neutrals in the war zone. Imports are not likely to be affected one way or the other.

Hog Products.—Disappearance from the British markets of pork supplies from Poland and other Baltic countries seems likely to increase British takings of United States pork. However, bacon rationing is to be started soon in Britain, and beef and mutton are likely to be used more heavily than during the World War, both by the military and the civilian population. Prospects are that increase in pork exports will not assume anywhere near the proportions of the World War period.

Dairy Products.—Exports of evaporated milk are expected to increase as a result of war.

Feed Grains.—There is little wartime influence directly on exports of feed grains.

Experts Judge Grain Show Entries as to Milling, Baking

Chicago, Ill.—Breads of the second special milling and baking contest, made from wheats grown for entry in the International Grain and Hay Show, were recently judged by a committee of well-known cereal technologists in the W. E. Long Co. laboratories here.

The 17 entries of North American wheats and eight Argentine wheats submitted for quality at the international show were milled to specifications and then subjected to standard baking tests under the W. E. Long Co. baking laboratory routine. All breads were then scored and studied by the bread judging committee, composed of Dr. E. G. Bayfield, department of milling industry, Kansas State College, Manhattan; Dr. M. J. Blish, principal chemist, Department of Agriculture, Western Regional Research Laboratory, Berkeley, Cal; Dr. William H. Cathcart, American Institute of Baking, Chicago; L. W. Haas, W. E. Long Co., Chicago; Ralph W. Mitchell, Purity Bakeries Corp., Chicago, and F. T. Dines, Oklahoma Agricultural and Mechanical College, Stillwater.

At the same time, samples of the same wheats were graded by the grain judging committee at the show for their external appearance and quantities. The final score was based upon 80% milling and baking value and 20% on external appearance of the grain.

This is the second year in which wheat developments and exhibit samples were studied for their baking values as well as for appearance. Much of the credit for this more practical procedure goes to Dr. John H. Parker, director of the Kansas Wheat Improvement Association, who suggested the plan, and already much valuable information has been accumulated on these wheats. In state wheat shows of the major wheat producing areas, similar type contests have been adopted, in which the combined appearance, milling and baking scores replaced the old wheat shows which had set up standards of wheat perfection based only on external appearances.

The International Grain and Hay Show management expressed its grateful acknowledgment for assistance in these milling and baking tests to the following organizations:

Department of agronomy, Oklahoma A & M College, Stillwater; department of milling industry, Kansas State College, Manhattan; Hard Red Winter Wheat Quality Laboratory, Manhattan, Kansas; Western Regional Research Laboratory, Berkeley, Cal; the W. E. Long Co., Chicago, Ill; American Institute of Baking, Chicago, Ill., and Purity Bakeries Corp., Chicago, Ill.

Just as the International Live Stock Exposition management has been placing emphasis on the utility basis in their judging of farm animals, so are International Grain Show managers stressing the commercial utility value of wheat entries, and the plan is to continue these special wheat milling and baking contests in future years.

The placing of entries of the 17 hard red winter wheat samples of the Southwest and the eight Argentine wheats was as follows:

SOUTHWESTERN UNITED STATES HARD RED WINTER WHEATS

Place—Variety—Grower—Address—

1—Tenmarq, Clarence Fulton, Harper, Kansas.
2—Tenmarq, H. E. Magrow, Montrose, Colo.
3—Hard, Harry Schmidt, Wray, Colo.
4—Kanred; Albert Weaver, Bird City, Kansas.
5—Tenmarq; Theodore Krapp, Spearville, Kansas.
6—Tenmarq; D. V. Nelson, Goltry, Okla.
7—Tenmarq; W. H. Crawford, Grandfield, Okla.
8—Tenmarq; Floyd Tauson, Grandfield, Okla.
9—Nebred, William Dunlap, Orleans, Neb.
10—Nebred; Chester Grau, David City, Neb.
11—Turkey; Everett Berkhead, Beloit, Kansas.
12—Nebred; Roy Pearson, Orleans, Neb.
13—Turkey; E. A. Mattet, Hooker, Okla.
14—Turkey; Minor Simms, Panhandle, Texas.
15—Tenmarq, A. W. de Belle, Amarillo, Texas.
16—Turkey; Asa H. Payne, McDonald, Kansas.
17—Cheyenne—Reynolds Land Co., Madrid, Neb.

ARGENTINA WINTER WHEATS

1—Otto Wulff, Romano Hnos, Serrano, F. C. P., Argentina.
2—Lin Calel-Duro; Julio Schinea, Molanos, F. C. S., Argentina.
3—Buck Guatrache-Duro; Domingo Cromanti, F. Tibercia, F. C. P., Argentina.
4—K. Acero-Semiduro; Teodoro Pafundo, Serodino, F. C. C. A., Argentina.
5—38 M. A. Semiduro; Ballore Hnos, La Francia, F. C. C. A., Argentina.
6—Klein 32-Semiduro; Bartolome Depetris, El Trebol, F. C. C. A., Argentina.
7—Piramide-Duro; Traverso Hnos y Cent. Junin, F. C. P., Argentina.
8—Guatrache-Duro; Antonio Campana, Capetonna, F. C. S., Argentina.

Today & Yesterday

THE BATTLE OF THE MILLS

By Harvey E. Yantis

(Reprinted, by request, from The Northwestern Miller of Oct. 19, 1927.)

The trade of the mills of Adolphus Jones
Was a golden trade, and fine—
And I wanted the trade of Jonesey's mill,
And he wanted the trade of mine!

"I will get that trade of yourn," says he,
"In spite of fire and flood!"
And he laughed in his brutal, brackish way
As he swigged a dipper of blood.

I spat on the floor, and I drummed on my teeth
With the knob of a bear's thigh bone,
And I swore by the profit sheets that hang
By the side of Hell's high throne,—

I swore, "I will have that trade of yourn
Though I wade waist-deep in gore!"
And he in turn bared his bitter teeth
And spat upon the floor.

Every one cowered all mute with dread.
And the Seven Seas were whist
As each one swung on a great bull's skull
And crushed it with his fist.

"We are brand to brand and cost to cost,"
Says I, "and steel to steel!"
"We are," says he, "and I'll grind your heart
Beneath my hobnailed heel!"

O dread it is when the crocodiles
Roar murder through the night,
But it's dreader still when a bullnecked mill
Goes bellowing forth to fight!

O dread it is when the long-horn whales
Rage through the reddened deep,
But when millers war not ever the gods
Can get their proper sleep!

The markets flickered with running flame
And the flour streamed underneath
As muzzle to muzzle the two mills swung
And fought with claws and teeth.

The yellow moon turned white with fear,
The sun forgot to set,
As out of the wheat gorged west there rolled
A river of blood and sweat.

And his claymore severed my jugular
And mine cut through his heart,
And I think that both of us felt chagrined
As, dying, we fell apart.

And he said with a groan as his spirit passed—
As his blood dripped, drop by drop—
"You wanted my trade, I wanted yourn:
Why didn't we think to swap?"

"That's so," I said, as I weltered und died
Upon the office floor,
"We might have swapped 'em—I wish that scheme
Had occurred to us before!"

For a monument, over the place we fell,
Our brands rise, side by side,
And our customers maunder above our tombs
And wonder why we died.

"Time an' again," said Old Dad Fetchit of the Fish River Roller Mills, "I get to thinkin' that in goin' on right clost to two thousand years, they'd ought to be thought up a way to wish happiness to folks that's got some new kind of ketch to it. An' yet, when it comes right around Christmas an' you see the holly an' the mistletoe hangin' in the windows, and the kids with a light shinin' in their eyes that nothin' else can't put there, an' you c'n already hear the bells ringin' to tell the old, sweet story of the little town of Bethlehem, it don't somehow seem wuth while to try for thinkin' up somethin' new. I allow it's one case where old things is best, an' that they won't ever be any words that'll tell the story of 'peace on earth, good-will toward men' like jes' sayin' 'Merry Christmas.'"

A NEW CLAIM FOR BROWN BREAD

A German daily newspaper, the *Deutsche Allgemeine Zeitung*, advocates an increased consumption of "brown bread" to cure "black-out blindness." Owing to the darkened streets of Berlin there have been a large number of accidents for which night-blindness is held responsible. For this malady brown bread is recommended as a cure, because it contains a high percentage of Vitamin A, and Vitamin A, so it is claimed, enables the human eye to function in semi-darkness.

It is evident that many people in the British Isles also suffer from night-blindness if the increased number of accidents, owing to the blackout, is any criterion, over 2,000 people having been killed on the roads during the first two months of the war, many of them adult pedestrians. It therefore would seem to be policy for everyone to start eating brown bread to sharpen the eyes. However, the brown bread of England and the brown bread of Germany are not the same, the former mostly being made of wholemeal wheat and the latter of rye.

C. F. G. R.

UNIFORM DIET

Being somewhat disposed to doing things in a dignified way, i.e., taking our time and plenty of it, we were delighted to see the doubt thrown upon the attractions of the new high speed airlines between New York and the Pacific Coast by the *New York Times*. What is the use, they ask, of getting to Los Angeles in time for breakfast, for breakfast will be the same old orange juice, toast and coffee. One can get that in any place.

Which plaint serves to bring to mind one of the penalties of standardization that seems to stem directly from the improved ease of getting from one part of this country to another. Time was when breakfast, to say nothing of dinner and supper, took some character from the locality in which it was served.

The deep South had its grits and grunts to balance against the doughnuts and pie of New England, while the Bolivars of New York and the scrapple of the Quaker City matched the corn and sorghum of the Middle West.

One pauses to shed a tear over the fact that with all such good, traditional foods to draw upon, Americans should regiment themselves into a uniform diet and then crow about it.—*Food Industries.*

THE SOVIET-GERMAN GRAIN DEAL

The *London Corn Circular* makes the following interesting comments, editorially, on the recent large purchase of grain by Germany from Russia:

"When the news that a huge Soviet-German grain deal had been concluded was made known it caused considerable surprise for several reasons. The war did not begin until the first day of September, and up to that time the Soviet's grain exporting department had not sold any wheat abroad from the 1939 harvest, though a moderate quantity of barley had been sold and shipped. It seemed unlikely that wheat should have formed much of the million tons included in the deal with Germany. There never had been any suggestion that Germany was short of bread grain, and it was reported during the over-running of Poland that where stacks of grain were found the Germans got to work with threshing them and having them taken away for their own use. Subsequent news respecting the deal with the Russians indicates that what has been "sold" consists of grain for fodder. An Exchange Telegraph message from Amsterdam, for instance, says: 'It is reported here that Germany is pressing Russia for the immediate delivery of the 1,000,000 tons of grain for fodder which have been promised to her, for she fears that she again may be faced with the catastrophe which befell her in 1914. Then vast numbers of her pigs had to be slaughtered owing to lack of fodder, and this caused a shortage of pork which was felt until the end of the war.' The Nazis have always violently condemned 'German Jews' in authority at that time who ordered the slaughter, but now they themselves are faced with the possibility of having to follow that example.

"An article in the German press on Nov. 13 declared that no German authorities would ever again permit such a slaughter of pigs, but it is added: 'The government is collecting every ounce of fat. It is not needed at the moment, but in the coming weeks and months it can prove to be a valuable treasure.'"

Of all fruitless errands, sending a tear to look after a day that has gone, is the most fruitless.—CHARLES DICKENS.

BAKER AS A CONSUMER

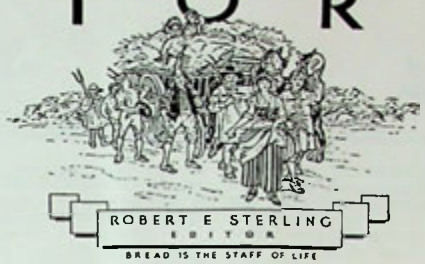
Without giving the source of its figures, the *Pathfinder* for Nov. 11 estimates that the American baking industry annually spends about $350,000,000 for flour, $116,000,000 for butter, $73,000,000 for sugar, $14,000,000 for eggs and $37,000,000 for milk.

SUBSCRIPTION RATE
The Northwestern Miller, published weekly on Wednesdays, including supplements as published:
1 year, 52 issues and supplements - $2.00
3 years - - 5.00

THE NORTHWESTERN MILLER
Main Office: 118 South Sixth Street, Minneapolis, Minn.
Associated Publications: THE NORTHWESTERN MILLER AND AMERICAN BAKER, FEEDSTUFFS *and* MILLING PRODUCTION

Senior Member of a Long-Established Family of Trade Journals Serving the Flour, Grain, Feed and Baking Industries

EDITORIAL



TIME TO STICK TOGETHER

WE are disappointed to observe that certain elements of the grain trade, including some of its leaders, are assuming an attitude of indifference toward the suggested restoration of the processing tax on wheat. In instances this attitude apparently goes beyond indifference and approaches outright favor for reimposition of the tax in its new "certificate plan" disguise.

We regret having to add to this expression the further statement that the position taken, or threatening to be taken by some of these gentlemen, is rather frankly based on the self interested hope that in return for the grain trade's support, or, at least, lack of opposition, for the certificate plan, the administration will be more inclined to favor that trade by imposition of fewer restrictions upon its operations. Such hope is, in our judgment—based on observations through the past six or seven years—wholly without justification. The grain trade will be in precisely the same danger of being sold down the river of "programmed agriculture" whether or not it opposes processing taxes.

Several months ago and from time to time in the interim, we suggested that all of the bread industries had common cause in the need to oppose reapplication of direct consumption taxes to wheat and its products. We coupled with this a proposal that the opposition of all these industries should be co-ordinated through a joint committee. Millers shortly thereafter set up their own special committee with a membership of three of its most representative members and two executive officers of the Millers' National Federation. The Grain Trade Council, as we recall, took similar action; and we are informed that the baking industry, through its national organization, proposes at the proper time to co-operate.

All of this is in order. The federation committee and, in particular, the federation's Washington office, already has been doing excellent work in calling the attention of other national organizations, especially of consumers, to the danger of reimposition of the bread tax. It is fully assured that there will be plenty of opposition to the scheme when the rephrased and broadened Wheeler Bill comes up for attention at the next session of Congress. This is certain whether or not the scheme has presidential support, which so far apparently is somewhat doubtful.

If now and under these circumstances members of the grain trade were to elect to try their hand at making peace with the Wallace organization, the trades most directly concerned will show a broken rather than the much-to-be-desired united front, and they probably will take another licking just as they have taken others in these six troublesome and trying years.

We very well recall and have referred on other occasions to the timidity of some millers in expression of opposition to the processing tax when it previously was pending in Congress. These safety-first gentlemen quite honestly believed that there might be both grace and possible profit in rocking along with administration schemes even when those schemes included putting a destructive tax upon their products. They did rock along—and what did they get?

This new certificate scheme is a proposal of despair. It clearly is quite impossible to go through other years of reckless distribution of billions to agriculture or to any other group. Thus the whole farm "program" faces the necessity of being made "self-financing," which means, in this instance, paying for it through an unconscionable tax upon the very first necessities of life, food and clothing. To oppose such a scheme is not unconcern for agriculture but rather evidence of very real concern for the future of the country, including agriculture itself, in combating huge new grants to witless public servants whose six years of effort and astronomical expenditures have served merely to add limitless confusion to the agricultural "problem."

So, in our judgment, such part of the grain trade as may just now be playing with this "program" of courting favor with the economic inventors at Washington by taking a course opposite to that of the country's millers not only are indifferent to their duty as intelligent citizens but are likely to do their own industry a material disservice. Now, if ever, members of these agricultural trades, wicked processors and middlemen though they may be, should stand together in opposition to as iniquitous and inexcusable a tax as ever was proposed in this or any other country. We suggest, therefore, to these men who possibly contemplate parting from their associates to take further thought before embarking upon their horse trading adventures in hope of Washington's favor.

—BREAD IS THE STAFF OF LIFE—

WHERE TO DO THE TAXING

SECRETARY OF STATE HULL, in his characteristically fair and reasoned defense of his trade agreement program before the American Farm Bureau Federation at Chicago, said:

> "What are these imports of agricultural products that you hear so much about? None of the self-styled friends of the farmer will ever tell you the fact that two thirds of what we brought in during the first nine months of 1939, or about $530,000,000, were products which even the authors of the Hawley-Smoot tariff considered so incapable of displacing our own farm production and so indispensable for our people that they were left on the free list in the Tariff Act of 1930. Among these were such products as coffee, rubber, raw silk, bananas, cocoa beans, tea, carpet wool and sisal, etc., which we do not produce at all in this country. What farmer was hurt by the $121,000,000 of rubber we brought in during this period? Or by the $101,000,000 of coffee? Or the $75,000,000 of raw silk? Or the $22,000,000 of bananas, the $20,000,000 of cocoa beans, the $19,000,000 of carpet wool or the $15,000,000 of tea, and so on?"

We are quoting this statement and these figures from Secretary Hull's address for two reasons. One of these is to confess our long-time puzzlement as to why these commodities listed by Secretary Hull and many others continue to be, as if by possession of some moral right, on the duty free list. Why are they not used in these times of taxation on basis of all-that-the-traffic-will-bear to supply more revenue for government? Or, if not that, why are not duties imposed on these major agricultural crops of other countries and then, under Secretary Hull's agreement plan, traded away for compensating advantages for our own agricultural commodities? It never has made sense to us that we should give free entry to scores of millions of dollars' worth of Brazilian coffee while that nation virtually prohibits importation of our wheat and flour.

Our second reason for quoting the figures on volume of agricultural imports is even more pertinent than the question of their duty-free entry. It is to suggest that, if it be true that direct consumption taxes must be placed on products of agriculture to finance our farm relief program, those taxes quite properly might be placed upon imported commodities rather than upon the products of our own farms. Nothing can be more obvious than that, with Secretary Hull's scheduled imports approximating in dollar value our domestic consumption of wheat, a tax of thirty per cent on their processing would be the equivalent, in "processing tax" or "certificate plan" revenue, of the suggested excise of thirty cents per bushel on wheat.

Our own economic understanding, together with our poor political wisdom, are unequal to the task of comprehending why we should tax our first essential of life, grown on our fields by our own people, while apparently regarding raw silk and rubber or bananas and cocoa beans as in some way sacrosanct. Neither can we follow through on the philosophy of reflecting such decreased consumption as naturally results from direct taxes upon the wheat and cotton, of which we have such great surpluses, while giving immunity to silk, for which, incidentally, we are now producing wholly acceptable substitutes from American produced raw materials.

There may be, of course, some hidden advantage in this, such, for example, as the need to maintain our imports and consumption of silk to provide exchange for Japan's purchase of our scrap metal and gasoline for the waging of its wars of terrorism and conquest. We would not know about that, but the frontiers of our own reasoning are sufficiently wide to permit our belief that this particular kind of international trade is less desirable than its equivalent in domestic trade in and consumption of our wheat and cotton.

We have been told by those in authority that our "good neighbor" policy stands in the way of our placing duties on these noncompetitive agricultural imports, chiefly of tropical or semitropical production. This clearly suggests examination of the relative values of being a "good neighbor," leaning a little toward the fat-headed side, or being a "Yankee trader" looking after ourselves in a time when the world is setting swaggering greed so far above the—in a practical sense—so largely discredited golden rule.

In any case, there would be no "good neighbor" question involved in our taking a tax chop at silk and rubber and coffee and their alien economic kinsmen *after* they have been given free entry into the country. We would be doing no more to them than we have done and are again ambitious to do to the products of our own farms and farmers. Surely none reasonably could object to that, although, as a matter of fact, many doubtless would.

—BREAD IS THE STAFF OF LIFE—

WHOLESOME MARKETS

THE merest general survey of the current position in wheat and flour markets as it affects millling reveals a situation which, if properly utilized by millers in their own interest, should result in a period of sound profits.

Points worth considering are: (1) wheat, following the initial war boom, has fairly held its own and now, on a perfectly free market basis—primarily influenced by the Argentine and domestic winter wheat conditions—has reached a dollar a bushel with an apparently healthy undertone; (2) millfeed prices held well through the several weeks of high production and now are reflecting reduced mill activity; (3) rate of flour production, considered in connection with mill reports on their order "backlogs" suggests that the big overbuying in September is fairly well taken care of and that wider buying interest will shortly be in evidence; (4) millers are less panicky over the danger of someone else getting an order now and then.

This summary of conditions is by no means intended as a market forecast. There are far too many disturbances in the world for anyone safely to suggest the price course of any commodity. Yet, these are free markets reflecting supply, demand and public price opinion far over the head of any sort of government manipulation save the single factor of loan wheat. Even that may be regarded as being "as broad as it is long" because the price weight of that accumulation is reduced by widespread suspicion that much of it will in due time be unfit for milling.

The moral of the whole position appears to be that it clearly is up to flour millers to recognize the obvious blessings within their reach. To do this they have got, first of all, not to mistake such "holiday dullness" as may develop for a sign that some other miller is getting all of the business. Second, they have got to sell whatever flour they do sell against their own wheat costs and feed recoveries and not against some mythical something or other, particularly including fear that they may have to reduce operations.

And the second moral is in an age-old aphorism, to wit: "The Lord helps those who help themselves."

Canadian

CONDUCTED BY A. H. BAILEY
Manager Canadian Branch
1001 Lumsden Bldg. Toronto 2, Ontario
Cable Address, "Palmking"

BRITISH HONDURAS FLOUR TRADERS TURN TO CANADA

TORONTO, ONT.—British Honduras, which market generally obtains a large share of its imports of flour from the United Kingdom, has been showing interest recently in the Canadian product. Importers there are seeking connection with Canadian mills for supplies of flour required to take the place of English flour which is more or less out of competition for duration of war. The flour trade of British Honduras was recently the subject of a report by the Canadian government trade commissioner at Kingston, Jamaica. Total imports in 1938 amounted to 42,181 bags of 196 lbs. Of this quantity Canada supplied 11,530 bags, the United Kingdom 12,267, United States 16,907 and Australia 1,477. The United Kingdom and Canada are usually the main sources of supply.

Under existing conditions arrivals are not expected from the United Kingdom and there is no indication of increases from Australia. Therefore Canada and the United States will be called upon to supply the deficiency. Whether Canadian mills are able to increase their sales depends largely on their ability to supply the low grade flour which comprises probably two thirds of the colony's requirements. The bulk of Canada's shipments have been in the baking grades but the market absorbs a larger proportion of the so-called counter flour. There are several large distributors in Belize with whom it is advisable to trade. Import duties are at a rate of 75c per 196 lbs general and 25c preferential tariff. There is also a package tax of 10c per package which is applicable to importations from all sources. A system of price control has been instituted under the Emergency Powers (Defense) Act. Only two grades of flour are recognized, namely, baking and "ration" or "counter" and a maximum price is fixed for each grade.

—BREAD IS THE STAFF OF LIFE—

AUSTRALIAN GOVERNMENT HANDLES OLD CROP WHEAT

TORONTO, ONT.—The Canadian government trade commissioner at Melbourne, under date Oct. 16, supplied an interesting report on Australian wheat and flour. He states that all stocks of old crop wheat in Australia (about 10,000,000 bus) were taken over by the government on Oct. 9. This was done for the purpose of cleaning up stocks available for export before the new crop began to pour in. All wheat for seeding purposes, research use, stock feed, already under contract for sale or held by millers for grinding was expected. Prices for old wheat so acquired were fixed by the Australian wheat board as follows:

Victoria, 2s 10d bu, on trucks, Melbourne basis; New South Wales, bagged wheat, 2s 10d on trucks, and bulk wheat, 2s 8d, trucks, Sydney basis; South Australia, 2s 8½d, on trucks, Adelaide basis; Western Australia, bulk wheat 2s 7½d, bagged 2s 9½d, f.o.b. The higher prices for Victoria and New South Wales wheat are due to shortage of stocks within those states.

Arrangements were made with the Commonwealth Bank for an advance of 2s bu, f.o.b., against old season's wheat. After allowing for expenses this will provide 1s 4d bu net to growers. In addition about 5d bu, the amount available from last year's collections of the tax on flour consumed in Australia, will be distributed to producers on all wheat sold or delivered. A total of £750,000 will also be made available by the government for the adjustment of farmers' debts for 1939-40.

—BREAD IS THE STAFF OF LIFE—

CANADIAN FLOUR IMPORTS

TORONTO, ONT.—The Dominion Bureau of Statistics advises that imports of flour into Canada in October totaled 14,593 bbls valued at $56,918 as compared with 7,895 bbls having a value of $26,947 in the same month last year. Particulars as to quantities, countries of origin and average values per barrel are given in the following table:

	Bbls	Av. value per bbl	Bbls	Av. value per bbl
		$		$
U. Kingdom	...	...	...	14.57
United States	10,472	4 41	6,513	3.39
Australia	4,113	2.57	1,337	2.39
Alaska	4	16.00	8	15.25
Hongkong	4	9.50	...	...
	14,593	$3.90	7,895	$3.41

As usual the United States supplies the largest quantity. This is mostly soft wheat flour imported into British Columbia and Alberta from Pacific Coast states. It will be noted that there has been a decided drop in the price of Australian flour as compared with a year ago.

—BREAD IS THE STAFF OF LIFE—

JAMAICAN FLOUR IMPORTS SHOW WAR-TIME INCREASE

TORONTO, ONT.—The Canadian government trade commissioner at Kingston, Jamaica, reports imports of flour into that island during October last at 65,075 bbls compared with 31,638 in September. Apparently, there was a sharp increase in buying after the outbreak of war. The countries of origin and average price (sterling) per bag paid for this flour are shown hereunder:

	October		September	
From—	Bags of 196 lbs	Average price per bag	Bags of 196 lbs	Average price per bag
U. K'gdom.	40	£1 10s 0d	3,787	£0 18s 2d
Australia..	21,144	10s 9d	4,009	16s 1d
Canada ...	39,682	1 0s 8d	23,347	0 17s 8d
U. States.	4,209	1 2s 2d	495	1 7s 10d
	65,075	£0 17s 5d	31,638	£0 17s 8d

It will be noted that notwithstanding the difficulties of shipment from Australia due to the war there was a large increase in imports from that country as well as from Canada.

—BREAD IS THE STAFF OF LIFE—

CONSOLIDATED BAKERIES DIVIDEND

TORONTO, ONT.—Consolidated Bakeries of Canada, Ltd., Toronto, will pay an extra dividend of 25c per share, plus the regular quarterly of 25c on Jan. 2, 1940. The current payment will establish a nine-year record for quarterly disbursements, the company not having paid out more than 40c per share in one quarter since April 1, 1930, when 50c was distributed.

—BREAD IS THE STAFF OF LIFE—

ROBERT M. BRYAN HEADS EXCHANGE

VANCOUVER, B. C.—Robert M. Bryan, head of Hall Bryan, Ltd., is the new president of the Vancouver Merchants Exchange. First vice president is Captain J. H. Cates, towboat operator, and H. R. Plommer, head of Canadian Collieries, Ltd., is second vice president. J. H. Hamilton, secretary of the exchange since its inception, continues in office.

Mr. Bryan is well known in western grain circles, having been engaged in the trade as farmer, miller and exporter for the past 25 years. He farmed in Manitoba, operated on the Winnipeg Grain Exchange, was export manager for Vancouver Milling & Grain Co. until Spiller decided to close out the local office. Since then he has been engaged in grain dealings as head of Hall Bryan, Ltd.

—BREAD IS THE STAFF OF LIFE—

SPRING WHEAT MILLS HAVE AN ACTIVE PERIOD AHEAD

TORONTO, ONT.—Reports from the larger spring wheat milling companies of Canada indicate an active period ahead. They have enough unfilled orders on their books to absorb output to end of this calendar year. The general feeling is that export orders will continue in sufficient volume to keep plants going for some time. This, coupled with a steady domestic trade, should mean full time well into the new year. Export prices are close to cost, which makes most millers unwilling to predict the rate of profit likely to be shown during the current crop year.

—BREAD IS THE STAFF OF LIFE—

WEST INDIES FLOUR IMPORTS

TORONTO, ONT.—An interesting table showing imports of flour into the markets of the West Indies is issued monthly by the Canadian National Millers Association, Montreal. From this is compiled the following showing the figures by countries of origin for the first nine months of 1939:

January-September, 1939, in bags of 196 lbs:

	From—			
	Canada	U. K.	Australia	U. S.
Trinidad	181,825	41,671	15,953	1,39[illegible]
Br. Guiana	[illegible]	77,640	150	[illegible]
Barbados	29,707	36,910	...	2,699
Jamaica	188,241	[illegible]	85,793	12,253
St. Vincent	12,001	[illegible]	40	1
Antigua	13,031	422	...	49
Grenada	14,396	12,891	811	...
St. Kitts	16,280	491	1,078	15
St. Lucia	10,950	978	35	1
Dominica	[illegible]	[illegible]	...	...
Montserrat	[illegible]	218	64	...
	549,077	222,272	133,964	17,065

It will be noted that Trinidad and Jamaica are the largest markets for Canadian and Australian flour, while British Guiana is the best for the product of the United Kingdom.

—BREAD IS THE STAFF OF LIFE—

THOMAS E. THOMSON DEAD

WINNIPEG, MAN.—Thomas E. Thomson, assistant general manager and secretary of the National Elevator Co., died at his home in Winnipeg early Dec. 9. He had been in poor health since June. During the World War he served with the United States Navy. Surviving are his wife and two sons at home. Burial will be at Mount Vernon, Ind.

—BREAD IS THE STAFF OF LIFE—

GROWS WELL IN AFRICA

WINNIPEG, MAN.—Canadian wheat shipped from a Manitoba point to a United Church mission at Angola, Africa, in October, 1938, has grown well and may prove valuable for production in that area, according to recent word from the mission.

—BREAD IS THE STAFF OF LIFE—

CANADIAN OATMEAL EXPORTS

TORONTO, ONT.—Canadian exports of rolled oats and oatmeal in October amounted to 59,980 cwts as against 87,778 in September and 93,009 in October, 1938. The United Kingdom is the principal importer of these products taking 50,270 of the total exported in October last.

AGREEMENT IN PROSPECT ON GREAT LAKES WATERWAY

TORONTO, ONT.—News from Ottawa indicates that agreement is being reached in the matter of joint construction by the United States and Canada of the long-discussed deep waterway from the Great Lakes to the Atlantic. Perhaps war is hastening negotiations for completion of the job. It will give the United States a great addition to its supply of hydro-electric power in vicinity of the route and enlarge the volume of water-borne commerce from all Great Lake regions to the sea.

Much of the work on this new highway to the Atlantic has already been done by Canada in the course of her many years of canal-building along the St. Lawrence and on the upper and lower lakes. The Welland Canal will be an essential part of the new system. This costly job was completed not long ago by Canada at her own expense.

In financing the work still to be done the United States will make allowance to Canada for her share of costs already incurred. One estimate places the sum required for the work now to be undertaken at $200,000,000.

—BREAD IS THE STAFF OF LIFE—

WINTER WHEAT IN STORE AT ONTARIO LAKE PORTS

TORONTO, ONT.—It is officially reported from Ottawa that Canada now has 1,533,765 bus of Ontario winter wheat in store at public elevators around the lower lake ports of this province. Of this quantity 344,991 bus is at Goderich, 742,913 at Sarnia and 443,913 at Toronto. These positions ensure that the wheat is available for milling in southwestern Ontario, where most of the mills which grind winters are located. A large percentage of the wheat shown belongs to the Canadian Wheat Board. Whether the board is willing to sell its present elevator holdings or not is a question. For the most part it makes deliveries to mills from current receipts at country milling points. Many farmers deliver to the board at the country mills and it is from these supplies that local sales are made. This saves freight and shipping expenses. Demand for wheat to be milled at country points is not at present heavy.

—BREAD IS THE STAFF OF LIFE—

SUBMARGINAL LANDS PRODUCE

WINNIPEG, MAN.—Submarginal lands which failed to produce returns during the drouth years and which have since been taken out of cultivation are now bringing in returns. Most of these lands are now operated as community pasture projects under the Prairie Farm Rehabilitation Act. In Saskatchewan alone almost every pasture showed an operating profit for the past season.

—BREAD IS THE STAFF OF LIFE—

BIG VALUE IN 1939 CROPS

WINNIPEG, MAN.—The gross value of the principal field crops produced in Canada in 1939 was $635,764,000, compared with $514,443,000 in 1938 or a gain of $91,321,000, according to an estimate by the Dominion Bureau of Statistics. The 1939 gross value is the highest recorded since 1930. The wheat crop was valued at $251,371,000 as compared with $205,195,000 in 1938.

European

CONDUCTED BY C. F. G. RAIKES
Manager European Branch
59 Mark Lane London, E. C. 3, England
Telegraph and Cable Address,
"Northwestern Miller, Mark Lane, London"

British Government Continues Purchases of Canadian Flour

LONDON, ENG.—A brisk trade in Canadian flours continued in the second half of November. The Cereal Import Committee accepted all reasonable offers that complied with its terms of sale. Judging from the volume of purchases reported Canadian mills must be running full time. It is understood that 23s f.o.b. Montreal, or 24s f.o.b. Atlantic port, was being paid.

Although Canadian millers complain in their letters that there is scarcely any money to be made in filling these orders, the trade on this side is of the opinion that with the present price of wheat in Canada, including the price of feed, millers should be making a nice profit.

Recently, some American soft winter wheat flour was allocated to importers for distribution among their customers. The flour had to be sold at 32s per sack instead of the fixed price of 22s at which other flours are sold. This flour was originally sold for shipment to Glasgow, but came to London instead. In spite of its high price it was taken by biscuit manufacturers.

Owing to the wet weather which has been experienced lately but little threshing of the English wheat crop has been done, and, as a result, English wheat flour is in small supply.

Netherlands Flour Market

AMSTERDAM, HOLLAND.—During the first week of November business in imported flour was badly hampered by great scarcity of freight room occasioned not only by the war but also and to an increased extent by the changes of the United States Neutrality Act. As the North Sea belongs to the "dangerous zone" under this act, the American steamship lines which used to carry flour shipments purchased by Netherlands importers are unable now to continue this trade. Even for goods consigned to the Netherlands government it is extremely difficult to find shipping opportunity. Early November offers of American flour were high. Southwestern hard wheat patent was offered at $4.90 per 100 kilos, Buffalo patent at $5.50 and Nebraska top patent at $5.90, cost Holland freight. Netherlands flour mills continued to sell their standard grade at $7.05 per 100 kilos, delivered.

ADDITIONAL FLOUR STORAGE BY BAKERS IS DISCONTINUED

LONDON, ENG.—A notice has been issued to bakers by the Ministry of Food informing them that they will no longer be required to store flour over and above their usual requirements. About a year ago a scheme was put into effect by the Food (Defense Plans) department, now the Ministry of Food, whereby bakers were asked and encouraged to store as much additional flour, in excess of their requirements, as possible. The bakers purchased the flour but were paid 2s 6d per annum (60c) per sack of 280 lbs by the government for storing it. One of the conditions of the scheme was that it would cease automatically on the outbreak of war. Therefore payment for storage will be made to the bakers by the government up to Sept. 3, when a state of war was declared. A number of bakers took advantage of the scheme, the total purchases for storage being around 80,000 sacks of 280 lbs.

—BREAD IS THE STAFF OF LIFE—

FOOD REGULATIONS IMPOSED IN LUXEMBURG AND BELGIUM

AMSTERDAM, HOLLAND.—The Luxemburg government has decided that, except in cases where the minister of agriculture has given dispensation, all stocks of bread grain (wheat, rye and mixed corn) stored by millers, dealers and bakers, must be used for the production of flour destined for human consumption. Further, growers are obliged to keep a permanent stock for this purpose, the quantity of which is based on the acreage sown by them in the crop year 1938-39 and fixed by the minister of agriculture. Infringement of these regulations will be punished with imprisonment for a period of eight days to three years and /or a penalty from 51 to 20,000 Belgian francs. Similar measures have been taken by the Belgian government.

BRITAIN'S HOME-GROWN WHEAT AND FLOUR RULES CLARIFIED

LONDON, ENG.—In order to remove a misunderstanding, a notice was issued under date of Oct. 26 by the Cereal Control Board of the Ministry of Food, stating that the recent cancellation of certain restrictions referred to the use of home-grown wheat only. This was in connection with setting free home-grown wheat for feeding to livestock. The notice points out that the use of imported millable wheat by controlled flour millers, for the purpose other than the production of flour, is still prohibited.

Also to correct a misunderstanding in regard to the extraction of flour now permissible, the same notice states in effect that the minimum extraction of home-grown wheat remains at 70% of the total weight of clean wheat, whereas the minimum extraction of 73% is to apply to all mixed grists, whether or not a proportion of home-grown wheat is included therein.

—BREAD IS THE STAFF OF LIFE—

BRITISH FARMERS FEEDING WHEAT

LONDON, ENG.—British farmers are experiencing considerable difficulty in securing suitable feed for their livestock, such as corn and corn meal, barley and barley meal, etc., so that the Ministry of Food has issued an order whereby they may use home-grown wheat. Hitherto, no home-grown wheat has been available for the purpose, as under instructions issued by the Ministry of Food, on taking over control of the milling industry, the use of home-grown wheat was confined to flour milling and to seed.

It is understood that the purchase price of this wheat, both for milling and for feed, will be fixed at the maximum price of 31s 6d qr of 504 lbs, or 94c bu, the present price being 24s qr of 504 lbs, or 72c bu.

With the higher price of home-grown wheat the flour levy, in all probability, will be reduced, for if the farmer is obtaining more money for his sales of wheat the deficiency price payable to him to make up the price to 45s qr, as guaranteed by the government, is proportionately less. The flour levy creates the fund from which the deficiency price is paid to the farmers by the Wheat Commission, and varies according to the price of home-grown wheat in the open market.

—BREAD IS THE STAFF OF LIFE—

FLOUR ALLOCATIONS BASED ON AN INCREASED PERIOD

LONDON, ENG.—A notice to flour importers was issued under date of Nov. 8 by the Cereals Import Committee stating that in future allocations of flour for distribution will be on the basis of the average of three years' imports. Hitherto they have been on the basis of two years' imports. Importers, therefore, were asked to render immediately a return showing the amount of wheat flour they had passed through the customs at the ports covered by the London Port Area Grain Committee, namely, from King's Lynn (Norfolk) on the east coast to Southampton on the south coast, for each of the three years ended June 30, 1937, June 30, 1938, and June 30, 1939. It was required that this return should show total quantities only, under four headings: strong bread flours, in tons; Australian bread flours, in tons; French bread flour, in tons; low grade and feed flours, including second clears, French Z, etc., in tons.

The importers also were asked, in this same notice, to submit information, in detail, as to the warehouse space they would be willing to turn over to the London Port Area Grain Committee for storage of imported flour. Most of the importers rent warehouse space from railway companies at fixed rentals, and it is this space that the authorities desire should be made available for their use, the railway companies having expressed no objection to the transfer. The details required are the situation of the warehouses, the minimum amount of space and the agreed handling charges.

BREAD WAR AND WAR BREAD THREATENED IN LIVERPOOL

LONDON, ENG.—Liverpool is threatened with a bread war, a new bakery concern having appeared on the scenes which proposes to sell an unwrapped and unsliced loaf at 3½d (7c) per 2-lb loaf, against the standard selling price of 4d (8c). It also proposes to offer a special cheap loaf made from flour, yeast, salt and water only at 3d (6c) per 2 lbs, or at 2s 6d (60c) per dozen loaves of 2 lbs. The local bakers' federation, foreseeing that this venture might open up unrestricted competition, entered into negotiations with the firm with a view to reaching an agreement. As a result, the newcomer made the following offer: (1) To sell the ordinary loaf at the official price, namely 4d (8c) per 2 lbs; (2) to sell the special loaf at one halfpenny below the official price, namely 3½d (7c), and, subject to the acceptance of the foregoing conditions (3) to join the bakers' federation. Members feared that if this offer were accepted it would not be long before the stability of local bread prices became undermined, and so unanimously agreed that there should be no departure from the bread prices at present ruling in Liverpool. The offer, therefore, was turned down. It now remains to be seen what action the newcomer will take.

—BREAD IS THE STAFF OF LIFE—

MILLING REGULATIONS IN GREECE

LONDON, ENG.—It is reported in Broomhall's *Corn Trade News* that in future only two types of flour for bread-making will be allowed in Greece. Of these, the first quality will be milled at an extraction of 85% and the second quality at 95%. Millers will sell these flours direct to their customers, as hitherto. A third type of flour, known as a "luxury" type, of a 75% extraction, used for pastry-making, etc., may also be manufactured, but only on special permission from the under secretary of state. It is expected that these new regulations will effect a considerable economy in wheat imports.

Guaranteed Price of English Wheat to Be Raised to $1.32 Bu

LONDON, ENG.—W. S. Morrison, Minister of Food, during a speech in the House of Commons on Nov. 8, in connection with food rationing, said that in the near future he intended to ask parliament further to amend the Wheat Act. He maintained that in order to encourage arable farming and to assist farmers to expand production these amendments were necessary, and he had decided to ask for permission to raise the standard or guaranteed price of English grown wheat for the current cereal year from 45s to 49s 6d per qr of 504 lbs, which is equal to $1.32 bu. This means a corresponding increase in the deficiency payments to the British farmer and in the wheat quota or flour levy; also, incidentally, in the price of bread.

A writer in the *National Association Review* urges that every effort should be made to compel politicians to acknowledge publicly and declare that the proposed increase in the guaranteed price of English grown wheat will result in an increase in the price of bread.

The British Wheat Act (1932) guaranteed wheat growers in Great Britain 45s per qr of 504 lbs. The money required to pay the wheat growers the difference between the price at which they sell their wheat in the open market and the guaranteed price of 45s per qr is provided by a levy on all delivered flour, which is known as the flour levy or wheat quota. Since the act came into force the flour levy has ranged from 6d to 6s 6d per 280 lbs, except for one period—April 18 to Sept. 19, 1937—when it was suspended altogether. The levy is payable on both home-milled and imported flour. At the present time it stands at 3s 6d per 280 lbs. The deficiency payments made to British wheat growers for the cereal year 1938-39 amounted to £9,350,000. This was provided entirely by the flour levy, no call being made on the state treasury, and is actually paid by the bread consumer.

Stuffed Straights

FROM THE MANAGING EDITOR'S SIFTER

By Carroll K. Michener

GIDDYAP!—We do not know our friends properly until we have seen them on their hobbies, until we look into them as well as at them, when we become aware of Lord Chesterfields' dictum that "no man takes pleasures truly who does not earn them by previous business and few people do business well who do nothing else." Let us up, then, and off on our pleasure nags! True, as the old proverb maker hath it, "hobby-horses cost more than Arab steeds," but what does it matter so long as they carry us away from the daily absorptions of business and give us the release that not only rewards us for tolerating business but makes business tolerable?

Not long ago Herman Steen, vice president, Millers National Federation, listed in one of his "worm's eye view" bulletins a remarkable collection of milling trade hobbies. It must have been the fruit of a long-continued research. It was at any rate a journalistic stunt that made us turn several shades of green envy. About that time we had been thinking of undertaking such a research on our own part, but Herman had us beaten. We put the idea away until we could recover from our chagrin.

Today the hobby list came to the top of the pile again—the stack of unfinished business that perpetually reaches up from one corner of the desk to a peak like Pike's. And it gave us an idea. Why not get up a little competition? Promise the boys in the trade nice little write-ups of them and their hobbies, with pictures showing them astride the funny little horsies? We mean it. Let's go! Here are some samples of what might be recorded for our entertainment, most of them culled from Herman's long list:

David Page, president Thomas Page Mill Co., Topeka, Kansas, has one of the nation's finest herds of Ayrshires.

Fred J. Lingham, president Federal Mill, Inc., Lockport, N. Y., is an excellent mechanic, and owns more woodcutting tools than you could find in most wholesale hardware stores.

James F. Bell, chairman of the board of General Mills, Inc., Minneapolis, is an outstanding authority on birds and a great naturalist patron. (A new natural history building, due largely to his munificence, has just been completed on the University of Minnesota campus.)

L. C. Shellabarger, president Shellabarger Mill & Elevator Co., Salina, Kansas, is a skilled silversmith.

Edgar H. Evans, chairman of the board of Acme-Evans Co., Indianapolis, Ind., recently was awarded a doctor's degree on studies in religious education.

Ralph W. Hoffman, president Flour Mills of America, Inc., Kansas City, Mo., is a well-known cereal breeder.

John J. Vanier, president Western Star Mill Co., Salina, Kansas, operates a big ranch. So do Charles C. McClave, president Montana Flour Mills Co., Great Falls, Mont., and George Cormack, former General Mills superintendent.

Harold R. Ward, vice president and sales manager of Russell-Miller Milling Co., Minneapolis, raises blooded dogs, flowers, turkeys.

Frederick G. Atkinson, Atkinson Milling Co., Minneapolis, runs a dairy farm. (He tells us his prize Jerseys almost always bring home a nice profit from their annual rounds of the state fairs and livestock shows.)

Charles H. Briggs, Howard Laboratory, Minneapolis, is an internationally known Esperantist.

Harry S. Helm, president Russell-Miller Milling Co., keeps a famous stable.

C. T. Vandenover, sales manager, and Leslie Olsen, products control director, International Milling Co., Minneapolis, are amateur motion picture makers. So is C. G. Harrel, products control director of Pillsbury, who also is an expert pistol shot. Good shot of another variety is Chet Vandenover, who between pictures is runner-up for the national billiards championship (he didn't quite make the grade in last week's battle with Gene Deardorff, the United States title holder, but still has hopes).

But here we are getting over into sports, which would necessitate rostering pretty nearly the entire trade. Sports obviously are hobbies, for Webster's definition runs thus: "Any favorite object, pursuit or topic; that which a person persistently pursues or dwells upon with zeal or delight, as if riding a horse." But for our particular purpose we may have to define the word more closely—as if to say that not all sport is hobby but that there are sport-hobbies: Howard Pearlstone's deep-sea fishing, for example, or Mr. Bell's hunting in Labrador.

Webster does not seem to give hobbies a purely amateur status, and in some of the persistent pursuits mentioned here there may be money as well as fun—but probably not, as the old adage insists. Anyway, all of them are side bets and really belong in the hobby stable.

Rare, it seems to us, must be the man who has no pet pursuit—and of a certainty unfortunate. But biographies don't have much to say about these things, and most men are reticent about them save as they discover sympathetic souls who invite revelation. It's not easy, therefore, to scare up hobbies and get them running from the brush piles of private life. This is one of the most emphatic, and doubtless often annoying functions of modern journalism, however, so don't be timid and hold back on us, folks! Step right up and let us see your dolls and jack-knives! We'll show you ours—and maybe we'll trade you.

Rewards for these revelations? Come, now—let's make these nominal: a mug of ale, we'll say, in The Northwestern Miller's Club Room, and/or considerations equivalent or additional as the occasion demands.

≈ ≈ ≈

Tea, cheese and bread are palling up in a three-way promotional program; which makes us wonder how come wine hasn't yet thought of playing Omar's tip.

CAME THE DAWN.—If it makes any difference to anyone, journalism opened its eyes to the opportunities rosily expanding before it in the flour milling industry of this country just prior to the Civil War. Makes us sort of shudder to think of the vastness of benighted time, reaching down to that point from antiquity, in which there was no milling trade journal!

What starts this is the fact that the office librarian, clearing out a cabinet or something, has just laid down before us with the triumphant air of all collectors of antiques, Vol. 1, No. 1 of the *Miller's Journal*. We'd have said right off that this was the very Adam of flour milling journals. But it isn't, we find, as we check our facts. Ten years before this first issue of the *Miller's Journal* came wet from the press with its four flimsy pages, the *American Miller* made its appearance in Buffalo.

Let us make haste to explain that this *American Miller* was no kin of the present journal of that name, which began its career in Chicago 22 years later, after the old original had long since been gathered to its fathers. The pioneer, in fact, lasted for only 27 issues, dying off on July 17, 1852.

It was on May 1, 1861, that the *Miller's Journal* made its bow as "a monthly journal devoted to the interests of millers." It was particularly devoted to the millers of Ohio, and went into the mails at the town of Bucyrus in that state. Messrs. Raub and Butterfield were the publishers. These gentlemen were also manufacturers and distributors of milling and grain machinery, though they held no objection to the publication of advertising from their competitors; in fact, they made this frank confession:

"For remuneration, we expect to depend almost entirely on our advertisements, asking the co-operation of our friends."

In their editorial introduction Messrs. Raub and Butterfield set forth that there were in Ohio at the time something like 2,200 flouring mills.* Not only did they expect to reach with their journal all of these manufacturers, but to widen the circulation to 6,000 by including the principal mills of Indiana, Illinois, Iowa and Michigan. Said they of their journalistic aims:

"The establishment of some efficient channel of communication, through which millers may be enabled, from time to time, to exchange opinion, and seek information upon matters relating to their business, has long been esteemed a desideratum. In the milling, as in every other pursuit, there are, of course, many beginners, and many experienced operators. To both classes we freely offer the use of our columns. . . . It will be our aim to make the *Journal* a welcome visitor in every part of the country, and in time, so far as millers are concerned, an indispensable requisite."

We do not know the date of the *Journal's* demise, but since it certainly no longer exists we must conclude, with sorrow, that it did not insinuate itself into the affections of the milling industry in such a way as to be considered a permanent necessity.

*The 1939 edition of The Northwestern Miller's List of Flour Mills in the United States and Canada lists only 229 mills in Ohio.

≈ ≈ ≈

"The entire omission of staple articles of food tends to unbalance and limit the diet unnecessarily. Sufficient vitamins can be assured by fruits, vegetables and salads." This doesn't sound like the mine run of popular articles on nutrition, does it? You are right—it doesn't and isn't. It is quoted from an admirable article in the current Nation's Business, *called "The Business Man's Health Plight." The author is Dr. William R. P. Emerson, professor of pediatrics in Tufts Medical College and consultant at Dartmouth. If you bolt your lunch at a hashery, or snatch it at your desk, or omit your breakfast to catch the bus, or eat like a horse (or rather like a horse never would eat) at night, this article will tell you about when the old pump will yell for the undertaker.*

≈ ≈ ≈

PUSHING THE CAN ABOUT.—Here is a trifle of inside dope, sort of a la Winchell, that may amuse you almost as much as it did us—meaning no offense to anyone. While ago Mary E. Jens of the educational department of the Wheat Flour Institute asked our permission to reprint in an institute booklet for school use the old song about the Miller of Dee, words and music of which were published some years ago in The Northwestern Miller. Granted. Then she comes along with a request for permission to revise the words! Shades of the dead and unknown lyricist, could we permit such a thing? Having wrestled mentally and morally with the problem we washed our hands of it and told Mary to go ahead, but with the blood on her own fingers.

Now what do you suppose the good lady was worrying about? With all the evidence before us, the school booklet having come from the press, we can now assess the matter with full knowledge of the facts. There were only two lines of the historical lyric that troubled her. They appeared in the last stanza, where the writer had warmed up for the punch, thus:

"And merrily push the can about
And drink and sing with glee."

Explaining her editorial (though possibly not personal) inhibitions on this phrasing, Miss Jens argued:

"In view of present-day advertising campaigns I doubt whether any of the children would entertain the illusion that the can mentioned might, by any chance, contain tomato juice! I believe the temperance union is still carrying on its school campaign."

So here's the way the lines read in the revised version:

"And do our work with all good will,
And sing this song with glee."

Ralph Ward

. . . next in line . . .

Ralph Ward, of the Stone Baking Co., was elected vice president of the Atlanta Bakers Club at the annual Thanksgiving dinner dance of the organization.

At the annual meeting of the Wisconsin-Minnesota sales division of the King Midas Flour Mills, held two weeks ago in Minneapolis, M. L. McCormack, of Eau Claire, was presented with the company's sales trophy. This trophy is awarded annually to the salesman making the best showing for the year, and becomes the permanent possession of the first salesman who wins it three times. The illustration, left to right, shows W. M. Steinke, vice president and general sales manager, Paul Sather, Wisconsin sales manager, handing the trophy to Mr. McCormack, R. A. Martin, of Oshkosh, winner of the cup in 1936, A. E. Gronlund, of Iron Mountain, Mich., winner in 1938, and C. A. Cook, of Milwaukee, winner in 1937.

George Grant

. . . gavel rapper . . .

The Atlanta Bakers Club named as president George Grant, purchasing agent for the American Bakeries Co. The election was held at a Thanksgiving dinner dance Nov. 6.

Personal & Otherwise

IN CHICAGO MARKET

George R. Flach, president, Broenniman Co., New York City, stopped off in Chicago last week, on his way to Watertown, Wis., to visit with the Globe Milling Co., of that city. Among other out-of-town visitors in the Chicago market were: Howard G. Crissman, vice president, Utica (Mich.) Milling Co; A. B. Anderson, sales manager, Kansas Milling Co., Wichita; Harold McGhee, Marion (Ohio) Milling Co; Charles R. Hoyt, Tennant & Hoyt Co., Lake City, Minn; A. B. Marcy, Commercial Milling Co., Detroit; Herman Fakler, vice president, Millers National Federation, Washington, D. C; Richard Swartz, New Ulm (Minn.) Roller Mill Co.

SUGAR BOWL EXPERT

Harold P. Bell, southern sales manager for Larabee Flour Mills Co., brought tall football tales with him when he returned from a southern trip last week. Tulane's 33 to 20 victory over Louisiana State University was studied by Mr. Bell from the standpoint of expertly doping the Sugar Bowl classic.

AT FLORIDA HOME

Howard S. Pearlstone, New York flour broker, accompanied by Mrs. Pearlstone, left on Dec. 6 for his home in Coral Gables, Florida, where he will spend the winter and part of the spring.

PARTY PLANNED

The Toledo Board of Trade will give a party to members and friends on the exchange floor following the close of the session Dec. 30.

MANHATTAN CALLERS

Totton P. Heffelfinger, vice president, Van Dusen Harrington Co., and William M. Steinke, vice president, King Midas Flour Mills, Minneapolis, visited the mill's New York offices last week where J. A. Repetti and David J. Wilson are in charge of wheat and rye, and semolina sales.

Fred Wolf, Jr. sales manager, Wolf Milling Co., Ellinwood, Kansas, was a New York visitor last week at the office of Howard S. Pearlstone and John Reilly, and was introduced on the exchange floor by David Coleman.

C. E. Poynter, of the Eagle Roller Mill Co., New Ulm, Minn., was a visitor last week with J. N. Claybrook in charge of the mill's New York office.

VICTORY

The bowling team from the New York offices of the Pillsbury Flour Mills Co., Minneapolis, won a decisive victory over the team from the New York offices of General Mills, Inc., when they beat them three out of three games in a tournament on Dec. 6.

AT MILLERS' MEETING

Herman Steen, secretary, Millers National Federation, was in Kansas City, on Dec. 7, attending a meeting of millers.

PARTY DATE CHANGED

The committee in charge of the Christmas party at the Corn Exchange of Buffalo, headed by Harold Baker, Quaker Oats Co., has changed the date from Dec. 21 to Dec. 27, in order to meet the wishes of the greatest number of the members. The party will begin at 5 p. m. on the trading floor with a cocktail hour, followed by dinner, dancing and entertainment.

LIGHT WORK

Clyde Durham, sales manager for the Stafford County Flour Mills, Hudson, Kansas, is also the weatherman for his county. He has the only official thermometer and rain gauge and makes daily reports to Topeka. He has not been overworked reading his rain gauge, he admits.

BALTIMORE BOWLERS

A dinner meeting of the Baltimore Flour Club was held at the Alcazar on Dec. 6, and was largely attended. There was no special speaker and after the transaction of routine business following the dinner the members engaged in bowling matches.

SOUTHERN GOVERNOR

Moran Berbett, Acme Bakery Co., Jackson, Miss., has been elected to the board of governors of the Southern Bakers Association. Mr. Berbett was elected to fill a vacancy which occurred shortly after the last convention.

MONTH'S VACATION

E. J. Thomas, vice president and sales manager for the Amber Milling Co., Minneapolis, has left, with Mrs. Thomas, for a month's vacation. They are motoring, and will stop at Tucson, where their daughter is attending Arizona State University, and from there will go on and spend Christmas in southern California.

IN MINNEAPOLIS

E. J. Daugherty, president of the Newsome Feed & Grain Co., Louisville, Ohio, is visiting the office of the Reliance Feed Co., in Minneapolis, this week. This is one of Mr. Dougherty's affiliated companies.

SPEAKER

Philip W. Pillsbury, of the Pillsbury Flour Mills Co., Minneapolis, spoke on the importance of research to industry at a meeting of the Industrial Research Institute, in Chicago, Dec. 9.

IN NASHVILLE

E. E. Laurent of the Dunlop Milling Co., Clarksville, Tenn., and Quinton Edmonds, manager of the Model Mill Co., Jackson, Tenn., were in Nashville. Another visitor was Frank Hutchinson, Lawrenceburg (Ind.) Roller Mills Co., who left later for Atlanta and other southern points.

RESIGNS

Claude F. Davis has resigned as chemist for the Western Star Mill Co., Salina, Kansas. He has made no definite plans for the future.

PRIZE HOGS

Philip H. Postel, president of the Ph. H. Postel Milling Co., Mascoutah, Ill., captured another first prize with his exhibit of Berkshire hogs at the International Stock Show, held in Chicago last week. Mr. Postel's prize winners are raised on his Rockbridge, Ill., stock farm.

ASSOCIATION PRESIDENT

R. J. Schutte, manager of the Pittsburgh branch of the Pillsbury Flour Mills Co., was elected president of the Pittsburgh Association of Manufacturers' Representatives at the annual meeting on Dec. 8. He will serve through 1940.

IN HOSPITAL

A. P. Cole, vice president of the Jesse C. Stewart Co., Pittsburgh, and widely known to the bakery and allied trades, is a patient in the West Penn Hospital there. Threatened with an attack of pneumonia, he entered there on Dec. 7 and last reports were to the effect that he was responding satisfactorily to treatment.

PUNCH BOWL

Directors of the Chamber of Commerce of the United States honored their ex-president, George H. Davis, head of Davis-Noland-Merrill Grain Co., Kansas City, Dec. 9, by presenting him a large silver punch bowl in Washington, D. C. The fact that Dr. Davis is a teetotaler did not dull his appreciation.

Controversial Topics Lend Color to District 7's Winter Meeting

By Edgar S. Miller

Controversial subjects were discussed at length but with the spirit of controversy shackled by common sense and courtesy at the winter meeting of District No. 7, AOM, held at the Huckins Hotel, Oklahoma City, on Saturday, Dec. 9, and as a result facts of considerable interest and real importance were uncovered. Apparently, the validity of these facts was established to the satisfaction of those taking part in the discussions—and they were many—but cocksureness and intolerance were conspicuous by their absence.

Following a time-honored custom, the meeting was scheduled for the afternoon, to be followed by dinner and entertainment in the evening. The morning was occupied with informal conversations and visits by millers and representatives of allied industries, many of whom had arrived the previous evening. The mills came in for inspection, of course, as did also the new plant of the Ross Corrugating Co., in which two of the modern hydraulic grinding and corrugating machines developed by Mr. Ross are installed. A great deal of interest was displayed in these machines, a description of which will appear in a forthcoming issue of this journal, and in the large number of "hobs" representing various types and styles of corrugations.

With such men as A. S. Yeagley and Walter J. Harding as predecessors, a chairman of the Oklahoma-Texas district has a real responsibility on his shoulders, but Dan Bartlett, superintendent for the Shawnee (Okla.) Milling Co., and the present incumbent, not only discharged it in a manner creditable to himself, his company and his state, but set a mark for other association districts to shoot at. He had, of course, the fine cooperation of superintendents and managers throughout both Texas and Oklahoma, else there could not have been such a gratifying attendance of second millers. Mill chemists were out in force, too, and, of still more importance, they contributed greatly to the meeting by wholeheartedly entering into the discussions.

These discussions rather closely followed questions that had been submitted by millers. Among the first was, "How is milling to be improved?" Newton C. Evans, managing editor of *American Miller*, Chicago, spoke at some length on the subject and to the effect that the industry is stagnant as a consequence of the skepticism of the mill owner. It was pointed out from the floor, however, that this skepticism is not entirely without cause, in view of the many follies that have been foisted upon the industry in the past three quarters of a century, not infrequently by operative millers themselves. Mr. Evans thought that the salvation of the industry lies in "specialties" rather than in the stable product, flour.

Concerned, directly or indirectly, with the economical milling of acceptable flour were the questions that followed, and the discussion of them. One had to do with the milling value of low as compared to high test-weight wheat, and it developed that the matter is not as simple as it is sometimes considered. It was asserted, without dispute, that it is possible to *increase* the test-weight of large-kerneled wheat by mixing in materials having a particle size smaller than the interstices between the berries, even though none of the particles has the slightest value in the production of flour. Again a strong protest was voiced, this time by a mill chemist, against the grain standards ruling which allows the presence of 7% of small non-flour-bearing particles in Nos. 1 and 2 wheat. It was pointed out also that 60 lbs of high test-weight wheat may be incapable of yielding as much flour as an equal weight of grain testing two or three pounds less if the berries of the latter have been subjected to wetting and drying, since it has been proved that kernels do not return to their original size after absorbing water.

What was termed by many a "trick question" asked: "Does the ash of bran made on a mill represent the mineral content of pure bran?" About an equal number of millers and mill chemists were ready with the same answer, no. A chemist stated that he had never seen any "pure bran," but submitted that since commercial bran always contains some endosperm, the ash of which is many times lower than wheat skins or germs, its percentage of minerals could not be representative, and there was general agreement.

A suggestion of interest and perhaps of some practical value was born of the hypothetical question as to what would happen if the miller should succeed in getting a larger percentage of endosperm into the flour sack, thus increasing the crude fiber content of the offal to above the percentage allowable under state or federal regulations. The suggestion was that the addition of ground screenings, including broken wheat unfit for flour, would increase the carbohydrate content of the feed and consequently lower its crude fiber percentage.

The "perennial question" of "tempering" appears to be broadening month by month to include "warm conditioning" as accomplished by apparatus now in use in nearly a score of representative flour mills, some of them quite large, in the United States. That millers generally are apprehensive about the effect of heat—and especially of "steam"—in conditioning is well known, yet at least two milling superintendents who have been using the new process for from several months to something more than a year offered assurance that no unfavorable milling or baking results have ever developed.

A great deal of discussion of diastatic behavior under the influence of momentary and largely superficial temperature of about 115° F. was indulged in, and it was extended to include a specific question as to whether heat shortens the time required for water penetration.

Upon invitation by Chairman Bartlett, Edgar S. Miller, technical editor of MILLING PRODUCTION and its associated publications, Minneapolis, spoke at some length on the subject, offering an opinion to the effect that a temperature increase resulted in expansion of the bran-coats and an opening of the conduits through which water, in liquid form, moves toward the interior of the berry. Asked for his opinion with respect to the possible disadvantages of long tempering periods he called attention to the probable differences in the physical effects of moisture penetration and moisture permeation, submitting that it seemed quite possible that when a wheat berry is completely permeated by a given quantity of water the gluten-bearing proteins may be made softer and the starch granules more adhesive than is the case when exactly the same quantity of water is held largely in the interior cellulose walls by a limitation of time.

In response to the question as to whether the use of warm water is beneficial in tempering wheat, Walter Harding, superintendent for the Yukon (Okla.) Mill & Grain Co., answered in the affirmative, from his own experince. His premise was that in passing through a 15-ft mixing conveyor the more vitreous berries retained a film of water on their surfaces when cold water was used, and it had been his observation that with warm water, say at 130° to 140° F., the adsorbed water was absorbed. While it was contended by others that virtual equalization of moisture within different berries was certain to occur in bins within a short time (a statement upon which there was not full agreement), Mr. Harding's contention that free water upon the surfaces of hard berries might be "stolen" by berries less dense was generally vindicated, it being conceded that the expansive power of heat should be more significant in connection with berries which because of their extreme hardness would absorb practically no cold water in the short time they were in the mixing conveyor.

At the conclusion of the technical discussion, C. W. Partridge, secretary of the association, spoke briefly about the advantages of association membership. He expressed the conviction that milling executives were coming more and more to an appreciation of the work the association is doing, and cited as evidence the splendid attendance at the meeting.

While the exact number attending the afternoon session was not ascertained it could not have been far from 100, and certainly nearly twice that many plates were laid for the dinner served at 7:15, for the ladies were there in unusual force, even for District No. 7. Otto Zimmerman, of General Mills, Inc., was in charge of the dinner and entertainment, and in an appropriate little talk he gave full credit for the latter to Carl L. ("Cap") Steele, of the concern's Oklahoma City plant. Music during the meal and afterward was furnished by Cap. Steele's "boys" or members of their families.

Many visitors from Kansas District No. 1 were present, and many millers and their families within District No. 7 came from faraway Texas points. The next meeting will be held in Fort Worth on April 13, 1940.

ENROLLMENT FOR CAKE COURSE GROWS

Cake bakers throughout the country are providing a rapidly-mounting enrollment for the special cake course to be given at the American Institute of Baking in Chicago, Jan. 7-20. Applications for the 1940 course should be mailed promptly to Tom Smith, secretary, American Institute of Baking, 1135 Fullerton Avenue, Chicago, because the class is limited in size. The tuition fee is $75 (deposit of $25 with application, and balance on registration day). Details regarding the course can be obtained by writing Mr. Smith.

WHEAT FUTURES VOLUME

The volume of trading in wheat futures on the four principal exchanges totaled 101,956,000 bus in November, compared with 488,283,000 bus in the previous month and 328,621,000 bus in the corresponding month a year ago. The Chicago Board of Trade accounted for 331,731,000 bus of the total. The October figure was 406,718,000 bus and the November, 1938, total 259,618,000 bus. Daily open contracts on the four exchanges averaged 115,096,000 bus in November as against 108,339,000 in the preceding month and 147,833,000 bus in the similar period a year ago. On the Chicago Board of Trade the daily open contracts averaged 86,022,000 bus, compared with 81,300,000 in October and 115,505,000 bus in November, 1938.

LETTERS

WEEVILLY GRAIN

TOLEDO, OHIO

EDITOR THE NORTHWESTERN MILLER:

I see on page 52 of your Dec. 6 issue an article captioned "Wheat and Corn Under Loan Damaged by Weevil." From the writer's experience this article is most regrettably too true, and what is more regrettable is that with proper care, which is possible, much of this trouble could have been averted and the resultant loss saved.

It has been the writer's belief, based on considerable contact with flour mills and elevators, that it is high time that an educational program pointing toward better handling and storage of grain in the primary markets was called to the attention of the farmer and the grain trade.

Much infestation in the farmer's granary, where much of our grain is carried over, is due to carrying over infestation from a previous season. Farmers' grain bins can be and should be weevil proofed by being treated chemically prior to being filled with the new year's crop. One treatment will protect the bin for several years. This should be done with all bins for all types of grain.

Grain which a farmer intends storing in his own bins over a winter season should first be fumigated. To facilitate such fumigation, country elevators should have installed small size fumigating chambers where they could profitably do custom fumigating as they now do custom grinding. Such a program at say .01½c to .02c bu charge and using Chloropicrin as the fumigation gas can give to the country elevator man a reasonable profit for his labor and will protect the grain against weevil damage if same is put into a bin which has previously been weevil proofed. At this cost the farmer will save money because he stands to lose more per bushel due to a lowering of his grade due to weevil damage.

A few mills and elevators that have small fumigating chambers are doing a little such fumigating at present and the results have proven satisfactory.

Fumigation in the farmer's grain storage is generally impractical because such grain storage is so often in the same building in which the farmer houses his cattle, horses and poultry. All such stock, for safety sake, would have to be removed during the period of fumigation or serious damage, if not death, might be the result.

Regarding corn, every one knows that corn in storage develops much heat due to moisture. The average corn crib on a farm built of lattice construction is proper enough storage for corn, but the construction for properly preserving the corn has not been completed. By that I mean that corn in cribs is subjected to easy attack by insects and by rats and mice. Such cribs should first be lined with a small mesh copper wire, 16- or 18-mesh being the proper size. Such copper wire, of course, is not strong enough to withstand the rough use it would be subject to in the handling of corn in and out of storage, so this copper wire must then be additionally protected with another covering of ⅛" mesh hardware cloth. This construction and protection will then last as long as the crib and will provide for the farmer a corn crob which will first of all give proper aeration to his corn to prevent heating and secondly will protect it against the attacks of insects such as corn meal moth, Angoumois moth, etc., so that the moth cannot lay her eggs in this corn and will at the same time rat- and mice-proof the crib so that the corn will be protected, too, from rodent damage.

Very truly yours,

HERMAN C. MILITZER.

A SUMMARY OF FLOUR QUOTATIONS IN LEADING MARKETS

Week-end flour quotations, per bbl of 196 lbs, packed in 98-lb cottons or 140-lb jutes. All quotations on basis of carload lots, prompt delivery.

	Chicago	‡Minneapolis	Kansas City	St. Louis	Buffalo	New York	Baltimore	Philadelphia	Boston	Louisville	†Nashville
Spring first patent	$5.20@5.35	$6.40@[illegible]	$....@....	$5.90@6.15	$[illegible]	$[illegible]	$[illegible]	$[illegible]@6.10	$[illegible]	$....@....	$[illegible]
Spring standard patent	5.00@5.25	[illegible]@5.95	....@....	5.70@[illegible]	[illegible]@5.55	[illegible]	[illegible]	5.70@[illegible]	[illegible]	....@....	5.80@6.05
Spring first clear	4.50@4.75	[illegible]@4.75	....@....	[illegible]	[illegible]@6.00	[illegible]	....@....	5.20@[illegible]	[illegible]	....@....	....@....
Hard winter short patent	4.95@5.10	....@....	[illegible]	[illegible]@6.80	....@....	....@....	[illegible]	[illegible]	[illegible]	....@[illegible]	[illegible]
Hard winter 95% patent	4.60@4.80	....@....	4.75@4.95	[illegible]@5.45	....@....	5.30@5.60	[illegible]	[illegible]	[illegible]	....@....	5.10@5.40
Hard winter first clear	4.10@4.10	....@....	3.35@3.60	[illegible]	....@....	....@....	....@....	....@....	....@....	....@....	....@....
Soft winter short patent	4.75@5.30	....@....	....@....	[illegible]	[illegible]	....@....	[illegible]	....@....	5.60@5.80	[illegible]	5.55@5.80
Soft winter straight	4.35@4.60	....@....	....@....	5.10@[illegible]	....@....	[illegible]@5.10	*[illegible]	*4.60@5.40	5.30@5.55	[illegible]	5.20@5.40
Soft winter first clear	3.45@3.60	....@....	....@....	4.15@[illegible]	....@....	....@....	....@....	....@....	5.10@5.30	....@4.45	4.75@4.80
Rye flour, white	3.90@4.10	[illegible]	....@....	....@4.60	....@4.95	[illegible]	....@[illegible]	[illegible]	....@....	....@....	....@....
Rye flour, dark	3.15@3.40	[illegible]	....@....	....@3.80	....@4.15	....@....	....@4.15	....@....	....@....	....@....	....@....

	††Seattle (98's)	S. Francisco
Family patent	$6.35@6.50	$7.40@7.60
Soft winter straight	5.10@5.25	....@....
Pastry	5.10@5.25	4.50@4.70

Standard patent—	Seattle	San Francisco
Dakota	$6.00@6.15	$5.50@5.70
Montana	5.60@5.75	5.20@5.40

	Toronto	**Winnipeg
Spring top patent¶	$....@5.80	$....@[illegible]
Spring second pat¶	....@5.05	....@[illegible]
Spring first clear¶	....@3.95	....@....

	Toronto	**Winnipeg
Spring exports§	27s 6d	....
Ont. 90% patents‡	$3.50	....

*Includes near-by straights. †Nashville prices basis f.o.b. Ohio River points for soft winter wheat flour. **In jutes, Fort William basis. §98-lb jutes. ‡Second-hand jutes. ¶140-lb jutes. ‖Tuesday prices. ††F.o.b. Atlantic ports.

CENSUS REPORT ON FLOUR AND FEED OUTPUT

The Department of Commerce announces statistics on wheat ground and wheat milling products by months. The figures for September are revised to include reports received since the preliminary bulletin for that month was issued. These returns include only mills which are now manufacturing at the rate of 5,000 or more barrels of flour annually.

For October, 1939, 916 companies reported 1,054 mills, of which 91, with daily capacity of 41,238 bbls, were idle. Of the 1,051 mills which reported detailed production data at the biennial census of manufactures, 1937, 1,000 accounted for 98,749,944 bbls of the total wheat flour, 105,273,951 bbls (revised final figure), reported for that year.

The wheat ground averaged 273.8 lbs per bbl of flour in October, 274 in September, 275.6 in August, 276.3 in July, 276.7 in June, 275.2 in May, 274.4 in April, 275.3 in March, 1939, 271.2 in February, 271.3 in January, 273.6 in December and 273.8 in November, 1938.

The offal reported amounted to 79.9 lbs per bbl of flour in October, 79.6 in September, 81.2 in August, 81.8 in July, 82.9 in June, 81.4 in May, 80.7 in April, 81.6 in March, 1939, 80.7 in February, 80.4 in January, 79.8 in December and 79.8 in November, 1938.

1939—	Mills reporting	Wheat ground, bus	Production— Wheat flour, bbls	Wheat offal, lbs	Daily wheat flour capacity, bbls	Per ct. of capacity operated
October	1,051	43,021,778	9,427,603	[illegible]	589,775	61.5
September	1,053	51,101,067	11,191,001	[illegible]	589,475	75.9
August	1,051	43,745,637	9,622,407	[illegible]	584,470	60.3
July	1,054	38,832,794	8,431,941	[illegible]	587,560	57.4
June	1,073	38,927,406	8,440,170	[illegible]	589,712	55.0
May	1,082	39,065,786	8,515,714	[illegible]	591,723	55.4
April	1,082	37,697,957	8,243,560	[illegible]	591,513	55.7
March	1,088	41,067,983	8,950,715	[illegible]	591,938	56.0
February	1,090	35,447,131	7,757,173	[illegible]	591,933	57.0
January	1,095	38,754,767	8,476,400	681,623,594	592,558	57.2
1938—						
December	1,109	[illegible]	8,416,164	672,015,284	[illegible]	[illegible]
November	1,102	[illegible]	8,837,547	704,994,554	[illegible]	59.2

COMPARATIVE STATEMENT FOR IDENTICAL MILLS*

1939—	Mills reporting	Wheat ground, bus	Production— Wheat flour, bbls	Wheat offal, lbs	Daily wheat flour capacity, bbls	Lbs of wheat per bbl of flour	Lbs of offal per bbl of flour	Per ct. of capacity operated
January	863	37,591,248	8,226,485	660,130,042	566,992	274.2	80.2	58.0
February	859	[illegible]	7,534,400	606,006,173	565,667	274.0	80.5	57.9
March	[illegible]	[illegible]	[illegible]	[illegible]	565,547	276.1	81.4	57.0
April	[illegible]	[illegible]	[illegible]	[illegible]	566,067	274.3	80.6	56.8
May	852	[illegible]	[illegible]	[illegible]	565,227	275.2	81.3	56.2
June	844	[illegible]	[illegible]	[illegible]	563,266	276.6	82.8	55.9
July	[illegible]	37,588,731	[illegible]	[illegible]	561,024	[illegible]	81.6	58.2
August	[illegible]	42,349,172	9,225,[illegible]	746,413,904	557,921	[illegible]	80.9	61.2
September	826	49,394,073	10,824,939	859,203,016	561,716	[illegible]	79.4	77.1
October	826	41,550,751	9,111,430	726,156,703	562,016	[illegible]	79.7	62.4

*These mills produced 97,268,508 bbls of the total wheat-flour production (105,273,951 bbls), as shown by the preliminary report of the Biennial Census of Manufactures, 1937, and accounted for 96.6% of the wheat flour reported for October, 1939. During October, 1939, 74 mills with capacity of 39,088 bbls were idle.

UNITED STATES VISIBLE GRAIN SUPPLY

Visible supply of grain in the United States, as compiled by the secretary of the Chicago Board of Trade, in bushels (000's omitted), of date Dec. 9, and corresponding date of a year ago:

	Wheat 1939	Wheat 1938	Corn 1939	Corn 1938	Oats 1939	Oats 1938	Rye 1939	Rye 1938	Barley 1939	Barley 1938
Baltimore	816	689	889	[illegible]	21	32	28	63	2	2
Boston	..	..	411	2	..	1	..	..	..	..
Buffalo	4,810	10,613	2,316	4,261	1,902	[illegible]	1,487	881	1,568	933
Afloat	6,310	10,483	2,107	793	580	[illegible]	649	[illegible]	1,141	496
Chicago	7,746	9,412	10,855	13,424	1,556	[illegible]	1,072	[illegible]	581	515
Afloat	..	1,977	..	2,010	..	[illegible]	199	283	..	..
Detroit	125	150	3	2	[illegible]	5	3	[illegible]	230	155
Afloat	170	..	..	..	..	..	..	..	..	..
Duluth	11,450	9,244	2,169	1,933	750	4,059	1,432	1,527	1,272	1,124
Afloat	..	74	..	..	..	..	..	..	..	..
Fort Worth	9,065	6,902	[illegible]	260	266	131	[illegible]	36	23	[illegible]
Galveston	3,377	5,271	10	[illegible]	..	..	..	..	..	4
Hutchinson	7,361	5,152	..	..	..	..	..	..	..	..
Indianapolis	1,868	776	[illegible]	[illegible]	260	113	..	..	..	..
Kansas City	26,528	28,950	[illegible]	[illegible]	147	888	436	353	18	121
Milwaukee	589	1,212	1,257	[illegible]	[illegible]	356	[illegible]	[illegible]	1,914	[illegible]
Minneapolis	15,162	11,995	4,501	[illegible]	4,098	5,188	3,621	3,567	7,890	[illegible]
New Orleans	[illegible]	1,031	1,201	1,056	[illegible]	101	[illegible]	[illegible]	..	..
New York	1,016	[illegible]	462	[illegible]	50	19	[illegible]	4	1	..
Omaha	8,571	5,230	3,772	[illegible]	294	356	[illegible]	99	65	318
Peoria	..	29	351	[illegible]	58	..	..	..	51	69
Philadelphia	[illegible]	541	1,187	206	10	[illegible]	10	1	[illegible]	[illegible]
St. Louis	[illegible]	3,947	1,092	[illegible]	214	[illegible]	5	171	161	15
Sioux City	[illegible]	714	[illegible]	[illegible]	312	[illegible]	48	63	18	[illegible]
St. Joseph	[illegible]	2,355	[illegible]	663	152	118	13	..	19	[illegible]
Wichita	3,444	2,419	[illegible]	..	..	..	..	1	..	..
Lakes	108	648	..	..	..	..	..	..	..	..
Totals	124,425	120,249	38,055	46,037	11,164	16,408	9,862	4,097	15,299	11,163

SUMMARY OF MILLFEED QUOTATIONS

Week-end millfeed quotations, summarized from the market reviews, are based on carload lots, prompt delivery, per ton, packed in 100-lb sacks, f.o.b. at indicated points:

	Chicago	‡Minneapolis	Kansas City	St. Louis	Buffalo
Spring bran	$....@23.00	$19.50@20.00	$....@....	$....@....	$....@24.00
Hard winter bran	....@22.00	....@....	18.50@18.75	21.00@21.25	....@....
Standard middlings*	22.50@23.00	19.50@20.00	....@....	....@[illegible]	....@[illegible]
Flour middlings†	24.50@25.00	22.00@22.50	22.25@22.50	....@23.75	....@[illegible]
Red dog	27.00@27.50	23.50@....	....@....	....@27.00	....@28.00

	Baltimore	Philadelphia	Boston	Louisville	Nashville
Spring bran	$....@21.25	$27.50@28.00	$27.50@28.00	$....@....	$....@....
Hard winter bran	....@....	28.00@28.50	....@....	....@....	....@....
Soft winter bran	....@24.50	....@....	27.50@28.00	....@26.00	24.50@25.00
Standard middlings*	....@24.25	27.50@28.00	26.50@27.00	....@....	....@....
Flour middlings†	....@27.25	30.50@31.50	27.50@28.00	....@28.00	28.50@29.50
Red dog	....@27.50	31.00@32.00	....@33.00	....@....	....@....

	Spring bran	Shorts	Middlings
Toronto	$....@25.00	$....@26.00	$....@28.00
¶Winnipeg	....@23.00	....@24.00	....@....

*Brown shorts. †Gray shorts. ¶Fort William basis. ‡Tuesday prices.

GRAIN FUTURES—CLOSING PRICES

Closing prices of grain futures at leading option markets, in cents per bushel:

WHEAT

	Minneapolis Dec.	Minneapolis May	Chicago Dec.	Chicago May	Kansas City Dec.	Kansas City May	St. Louis Dec.	St. Louis May	Duluth Dec.	Duluth May
Dec. 6	93½	92¾	[illegible]	[illegible]	90¼	88⅝	....	....	87	86¼
Dec. 7	94⅞	94	[illegible]	[illegible]	90⅜	89¼	....	....	89	88¼
Dec. 8	[illegible]	92⅝	[illegible]	93⅜	89⅜	88¼	....	....	87⅝	87
Dec. 9	[illegible]	93⅞	[illegible]	95	[illegible]	90⅞	....	....	[illegible]	88
Dec. 11	94⅛	92⅞	[illegible]	[illegible]	91	89½	....	....	[illegible]	86½
Dec. 12	94½	93⅞	[illegible]	[illegible]	91⅝	90½	....	....	[illegible]	87¼

	Portland Dec.	Portland May	Seattle Dec.	Seattle May	Winnipeg Dec.	Winnipeg May	Liverpool (Closed)		Buenos Aires Feb.	Buenos Aires Mch.
Dec. 6	82½	83½	83	[illegible]	79⅜	83⅝	....	....	[illegible]	[illegible]
Dec. 7	82½	84	83½	[illegible]	81⅝	85⅝	....	....	[illegible]	63⅝
Dec. 8	81⅜	82	81¾	[illegible]	[illegible]	84¼	....	....	Holiday	
Dec. 9	....	....	[illegible]	[illegible]	81⅜	85¼	....	....	[illegible]	[illegible]
Dec. 11	....	....	....	....	79⅝	83⅞	....	....	[illegible]	[illegible]
Dec. 12	....	....	....	....	80⅝	85	....	....	....	....

	CORN Minneapolis Dec.	CORN Minneapolis May	CORN Chicago Dec.	CORN Chicago May	CORN Kansas City Dec.	CORN Kansas City May	OATS Chicago Dec.	OATS Chicago May	OATS Minneapolis Dec.	OATS Minneapolis May
Dec. 6	48⅝	49⅝	[illegible]	[illegible]	52½	53½	40	38	36¼	34⅞
Dec. 7	48⅝	49⅝	54⅜	55⅞	52½	53¼	[illegible]	[illegible]	36	34⅝
Dec. 8	[illegible]	49¼	51	55⅜	51¼	52⅝	[illegible]	[illegible]	35⅝	34⅝
Dec. 9	[illegible]	49⅜	54⅜	55⅞	52⅝	53½	[illegible]	[illegible]	35⅞	34⅜
Dec. 11	48	49¼	53⅜	55⅝	52¼	53⅜	[illegible]	[illegible]	35¼	34¼
Dec. 12	48⅛	49⅜	53⅜	55⅜	52½	52⅜	[illegible]	[illegible]	35⅜	34⅞

	RYE Chicago Dec.	RYE Chicago May	RYE Minneapolis Dec.	RYE Minneapolis May	FLAXSEED Minneapolis Dec.	FLAXSEED Minneapolis May	FLAXSEED Duluth Dec.	FLAXSEED Duluth May	BARLEY Minneapolis Dec.	BARLEY Minneapolis May
Dec. 6	60⅝	[illegible]	54⅞	55½	186½	189	186½	....	39⅝	41½
Dec. 7	61	[illegible]	55⅞	56⅝	[illegible]	191	190	192	40½	41½
Dec. 8	61	61½	55	55⅝	[illegible]	188	189	189½	40	[illegible]
Dec. 9	63	62⅝	56⅝	57½	[illegible]	191	190½	191	40⅜	[illegible]
Dec. 11	62⅜	[illegible]	55	56⅞	186	188	185½	191½	39⅝	[illegible]
Dec. 12	63½	62⅞	56	57½	190	191	189	191	[illegible]	[illegible]

WEEKLY GRAIN AND FLOUR EXPORTS

Exports of grain from the principal ports of the United States to foreign countries, as reported by the Department of Commerce, in bushels in the case of grain and barrels in the case of flour (000's omitted throughout):

	Week ending Dec. 2, '39	Week ending Dec. 3, '38	Week ending Nov. 25, '39	July 1 to ‡Dec. 2, '39	July 1 to ‡Dec. 3, '38
United States grain—Barley	..	22	[illegible]	2,[illegible]	2,801
Corn	93	[illegible]	[illegible]	5,[illegible]	[illegible]
Oats	[illegible]	32	..	12	[illegible]
Rye	..	..	..	..	[illegible]
Wheat	*[illegible]	338	903	[illegible]	27,[illegible]
Totals	§373	1,0[illegible]	958	20,[illegible]	[illegible]
Canadian grains in transit—Barley	..	..	55	2,057	..
Rye	52	..	[illegible]	219	15
Wheat	278	267	[illegible]	7,501	1,[illegible]
Totals	330	[illegible]	344	9,819	[illegible]
Wheat flour, United States and Canadian, in transit—					
United States wheat flour	*†110	[illegible]	[illegible]	2,256	1,191
Canadian flour in transit	..	[illegible]	[illegible]	110	87
Rice—To foreign countries	2,659	5,948	[illegible]	97,290	[illegible]
Porto Rico	4,757	3,327	[illegible]	102,573	55,822
Hawaii	325	1,253	[illegible]	28,653	27,993
Totals	§7,741	10,528	6,819	229,513	196,060

‡Figures in these columns represent cumulation of weekly reports received from 16 of the principal ports exporting and importing grains and are not complete exports and imports from and into the United States for these periods. †Includes flour milled in bond from Canadian wheat. §No report from San Francisco. *Including via Pacific ports this week: wheat, 266,000 bus; flour, 25,000 bbls.

Flour and Grain Receipts and Shipments

Receipts and shipments of flour and grain at the principal distributing centers for the week ending Dec. 9, as compiled by the Daily Trade Bulletin*, flour given in barrels, grain in bushels (000's omitted throughout):

RECEIPTS

	Flour	Wheat	Corn	Oats
Chicago	153	144	1,323	[illegible]
Duluth	..	213	842	[illegible]
Indianapolis	..	52	322	50
Kansas City	..	519	460	[illegible]
Milwaukee	[illegible]	[illegible]	84	[illegible]
Minneapolis	..	1,067	720	483
Omaha	..	103	[illegible]	16
Peoria	40	6	401	72
Sioux City	..	28	114	50
St. Joseph	..	93	138	19
St. Louis	125	160	231	170
Wichita	..	270	4	[illegible]
Totals	354	2,679	4,947	1,418
Seaboard—				
Baltimore	12	1,450	182	[illegible]
Boston	26	..	..	2
Galveston	..	9	[illegible]	..
New York	169	3,2[illegible]	[illegible]	4
New Orleans	[illegible]	99	[illegible]	14
Philadelphia	34	476	192	2
Totals	[illegible]	[illegible]	582	[illegible]
Grand totals	[illegible]	8,113	5,529	1,446
Last week	[illegible]	8,650	6,[illegible]	[illegible]
Last year	[illegible]	4,161	4,[illegible]	[illegible]

[illegible] bus bonded.

SHIPMENTS

	Flour	Wheat	Corn	Oats
Primary points—				
Chicago	[illegible]	113	[illegible]	[illegible]
Duluth	..	[illegible]	[illegible]	989
Indianapolis	..	14	[illegible]	50
Kansas City	[illegible]	[illegible]	[illegible]	35
Milwaukee	[illegible]	[illegible]	[illegible]	[illegible]
Minneapolis	[illegible]	[illegible]	569	464
Omaha	..	[illegible]	208	[illegible]
Peoria	37	[illegible]	117	68
Sioux City	..	..	[illegible]	10
St. Joseph	..	[illegible]	[illegible]	14
St. Louis	[illegible]	[illegible]	118	62
Wichita	..	197	..	..
Totals	[illegible]	1,442	2,899	2,929
Seaboard—				
Baltimore	..	[illegible]	..	..
New York	[illegible]	400	[illegible]	..
New Orleans	3	..	..	..
Philadelphia	..	321	138	..
Totals	9	†771	155	..
Grand totals	[illegible]	5,213	3,054	2,029
Last week	[illegible]	[illegible]	5,271	1,951
Last year	520	5,195	2,560	1,519

*Some allowances should be made for duplications. †Bonded.

MARKETS IN DETAIL

U. S. FLOUR MARKETS

THE SOUTHWEST

Kansas City: The advancing wheat market popped up business in the Southwest, and after a week of sporadic buying percentage of sales to capacity reached 72, compared with 65% the previous week and 19% a year ago.

Not booked ahead far enough to be comfortable, most bakers are in a position to take on 90 to 120 days' worth of flour, and some of them began nibbling after the market began to look serious. Millers have seized upon the dismal wheat crop in the Southwest and Argentine crop trouble as good selling talk to bring bakers in when usually they are in a nonbuying holiday mood.

With all these scattered bakery and family sales, however, there were few that amounted to more than 5,000 bbls. Two medium-sized round lots were bought by eastern chains. The same refreshed interest did not catch importers, and this business dragged along at little better pace than the previous weeks.

Clears did not respond well to the market advance, the supply factor keeping them relatively weak in price just as it did millfeed. Only about a 5c advance noticed on most grades.

Quotations, Dec. 9: established brands family flour $5.75@6, bakers short patent $5.10@5.40, 95% $4.75@4.95, straight $4.75@5, first clear $3.35@3.50, second clear $3@3.15, low grade $2.85@2.95.

Representative prices on standard ordinary bakers flour, as determined by wide inquiry among millers and others, covering both sales and quotations, adjusted to each day's closing prices on wheat and millfeeds, basis Kansas City, net to mill, follow: Dec. 5, $4.35@4.80. Dec. 6 $4.60@4.80. Dec. 7 $4.65@4.80. Dec. 8 $4.65@4.90, Dec. 9 $4.75@5.

Of the mills reporting, 10 reported domestic business fair, 7 quiet, 10 slow and 11 dull.

Omaha: Output of flour by Omaha mills this week was 30,450 bbls, compared with 27,625 bbls the previous week. Sales averaged 94% of capacity, against 110% last week. Shipping directions on old contracts came in pretty well for this time of the year. Operating time was six to seven days. Quotations, Dec. 9: established brands $5.65@5.95, short patents $5.05, hard winter wheat straights $4.65@4.90, first clears $3.35@3.65.

Denver: Market stronger; more activity in buying by both family and bakery trades, inquiries were fair, enough shipping instructions came in to keep all Denver mills operating on an 18-hour schedule, prices increased slightly. Quotations, Dec. 9 high patent $5.40, straight $4.20, spring wheat bakers $5.10, clear $5.

Oklahoma City: Gratifying improvement in sales, which averaged 75% of capacity compared with last week's 25%. Probably 60% of bookings were taken by family buyers; remainder of domestic sales to bakers. Fair-sized exports to South American countries. Slight improvement in operation, which averaged 65%. Prices advanced. Quotations, Dec. 9: hard wheat short patent $5.70@6.20, soft wheat short patent $5.70@6.30, standard patent $5.40@5.90.

Hutchinson: Interest expanded, but bookings only slightly improved. Most bookings one and two cars lots and total volume not great. Shipping directions coming in more freely than for weeks, and expanded operations loom. Quotations, Kansas City, Dec. 9: family patent $5.70, bakers patent $5, straight $4.80, first clear $3.90@4.10.

Wichita: Prices strong, sales ranging from 30 to 50%, directions from 50 to 75%. Quotations, Dec. 8: bakers short patent, hard winter, Kansas City, $3.80@5.

Salina: Demand only fair despite advancing wheat market. Shipping directions some better. Quotations, Kansas City, Dec. 8: hard winter short patent $4.95@5.05, standard patent $4.75@4.85.

Texas: Improvement in demand expanded further until checked by wheat market decline. Sales probably average 60 to 70% of capacity; some 10,000-bbl lots booked; some sales to New York territory; best business generally for about three months. No exports heard of, but some foreign inquiries. Shipping directions only fair; operations 50 to 60% of capacity. Prices 25@30c up. Quotations Dec. 8: family flour 48's, extra high patent $6@6.50, high patent $5.50@6, standard bakers 98's $5.20@5.45, first clears $4.15@4.25, all delivered Texas common points or Galveston domestic.

THE NORTHWEST

Minneapolis: The advance in wheat has not brought in nearly as much business as spring wheat millers expected. The advance was too rapid and caught buyers napping. There was comparatively good buying 10 days ago, but since then bookings have tapered off daily until now they are not much more than they were before the advance began.

Inquiry is still good, however, but apparently buyers who "missed the boat" when the upward trend began have made up their minds to wait it out, coming in only on soft spots. They have asked millers to keep them posted, intimating they would be interested in bargain prices. While there is still some talk of discouragingly low prices being accepted in certain quarters, a majority of the spring wheat millers are following the market closely, revising their quotations upward with each fresh advance. They feel that they must do this, with millfeed showing signs of weakness.

The increased buying week before last has not to any extent improved the situation so far as shipping directions are concerned. Mills generally complain of lack of directions, and those able to run four or five days a week are the exception. Many are not operating better than half time. Little improvement is looked for now until after Jan. 1, when, with inventory taking over, there should be a rush of hurry-up orders. More consistent buying is also looked for after the holidays.

Clears are in much the same position as patents. If anything, less interest is being shown in these grades than has been the case for several months. Mills, however, are still comfortably situated with orders for the time being. No export interest whatever.

Total bookings by northwestern mills for the week ending Dec. 9 fell off to less than 60%, compared with 135% a week earlier and 93% a year ago.

Quotations, Dec. 12: established brands of family patent $6.10@6.50, standard $5.60@5.95, second patent $5.30@5.50, fancy clear $5.20@5.40, first clear $4.55@4.75, second clear $3.25, whole wheat $5.15@5.30, graham standard $4.80@5.10.

Of the 15 Minneapolis mills, the following were in operation Dec. 12: Atkinson, King Midas, Minneapolis (two mills), Northwestern Consolidated A, Pillsbury South A, Durum A, Graham and Phoenix, Russell-Miller, Washburn Crosby A (one half), C, F and Whole Wheat.

Interior Mills: According to their reports, country mills did not have a particularly good week. Their customers, they say, were reluctant to follow the advance in the market and, while inquiry was fairly good, sales were not in proportion. The trade lacked confidence and even those who had to buy did so sparingly. Meanwhile, directions are none too good, and production is still very light. Feed prices are steady to a shade lower, but several companies report a falling off in inquiry.

Duluth: Uptrend in wheat market inspired further new purchases of flour. Demand of a moderate character resulted in booking car lots for both prompt and deferred delivery. Gradual absorption of excess consuming purchases made late summer and early fall may be responsible for return of buying in the replacement of fresh stock, as well as buyers who delayed filling ahead needs before this time. All rail basis now, as interlake navigation has been closed. Quotations, Dec. 9: first patent $5.65, second patent $5.55, first clear $4.95, second clear $3.25.

THE CENTRAL WEST

Chicago: Buyers still skeptical about taking on orders at present high levels. A fair amount of small lot business done by some, and in other quarters sales reported very draggy. Family sales just fair, with trade just making on enough to tide them over the regular holiday baking. Directions slow to fairly active. Quotations, Dec. 9: spring top patent $5.20@5.35, standard patent $5@5.25, first clear $4.50@4.75, second clear $3.20@3.40, family flour $6.90@7.05, hard winter short patent $4.95@5.10, 95% patent $4.60@4.80, straight $4.30@4.65, first clear $4.10@4.40; soft winter short patent $4.75@5.30, 95% patent $4.65@5, straight $4.35@4.60, first clear $3.45@3.60.

Milwaukee: Advances in wheat resulted in some increased interest, though not as heavy as in September. Bookings ranged from hand-to-mouth to 120 days. Directions on older accounts also somewhat better; prices on northwestern offerings up as much as 25c on patents and 35c on clears, while southwestern flour patents increased as much as 55c and clears 20c. Quotations, Dec. 8: northwestern top patent $5@5.70, standard patent $4.80@5.25, first clear $4.45@4.90, second clear $3.40@4.65; soft winter wheat 95% standard patent $4, fancy pastry flour $5@5.40; hard winter short patents $5.40@6, standard patent $5.20@5.50, first clear $4.25@4.40, second clear $4@4.10.

St. Louis: Sales reported only fair; bookings consist of scattered car lots for immediate requirements, also for prompt to 120 days' shipment, bakery trade taking most of the purchases; family only slightly interested; inquiries rather light; jobbers report small interest shown. Clears in fair demand. Shipping instructions fair. Quotations, Dec. 9: soft wheat short patent $5.90@6.70, straight $5.40@5.55, first clear $4.15@5.05; hard wheat short patent $5.50@6.50, 95% $5.20@5.45, first clear $4.05@4.45; spring wheat top patent $5.90@6.15, standard $5.70@5.85, first clear $5.25@5.35.

Toledo: No particular upsurge of buying among soft wheat mills generally as result of the advance in wheat prices. Buying done, however, confined largely to hard wheat mills and bakery trade. More interest, but not reflected in a large volume of buying. Soft wheat buying usually lags somewhat behind hard wheat flour activity. Toledo bid for No. 2 red wheat, 26c rate points to New York, Dec. 8, was 57¾c, equivalent to 3½c over Chicago May, highest bid of the crop was previous day at 58¾c. Quotations, Dec. 9: soft winter wheat standard patent, $5; locally made springs, high gluten $5.65, bakers patent $5.40, hard winter short patents $5.25, in 98's, f.o.b. Toledo or mill. In some instances, spring wheat flour being quoted below hard winter.

Indianapolis: A little more activity and improved demand. Sales, however, of no importance and consist of small lots for pressing needs. Some improvement in demand for soft winters, while hard winters and springs just about holding their own. Eastern and southern demand very dull. Jobbers complaining about poor business and no orders for round lots despite the fact that prices are upward. Directions on old contracts better. Market firm to 20@25c higher at the close. Quotations, Dec. 9: soft winter short patents $5.60@6, 95% $4.70@4.85, straight $4.50@4.75, second clears $3.70@3.85; hard winter short patents $6.60@5.75, 95% $5.10@5.25, standard patents $5@5.15, second clears $3.95@4.10; spring wheat short patents $5.95@6.10, standard patents $5.15@5.65, first clears $5.35@5.50, second clears $4.95@5.10.

Louisville: The rapid advance in wheat has resulted in somewhat better demand and more active booking, although advance bookings are still comparatively light. Demand for fancy and straight patents has been good, but the low grades and clears are slow. The advancing wheat market has not created as much interest in booking orders as might be anticipated. Mills running full time, but report that it is hard to move low grades. Quotations, Dec. 9: soft winter wheat flour extra fancy $8, fancy $7.35, standard $5.80, blend $5.50, clear $4.45, Kansas hard winter fancy $5.75.

EASTERN STATES

Buffalo: The sharp upturn in the wheat market is reflected by a quickening interest as well as an improvement in sales. However, the increase in sales is not as extensive as sellers hoped. Family trade adhered quite closely to the traditional policy of keeping inventories as low as possible until after the New Year. Bakery trade more responsive to the implications in the news of the drouths in the Southwest and the probable light crop in the Argentine. Wheat prices, many buyers seem to believe, from a world point of view, were out of the doldrums and that the New Year would show more strength. Many placed orders accordingly.

Directions show somewhat of an improvement but not markedly so. First clears strong and scarce. Foreign trade routine. There are expectations that the New Year probably will see a revival in orders which have slowed down materially since the rush in September on the outbreak of the war in Europe. Quotations, Dec. 9: spring family $6.80@7.30, top bakers patents $5.55@5.75, spring standard patents $5.30@5.55, spring straights $5.15@5.30, spring first clears $4.80@5, soft winter short patents $5.90@6, pastry $5.30@5.55.

New York: Sales at a lower volume as rapid wheat advances scared off buyers and the revived interest did not materialize as largely as had been hoped. There are occasional cases where large baker reported purchasing in round lots, but general business not widely diffused. Buyers interested in purchasing at the lower levels of a few days previous and could apparently not readjust their ideas to higher prices, and where mills still found themselves able to offer somewhat below the general range, sales were closed. Clears and cake flours, with a scattering of Texas grades, seemed to command the better interest, with Kansas standard levels about in line with northwesterns and resultingly quiet. Some brokers report a narrowing of the differential between high glutens and standard flours to 20c as others held to 35c premiums. Quotations, Dec. 9: spring high glutens $5.65@6.05, standard patents $5.35@5.75, clears $5@5.25; southwestern high glutens $5.50@5.65, 98's $5.30@5.60; soft winter straights $4.75@5.10.

Boston: Business spotty in spite of trade's increased interest in market trend. Having held back while prices moved higher, buyers decided bullish trend had terminated with Friday's weaker tone and now waiting for further recessions. Sellers do not expect much new business until after Jan. 1. Commitments in the aggregate probably improved, but most of it came from small bakery users and family buyers. Round lot sales unusual, the bulk of business being accounted for by minimum car lots. Spring patents have an edge over other types, with southwestern patents, soft winter pastries and rye flour making up the balance. Family sales moderate and not up to seasonal expectations. Trade stimulated early by a 15c advance, but interest later subsided. Shipping directions slightly better, but still not good. Prices again higher, ranging from 5c up to 20c. Quotations, Dec. 9: spring high glutens $6.05@6.20, short patents $5.90@6.05, standard patents $5.70@5.90, first clears $5.25@5.55, southwestern short patents $5.50@5.75, standard patents $5.40@5.55; Texas short patents $5.65@5.75, standard patents $5.45@5.55, soft winter patents $5.30@5.50, straights $5.30@5.55, clears $5.10@5.30.

Baltimore: Quotations increased 15c bbl with the exception of soft winter short patent and straight, which increased 20c. Demand improved somewhat. Receipts, 15,421 bbls, an increase of almost 2,700 bbls over the previous week. Quotations, Dec. 9: spring first patent $6.05@6.30, standard $5.80@6, hard winter short patent $5.70@5.90, 95% $5.50@5.75, soft winter short patent $5.15@5.75, straight $4.35@4.60.

Philadelphia: Fair demand, and with continued bullish speculation in wheat the market ruled firm and generally sharply higher. Early demand chiefly for medium and small lots, but increasing levels and steadily firmer views on the part of the mills caused a slackening off later in the demand, with buyers very cautious in their views. However, jobbers and bakers are keeping pretty close watch on the situation and any further extended rise in wheat would probably influence a marked increase in business. Quotations, Dec. 9: spring wheat short patent $5.80@6.10, standard patent $5.70@5.85, first spring clear $5.50@5.75, hard winter short patent $5.60@5.95, 95% $5.45@5.55, soft winter straights $4.60@4.80.

Pittsburgh: Moderate lots sold, with prices showing advance of 25c bbl for all grades. Much more sales activity reported by mill representatives who cover the tri-state territory remote from Pittsburgh proper. Apparently more industrial activity in these parts, with the result that business of all types flourishes. Sales limited to single cars and round lots of 500 to 600 bbls, with the bulk of the business going to southwestern mills. Fair amount of spring wheat flour booked, however. Indications are that after Jan. 1 there will be more liberal buying on part of the larger consumers. Cake flour sold more freely due to cake and pastry makers reporting a brisk demand for their products. Family flour sales improved. Quotations, Dec. 9: spring short patent $5.75@6.25, standard patent $5.50@5.75, hard winter short patent $5.05@5.35, standard patent $4.75@5.10, low protein $4.50@4.95, spring clears $5.25@5.60, soft winters $3.90@4.20, bulk.

THE SOUTH

New Orleans: Flour sales lightly better, with sharp upturn in wheat price. No individual heavy bookings, but general small buying brought volume up. Price average 20@25c bbl higher. Southwestern hard wheat bakers flour in best demand; northern spring wheat demand limited, bakers and jobbers best buyers. Quotations, Dec. 9: spring wheat short patent $6@6.40, 95% $5.70@5.90, 100% $5.55@5.70, cut $5.35@5.55, hard wheat short patent $5.05@5.25, 95% $4.95@5.15, 100% $4.80@4.95, cut $4.60@4.75, first clear $4.20@4.40, second clear $3.95@4.15; soft winter short patent $5.85@6.00, 95% $5.15@5.90, 100% $5.15@5.45, cut $4.65@5, first clear $4.25@4.45, second clear $4@4.30, Pacific Coast short patent $4.90@5.55, standard patent $4.75@4.90, bakers short patent $5.20@5.35, standard patent $5@5.20, 100% $4.90@5.

Atlanta: Business showing a pretty good increase, with demand from blenders and family flour dealers leading. Very good sales of soft wheat short patent, most being made to blenders for deferred shipment. Demand for clears not particularly active, although a few scattered cars being sold. Shipping directions to blenders on schedule. Family flour sales much improved, showing decided gains over last month. Fair to good sales made for immediate to 30, 60 and 90 days. Deliveries also better, being fair to almost good. Interest from bakers rather quiet, only a car or two placed here and there. Contracts generally ample for near-by needs. Movement of flour to bakers quiet to all right. Prices moved upward about 10c.

Quotations, Dec. 9: spring wheat bakers short patent, Minnesota $6.15@6.20 bbl, standard patent $5.95@6, Oklahoma bakers short patent $5.30@5.60, standard patent $5.20@5.50, straight $5.10@5.40, Kansas short patent $5.15@5.70, standard patent $5.35@5.55, straight $5.05@5.45; Texas short patent $5.20@5.75, standard patent $5.20@5.60, straight $5.10@5.50, Nebraska short patent $5.55, standard patent $5.30, family flour short patent, central states $5.65@5.80, fancy patent $5.20@5.50, standard patent $5.20@5.50, special or low grade $4.85@5; Idaho first grade $6.95, second grade $5.55; soft wheat 95% $5.70@5.75, stuffed straight $5.20@5.25, hard wheat 95% $5.75@5.80, stuffed straight $5.25@5.30, Pacific Coast family short patent $6.40@6.55, fancy patent $6@6.15, standard patent $6@6.15, special or low grade $5.00@5.85; soft wheat 95% bulk basis, $4.85@4.95, straight $4.75@4.85, bulk; short patent $5.10@5.20, bulk; soft wheat fancy cut-off $4.60, bulk; soft wheat first clear $4.40, bulk; second $3.95, bulk; hard wheat first clear $4.45, bulk, second $4.10, bulk; hard wheat, low protein 95% $4.95, bulk; durum second clear, $3.75, bulk; spring wheat first clear $5.50, 98's.

Memphis: Firmness in prices slightly stimulated buying interest in flour, but business still reflected lack of confidence. Movement fair on shipping instructions, but most attention among merchants given to holiday trade. As result of being well above buying levels, contracts being taken out promptly; higher prices for cotton helping sentiment, but bulk of top offerings not sold. Quotations, Dec. 9: spring bakers patent $5.65@6.10, hard winter short patent $5.55@5.80, standard patent $5.05@5.25, soft winter short patent $6@6.50, standard patent $4.95@5.20, blended 95% $4.95@5.05, intermountain short patent $5.50, standard patent $5.20.

Norfolk: Prices higher, but business generally reacting to the normal December dullness, accentuated by the fact that an unusually open season has reduced the demand from the farming area. Quotations, Dec. 8: top springs $6.50@8.50, second patents $6.25@8.25, Kansas top patents $5.70@6.50, second patents $5.50@6.25, top winters $5@6, second patents $4.75@5.75, West Coast flour $5@5.50, Virginia and North Carolina flour $4.50@5.50.

Nashville: Reports from mills and blenders vary, some say business is improving, that the advance in the market has brought forth some increase in the sale of flour and shipping directions; others say that the buyers are "afraid" of the market and are not doing any booking. Grocers and bakers having a good preholiday business, but as a rule they have enough flour on hand and on contract to meet their requirements and show no interest whatever in booking for future delivery. Shipping directions in most cases fairly good, with contracts being completed right along, which will bring forth some bookings after the first of the year. Prices from 20c to 30c up. Quotations, Dec. 9: soft winter wheat short patent $5.35@5.80, standard patent $5.20@5.60, fancy patent $4.95@5.25, clears $4.25@4.60; hard winter wheat short patent $5.40@5.65, standard patent $5.10@5.10, spring wheat first patent $6.05@6.30, standard patent $5.80@6.05.

PACIFIC COAST

Seattle: Market much improved, sales reported early of substantial volume, and while sales were off the latter part of the week inquiries continued freely, especially from the Southeast. With wheat values locally 10 to 15c under Kansas City, flour can be worked to Gulf ports via water. Lack of space for intercoastal shipment has been a handicap, but if enough business developed this condition would adjust itself. Foreign business still very low, few parcels to the Philippines accounted for all the export business. Quotations, f.o.b. Seattle or Tacoma, Dec. 9: family patent \$6.35@6.50, bluestem \$5.40@5.56, straight soft white \$5.10@5.25, pastry \$5.10@5.25, Dakota \$6@6.15, Montana \$5.60@5.75.

Portland: Mill bookings the heaviest since the middle of September. Both coast and interior mills booked heavily for shipment in January-February and even into March. Interior mills sold several large lots to move by rail into the Southeast, although prices reported were at extremely low levels. Some mills turned down business due to the low bids in the market. Blenders principal buyers.

California trade much better, but sales chiefly of better grades, with bakeries the buyers. Chain stores bought moderately, as they had previously purchased substantial quantities.

Coast mills could do a larger volume with the Southeast, but lack of space until early March restricts bookings. This space situation not expected to improve because of slow movement of cargo from the East. Steamship operators indicate they will not put on more ships due to the slow westbound traffic.

Philippines bought a little more freely for January-February-March shipment. Hongkong bought from Puget Sound mills, the first volume in weeks.

Flour prices were advanced to meet advancing wheat values. Export subsidy unchanged at \$1.30 for world-wide and \$1.20 to the Philippines. Quotations, Dec. 9: export straights \$2.90@3, f.a.s; soft wheat straights \$1.55@1.80, c.i.f. Gulf-Atlantic; high gluten \$5.70@5.90, c.i.f. Gulf-Atlantic; f.o.b. mill, all Montana \$5.25@5.45; bluestem bakers, unbleached \$5@5.20; bluestem bakers \$4.75@4.95, Big Bend bluestem \$4.80@5, cake \$6.60@6.80, pastry \$4.40@4.60, pie \$4.40@4.60; fancy hard wheat clears, \$4.90@5.10; whole wheat, 100% \$4.90@5.10, graham \$4.30@4.50, cracked wheat \$4.30@4.50.

Ogden: Business brisk during the week, with price advance anticipated, with 4c rise in wheat. Specifications fair, but bookings continue slow. Grain shipments dropped to 37 carloads inspected wheat received and 17 shipped out. West Coast flour business reported good.

Quotations, Dec. 8: to Southeast: first family patents \$6.50@6.70, straights \$6.25@6.45, stuffed straights \$5.65@5.75, basis car lots, f.o.b. Memphis and other lower Mississippi River common points; bakers patents \$6.25@6.35, straights \$6.05@6.15, stuffed straights \$5.85@5.95. To California dealers: first family patents \$6.65@6.85, straights \$5.60@5.70, stuffed straights \$4.95@5.50, carloads, f.o.b. San Francisco common points; bakers patents \$5.95@6.05, straights \$5.50@5.70, stuffed straights \$5.70@5.80. To Utah and Idaho dealers: first family patents \$5.70@5.90, straights \$5.25@5.45, stuffed straights \$3.95@4.15, bakers patents \$5.05@5.15, straights \$4.85@4.95, stuffed straights \$4.65@4.75.

San Francisco: Higher prices prevailed, tending to make sales more active, particularly among small lot buyers. Volume not exceptional, however, as most bakers are holding fairly close to 30 to 60 days' requirements and show no desire to book for four months or longer. Prices have not reflected the full advance in wheat costs due to generally high millfeed credits now available, and for this reason any radical move in the millfeed market could materially affect flour prices. Quotations, Dec. 9: eastern family patents \$7.60@7.80, California family patents \$7.40@7.60, Oregon-Washington bluestem blends \$4.85@5, northern hard wheat patents \$5@5.20, pastry \$4.50@4.70, Dakota standard patents \$5.50@5.70, Montana spring wheat patents \$5.40@5.60, Montana standard patents \$5.20@5.40, Idaho hard wheat patents \$4.80@5, California bluestem patents \$4.70@4.90, California pastry \$4.40@4.60.

CANADIAN MARKETS

Toronto: Spring wheat flour sold freely in the domestic market on the recent advances in price. Bakers have been booking substantial quantities, and there has been a general renewal of interest which had been dormant for many weeks. Price cutting, which had been out of the picture when there was little or no business, is again appearing in one or two places. This makes it exceedingly difficult for mills who want to maintain values on a profitable level. Prices advanced 20c bbl in the early part of week, but later declined 10c, leaving lists 10c bbl higher as compared with a week ago. Quotations, Dec. 9: top patents \$5.80 bbl, seconds \$5.05, bakers \$4.95, whole wheat flour \$5.05, all in 98's, jute, delivered Toronto territory, less 10c bbl for spot cash.

Export demand from the United Kingdom has fallen off since the increase in prices. Food control authorities who do the buying through regular importers have placed no business since the advance. However, Norway has been in the market for a fair quantity, and the British West Indies are buying steadily. This has given Canadian mills a moderate amount of trade in the week. The asking price is 9d higher than at previous week end. Quotations, Dec. 9: export patents 27s 6d per 280 lbs, jute, f.o.b. December-January seaboard.

Winter wheat flour shared to some extent in the renewed activity when prices took an upward trend, but this demand has died away again since buyers satisfied their needs. A little of this flour being sold for export, but the amounts are small due to uncertain wheat offerings. Prices strengthened in sympathy with springs and are now 35@50c bbl higher than that of a week ago. Quotations, Dec. 9: \$3.60 bbl, in second-hand jutes, car lots, Montreal basis; \$3.35@3.40, bulk, export.

The Wheat Board holding its wheat off the market to a large extent. Only small lots made available to mills at uncertain intervals. More could be sold for use in the exporting flour trade if the board's policy were more encouraging. There is an increase of 8c bu. The Wheat Board quotation now is 88c bu, c.i.f. Montreal, which means 76c bu, f.o.b. shipping points in Ontario.

Montreal: Advancing markets have awakened interest in spring wheat flour. Chain stores and large bakers placing substantial orders for the first time in many weeks. Stocks booked on the outbreak of war are depleted and now being replenished. Another factor contributing to the improved demand is that buyers see little prospect of price declines with a war on in Europe and unfavorable crop reports from the Argentine and some sections of United States. Prices fluctuated during the week. There were two increases of 10c each, followed by a decline of 10c, leaving prices 10c over lists of previous week end. Quotations, Dec. 9: top patents \$5.90 bbl, seconds \$5.25, bakers \$5.15, whole wheat flour \$5.25, all in 98's, jute, delivered Montreal territory, less 10c bbl for spot cash.

Export trade in spring wheat flour with the United Kingdom quiet. British government buyers have made no purchases on the recent advance. Demand from other markets, such as Newfoundland and the British Indies, fair. Mills have enough orders booked to keep them going for a few weeks. Prices 1s 9d higher as compared with a week ago. Quotations, Dec. 9: export patents 27s 6d per 280 lbs, jute, f.o.b. Halifax-St. John, December-January seaboard.

Winter wheat flour has been more active. Buyers needed supplies and considered it wise to cover requirements when the market began to strengthen. Although some cheap prices are heard of these are not general and would be for flour bought before the advance went into effect. Winters had a larger advance than springs, being 30@40c higher than a week ago. Quotations, Dec. 9: \$3.50 bbl, in second-hand jutes, car lots, Montreal basis; \$3.35@3.40, bulk, export.

Winnipeg: Demand continues on a good scale with sales confirmed for export and domestic account. While most of the overseas business was directed to the United Kingdom, Norway also took supplies. Most of the business reflected in the Winnipeg futures market, with mills purchasing about 2,000,000 bus against the week's flour trade. With navigation virtually at a close for the current season, demand for cash wheat slackened considerably and premiums on most grades eased. Business confined to odd cars and small, and included supplies for movement on an all-rail basis to eastern mills. Quotations, Dec. 9: top patent springs for delivery between Fort William and the British Columbia boundary, \$5.60 per bbl, jute, seconds \$5.10; second patents to bakers \$5, car lots, basis jute 98's; cottons 10c more.

Vancouver: Mills in western Canada were operating at an increased rate during the week, filling orders reported to have been passed on to them by eastern mills, which are working to capacity in connection with purchases by the British ministry of supply. They were also handling some small orders from Hongkong, Shanghai and the Philippines, but all this business did not add up to any great quantity, being chiefly regular orders of established brands for use of the white population in the Orient.

While export trade across the Pacific continued along very limited lines, there was a considerable stir in the local trade as a result of a price war which threatened considerable proportions before it began to simmer down toward the end of the week. Sales as low as \$1.20 below list were made to the retail trade, following a price-slashing inaugurated by one of the chain stores. One mill joined in the fight and announced reductions of as much as 90c bbl. This slash was made in spite of three advances of 10c each put into effect by the mills as a whole, following the steady rise in Winnipeg wheat. The net cut was therefore \$1.20 bbl.

The war reached such a pitch that one chain store was offering 49's to the public at \$1.29, far below the wholesale level, and one mill was quoting 98's, top patents, at \$5.10 to the retail trade, against the regular cash price of \$6 for jute 98's. The result, it is reported, was that several meetings were held by mill executives in the East and the war was declared ended. Bakers patents have advanced to \$5.60 for jute 98's.

Regarding competition from Australian millers in the Far East, Canadian mills have been advised that mills in the Antipodes will be kept busy until after the first of the year grinding the order of 50,000 short tons of flour for the British government, and for this reason are not making any strenuous efforts to secure Chinese or Japanese orders at present. The new Australian crop is being harvested this month with prospects reported satisfactory.

MILLFEED MARKETS

Quotations Tuesday, Dec. 12.

Minneapolis: Another quiet week reported in millfeed circles. Even though the consuming trade knows that production is below normal, they do not evidence more than cursory interest. Buying is limited to near-by needs, and at times is barely enough to absorb the decreased production. In fact, not infrequently mills are forced to ask for directions in advance of contract shipping dates in order to prevent accumulations. Mild weather the country over is not conducive to heavy feeding, but as long as prices show no signs of hardening, buyers are not disposed to anticipate their wants, even though stocks are inadequate to meet the heavier demand that is sure to follow the advent of subzero weather: bran and std. midds. \$19.50@20, flour midds. \$22@22.50, red dog \$23.50.

Kansas City: Very poor; trend lower; supply larger; bran \$18.50@18.75, shorts \$22.25@22.50.

Hutchinson: Active; trend fairly steady; supply inadequate; bran \$19.50@19.75, mill run \$21.50, gray shorts \$23.50 (Kansas City basis).

Oklahoma City: Excellent demand for feeds; prices of bran unchanged, but declines in mill run and shorts; bran \$1.05@1.10 per bag of 100 lbs, mill run \$1.15@1.20, shorts \$1.25@1.30.

Omaha: Moderate; trend of bran steady, shorts easier; supply good; std. bran \$18.50, pure bran \$19, brown shorts \$20.50, gray shorts \$21.50, flour midds. \$21.50, red dog \$24.

Denver: Steady; trend firm; supply ample; bran, std. red \$22, red mill run \$24, white \$25, shorts, gray \$28, brown \$30; red dog \$32.

Wichita: Good; supply even with demand; prices steady; bran \$19@19.50, mill run \$21@21.50, shorts \$23@23.50.

Salina: Good for bran and excellent for shorts; trend steady; supply of bran sufficient but mills are behind on orders for shorts; bran \$19@19.50, gray shorts \$23@23.50.

Fort Worth: Fair; trend about steady; wheat bran \$23, gray shorts \$25, white shorts \$33, del. Texas com. pts.

Chicago: Fair; trend steady; supply adequate; spring bran \$23, hard winter bran \$22, std. midds. \$22.50@23, flour midds. \$24.50@25, red dog \$27@27.50.

Milwaukee: Lack of interest and sales activity; unseasonably warm weather allowing livestock to continue outdoor feeding; prices practically unchanged; std. midds. \$22.50@23, std. bran \$22@22.50, flour midds. \$24.50@25, red dog \$26@27. Supplies, however, are not burdensome. Spring wheat mills offering by-product feeds sparingly, as the present flour run is comparatively light.

St. Louis: Bran \$21@21.25, pure bran \$21@21.25, gray shorts \$23.75, brown shorts \$23.25, red dog \$27.

Toledo: Stronger, advancing; particularly bran, up \$1@1.50 ton for the week; soft wheat bran \$23.50@24, mixed feed \$24, flour midds. \$24.50@26, std. \$24, Toledo second clear \$32.50.

Cincinnati: Limited; trend steady; bran \$24@24.50, gray shorts \$27@27.50, brown \$25.50.

Indianapolis: Limited; prices steady to higher; supply moderate; soft winter wheat bran \$26.25@26.50, std. midds. \$27.25@27.50, mixed feed \$27@27.25, flour midds. \$29.75@30, red dog \$31.25@31.50; spring wheat bran \$26@26.25, std. midds. \$25.75@26, mixed feed \$26.50@26.75, flour midds. \$27.75@28, red dog \$30.75@31, rye midds. \$22.50@22.75.

Louisville: Good; bran \$26 ton; mixed feed \$27, midds. \$28.

Buffalo: Light, due to mild weather and large Canadian receipts; trend steady; supply fair; bran, \$24; std. midds. \$24, flour \$27, second clears \$31, red dog \$28, heavy mixed feeds \$27.50.

New York: Fair, chiefly for near-by shipment; trend steady; supply sufficient; bran \$28.10, midds. \$28.10, red dog \$32.25.

Boston: Slow, but mills and resellers with plenty of supplies held quotations firm with exception of midds., which were 50c lower. At present levels there was no interest in future requirements, business being only on near-by needs. Quotations from western sources 75c ton higher than Buffalo on bran and midds. Canadian sellers 50c ton lower than domestic on bran and shorts for immediate needs and 75c lower for future shipment: spring and winter bran \$27.50@28, std. midds. \$26.50@27, flour midds. \$27.50@28, mixed feed \$28@30, red dog \$33.

Baltimore: Fair; trend firm; supply ample; std. bran \$24.25, pure soft winter bran \$24.50, std. midds. \$24.25, flour midds. \$27.25, red dog \$27.50.

Philadelphia: Limited; trend steady; supply light; bran, std. \$27.50@28, pure spring \$28@28.50, hard winter \$28@28.50, soft winter nominal, midds., std. \$27.50@28, flour \$30.50@31.50, red dog, \$31@32.

Pittsburgh: Fair; trend higher; supply ample; spring bran \$26.45, red dog \$30.55.

Atlanta: Good, especially for deferred, trend unsteady; supply ample; considerable amounts booked for January; Florida reports state moderate receipts of wheat feeds at markets there were applied on previous contracts; a small cargo of Argentine wheat feed reported en route to Jacksonville, Fla., but limited ocean freight space restricting interest in imported wheat feeds at most Gulf and south Atlantic ports; bran \$28.50@29.50, gray shorts \$31.75@33, std. midds. \$31.75@32.25, rye midds. \$26@26.50, red dog \$35@36.

Memphis: Only for small lots; trend shade easier, supply ample and plenty offerings but stocks are low; bran \$22.75, gray shorts \$26.50.

Norfolk: Gray shorts \$31@31.50, bran \$27@27.50.

Nashville: Light; only an occasional car for immediate shipments sold; prices slightly weaker to unchanged, bran \$21.50@22, gray shorts \$26.50@29.50.

Seattle: Fair; trend stronger; supply fair; \$24@24.50, local or Montana points.

Portland: Std. mill run, car lots \$25@25.50 ton, bran \$26@26.50, shorts \$29, midds. \$31.

Ogden: Trade continued good, with demand brisk and feeding increased. Dry weather conditions playing havoc with ranges; feeding general in territory, with market rising and trend firm. To Utah and Idaho dealers: red bran and mill run \$21.50, blended \$21.50, white 22, midds. \$28, carload lots, f.o.b. Ogden. Denver prices: red bran and mill run \$26, blended \$26, white \$26.50, midds. \$31.50 ton. California prices: red bran and mill run \$28.50, blended \$28.50, white \$29, midds. \$33.50, car lots, f.o.b. Los Angeles. Millfeed prices for San Francisco shipment quoted 50c under Los Angeles.

San Francisco: Market continues firm, with offerings light; demand only fair, as buyers tending toward cheaper feeds as much as possible and using only minimum requirements of millfeed. Kansas bran, \$29@29.50. Utah-Idaho: red mill run \$27.50@28, blended \$28@28.50, white \$28.50@29. Oregon-Washington: red mill run \$27.50@28, std. \$28@28.50, white \$28.50@29, white bran \$30.50@31, midds. \$32.50@33, shorts \$31@32. Montana: bran and mill run \$29.50@30, eastern red bran \$28.50@29. California blended mill run \$28@28.50, white \$28.50@29.

Los Angeles: Fair; trend steady; supply ample; Kansas bran \$29, midds. \$39, local \$28, Utah-Idaho red and blended white \$28.50.

Toronto: Slower, trend steady; export inquiry from United States has dropped off, mills well sold ahead and offerings light; bran \$25, shorts \$26, midds. \$28, bags included, mixed cars.

Montreal: Moderate, trend steady; supply light although production heavy; mills using their output to fill old orders; Boston and other New England markets less interested; bran \$23, shorts \$26, midds. \$28, bags included, mixed cars, Montreal freights.

Winnipeg: Fairly good, but chiefly for eastern Canada and New England states, only minor sales in western provinces; some supplies expected to move overseas to United Kingdom early in 1940. Stocks show some increase. Bran \$23, shorts \$24. Man. and Sask.; Alta. bran \$20.50, shorts \$21.50; small lots ex-country elevators and warehouses \$3 extra.

Vancouver: Trend steady to higher; advances of \$1.50 each on bran and shorts and \$1 on midds. carried prices during the week to the highest levels in two months. Dealers continued to work on a hand-to-mouth basis, while stocks are nominally ample, demand has improved and replacements will be needed around Dec. 20. Still no export. Bran \$24.80, shorts \$25.80, midds. \$27.80, and feed flour \$32 [illegible].

SEMOLINA MARKETS

Minneapolis: On the advance a week ago, there was more or less inquiry and selling, most durum mills participating in the business. No large lots were worked, but many macaroni manufacturers bought moderately. Since then, however, there has been a complete let-up in inquiry. Prices are 25@30c bbl higher for the week and directions are only fair. No. 1 semolina \$5.75@5.95 bbl, bulk, f.o.b. Minneapolis, granular \$5.45@5.65 and straights \$4.95@5.15.

In the week ended Dec. 9, nine Minneapolis and interior mills made 14,[illegible] bbls durum products, against 15,911 in the previous week.

Philadelphia: Held fairly and ruled firm and higher, with offerings light; No. 1 durum semolina, \$6.85@7.

Pittsburgh: Demand light; trend higher; supply ample; No. 1 \$6.15.

Milwaukee: Increases of approximately 40c failed to stimulate much interest in buyers, who continued covering only immediate requirements with small hand-to-mouth bookings for immediate delivery, some improvement in directions on older accounts; fancy No. 1, \$6, patents, ordinary \$5.95, fancy \$6, clears, ordinary \$3.50, fancy \$4.15, No. 2 flour, \$5.75.

St. Louis: Prices advanced 20c, sales and shipping instructions slow; first grade semolina \$6.75, granular \$6.45, No. 3 \$5.65, durum fancy patent \$5.25.

Buffalo: Demand light; trend steady; supply ample; in 98-lb cottons: No. 1 \$6.20, durum fancy patent \$6.10, macaroni flour \$5.90, first clear \$4.80, second clear \$4, durum granular \$6.30.

Chicago: Demand remains very dull; directions fair; No. 1 semolina, \$6@6.10.

RYE PRODUCTS

Minneapolis: A marked improvement in inquiry and a little more disposition to buy is noted with advancing markets. Bookings, however, are still rather light, considering the long dull spell. There has been no heavy contracting for forward delivery, and buying has been largely of the car lot variety, evidently to cover near-by needs only. Pure white rye flour \$3.45@4.20 bbl, in 98-lb cottons, f.o.b. Minneapolis, pure medium \$3.90@4, pure dark \$3.05@3.10.

Indianapolis: Demand confined to small lots for immediate consumption; little interest, prices upward, pure white patents \$4.45@4.60, medium \$4.30@4.50, dark \$4.20@4.45, meal \$4.05.

Pittsburgh: Demand improved, trend higher, supply adequate, pure white rye flour \$4.30@4.55, medium \$3.45@4.10, dark \$3.25@3.60.

Chicago: The stronger market did not in-

WANT ADS

Advertisements in this department are 5c per word; minimum charge, $1. (Count six words for signature.) Situation Wanted advertisements will be accepted for 2½c per word, 50c minimum. Display Want Ads $4 per inch per insertion. All Want Ads cash with order.

MACHINERY FOR SALE

FOR IMMEDIATE SALE, AT SACRIFICE prices; 1—22-bbl Midget mill, complete and in excellent shape; can be inspected or will send blue-print. For further information write or wire Southern Machinery Co., Brentwood, Md. Phone: Greenwood 3619.

REPRINTS

For the benefit of those who may desire reprints of editorial or other articles appearing in *The Northwestern Miller*, the publishers will supply such reprints at actual cost, approximately as follows for articles occupying one page or less of space, ordered within six weeks of publication—for later orders a charge for resetting type will be added: $2.00 for the first 100; 40c for each additional 100 up to 1,000; $4.00 for each additional 1,000; minimum order $2.00. Additional charges, at cost, will be made for articles exceeding one page in length, for reprints in pamphlet form, for special paper stock, extra color, etc.

THE NORTHWESTERN MILLER
118 So. 6th Street, Minneapolis, Minn.
Or any branch office.

duce buyers to take on anything more than immediate requirements as a whole; here and there reports of satisfactory small lot sales; directions fair; white patent $3.90@4.10, medium $3.60@3.90, dark $3.15@3.40.

New York: Improved demand; sales fair; pure white patents in cottons $4.40@4.65.

Milwaukee: Buyers apparently feel that the current advances in prices are only temporary; therefore, not covering as heavily as in September. Current business chiefly for immediate coverage and called for prompt delivery; prices up 20@30c. Standard $4.10@4.25, short patent $4.10@4.20, straight $3.85@4, dark $3.45@4.10, blended $3.90@4.50, meal $3.70@3.80.

St. Louis: Prices advanced 15c. Sales and shipping instructions slow; pure white flour $4.60 bbl, medium $4.40, dark $3.80, rye meal $4.20.

Buffalo: Demand light; trend steady; supply ample; in 98-lb cottons: dark $4.15, medium $4.75, white $4.95.

Baltimore: Prices increased 15c bbl; quotations on No. 2 rye steady; demand little changed, rye flour, dark to white, $4.15@4.95 bbl; No. 2 rye, 65@70c bu.

Portland: Pure dark rye $4.50@4.60, medium dark rye $4.55@4.65, Wisconsin pure straight $5.15@5.30, Wisconsin white patent $5.45@5.60.

Philadelphia: Market rules firm and generally higher, with offerings light and demand fair; white patent, $4.65@4.80.

OATMEAL MARKETS

Toronto: Rolled oats and oatmeal selling freely; buyers more interested since market took upward trend; prices 15c higher; rolled oats $2.65 per 80-lb bag, jute, delivered Toronto, mixed or car lots.

Montreal: Oat products in fair demand; business has improved as prices strengthened; there has been another advance of 15c bu; rolled oats $2.65 per 80-lb bag, jute, delivered, buyers' station; car lots 30c under.

Winnipeg: Demand for rolled oats and oatmeal fairly good, with a little improvement reported in domestic sales. Reported further supplies sold to United Kingdom. Supplies on light side. Rolled oats in 80-lb sacks, $2.80 in the three prairie provinces; oatmeal, in 98-lb sacks, 20% over rolled oats.

Minneapolis: Rolled oats were quoted on Dec. 11 at $2.75 per 90 lbs, bulk; 20-oz packages $1.70 per case; 48-oz packages $1.80.

Millfeed Futures Open Interest

Following table shows open contracts at Kansas City and St. Louis, in tons, on Dec. 11. This is the short side of contracts only, there being an equal number of tons open on the long side:

	Kansas City Bran	Kansas City Shorts	St. Louis Bran	St. Louis Shorts	St. Louis Middlings
December	58	100	100	800	
January	3,100	1,100	100	800	
February	3,200	900	200	4,000	200
March	2,600	700	600	2,400	800
April	2,000	400	100	1,000	700
May	200	..	..	1,000	100
				600	
Totals	11,150	3,680	1,000	14,200	1,800

*Delivered in Chicago.

Western Canada Visible Grain Supply

Visible supply of grain in the western inspection division Dec. 8, 1939, and receipts and shipments during the past week, in bushels (000's omitted):

Fort William and Port Arthur—	Wheat	Durum	Oats	Barley
Semi-public terminals	41,160	2,611	859	496
Private terminals	16	..	22	5
Winter storage, afloat	1,467	..	..	..
Totals	42,643	2,611	881	501
Int. public and semi-public elevators	25,653	2	6	2
Churchill	2,485	..	..	..
Victoria	601	..	..	..
Vancouver-New Westminster	14,262	..	230	294
Totals	76,036	2,613	1,117	797
Year ago	84,189	3,042	1,286	982
Receipts during week—				
Ft. Wm.-Pt. Ar.	4,840	60	295	196
Seaboard ports	902	..	14	11
Int. public and semi-public elevators	332	..	1	..
Totals	6,080	60	309	214
Shipments during week—				
Ft. Wm.-Pt. Arthur—				
Lake	10,277	494	894	756
Rail	4	1	31	21
Int. public and semi-public elevators	11	..	..	..
Seaboard ports	221	..	1	2
Totals	10,513	495	926	781

TOTAL RECEIPTS

Aug. 1-Dec. 8, 1939				
Ft. Wm.-Pt. Ar.	156,749	6,142	5,748	11,819
Pacific seaboard	14,162	..	513	195
Churchill	1,924	..	..	..

TOTAL SHIPMENTS

Aug. 1-Dec. 8, 1939				
Ft. Wm.-Pt. Ar.	130,189	5,201	10,550	12,181
Pacific seaboard	5,651	..	333	171
Churchill	1,772	..	..	..

LEADING MILLS OF THE BRITISH EMPIRE

BRITAIN'S GREAT EVACUATION BRINGS A TRAIN OF TROUBLE

By L. F. Broekman

London Office of The Northwestern Miller

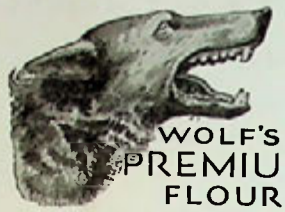
A CROP of difficulties has arisen over the evacuation. This is a natural consequence of the movement of about 4,000,000 people from their homes and native surroundings. Not only have the children been evacuated from the large vulnerable cities, with their teachers, and in some cases with their mothers, but there has been a vast migration of government offices, with their enormous staffs, and large business concerns with their staffs. Thus many hitherto quiet country towns and villages have been invaded by town-bred folk and the whole equilibrium of life for both classes of people has been fundamentally disturbed.

The invasion has involved much hardship for the inhabitants of country towns and villages. They were compelled—from the mansion to the cottage—to accommodate the evacuees, unless there was some very strong reason why they should not do so, and it has caused tremendous upheaval and unhappiness in many homes. Also, in a number of cases, the evacuees, separated from parents, or from husband, wife, family and friends, are forced to live in cramped conditions, very often without the amenities to which they are accustomed.

Almost of necessity a great deal of over-crowding occurred at first, and it happened that children and adults from cultured, well-ordered, comfortable and even luxurious homes, found themselves billeted in very rough quarters, often with no proper accommodation for sleeping, personal ablutions or privacy of any kind. On the other hand, some of the roughest of the rough were billeted in beautiful houses. Unused to such surroundings, they were not only like fish out of water but played havoc with carpets, furniture and beds. There also has been much complaint of the personal uncleanness of some of the evacuated children. This was accentuated by the fact that they had been on holiday for a month before they were evacuated and thus had not been submitted to the usual school regulations of cleanliness.

The billeting of that great army of women and children was a colossal task in which there were bound to be some misfits. However, every effort has been made, and is still being made, to correct these. The authorities are always urging patience on the part of the evacuees and the householders in the reception areas.

One can sympathize with the householders who, in many cases, have a very real grievance. They often have to contend with spoilt, uncontrolled, undisciplined children, rude in speech and manners and very disobedient, but a still greater difficulty has been the women evacuees. It is agreed that it was a mistake to allow the mothers to accompany the children. Where this has happened much discord and contention has prevailed and the children have failed to settle down as happily as where the contrary was the case. Many of the women are inveterately lazy and refuse to give a helping hand in any way whatsoever, claiming that as the government is paying for their board and keep, why should they be expected to do any work? They give loud voice to their discontent and boredom—"buried away in the country," as they say, without cinemas and the fried fish shop to supply them with fish and chips! Some of them have even refused to get up in the morning, saying bed was the best place as there was nothing on earth to do. This too, was at a time when the country was looking beautiful in its autumn dress and the weather warm and sunshiny, as was the case throughout September. Now that storms, rain and mist are prevalent their moans must be still louder as they long for the crowded alleys and streets of London and other large cities. On the



other hand, the greater number have settled down happily to the enjoyment of country life, and already some of the children are saying they want to be farmers, so the evacuation may bring about the "back to the land" movement which has been urged so strongly for years past without avail.

Another difficulty of the evacuation of the children is their education. The small schools of the country districts are totally unable to accommodate them, so that the teaching has to be done in relays, which, of course, means that the children are not getting anything like the full education given in their home schools. Neither is the necessary efficient equipment available. In many of the country towns the schools remained closed until such time as appropriate air raid shelters had been provided, and the teachers have had to keep the children employed by organized games and walks, or by arranging small tutorial classes in houses. Where the children are keen on their lessons this latter method of education, naturally, is to their advantage, being of a more individual character than they would receive in the ordinary way.

The immunity from air raids, so far, has encouraged many parents to bring their children back to their homes. On Sundays the children have received visits from their parents—very often much to the inconvenience and embarrassment of the household where the children are billeted, some of the parents expecting to be entertained gratis.

For a week or so all went happily, but then the parents began to find fault with the billets, and the final touch was given when the government announced that the parents would have to contribute 6s ($1.50) per week, if their means allowed, for the board of each child, whereas the impression had prevailed that there was nothing to pay. So Billy, Tom and Betty were hauled home.

It must be allowed that the parents miss their children sorely, but the wise ones know that the children are better away from the dangers that threaten the great cities, especially London. Hitherto the authorities have refused to re-open the schools in the vulnerable areas, and, in fact, have turned over many of the school buildings to the A.R.P. (Air Raid Precaution) services, so that the children who have returned to London and other big cities are receiving no education, and run wild in the streets. Some of the churches have gathered a number of these children under their wing, giving them a modified form of instruction for a few hours per week, with such voluntary help as could be secured. However, with the growing numbers of children returning, the government has decided to re-open certain schools for the older children, nevertheless continually and earnestly pleading with parents not to bring their children back to the vulnerable areas. It is understood that the whole subject of education in time of war will be debated in Parliament in the near future. It is a very pressing problem.

The commandeering by the government of large numbers of hotels and school buildings in safe areas for the accommodation of government offices and their staffs has caused loud outcry. Old established hotels, with permanent guests of long standing, have had to hand over their buildings at very short notice, without any immediate prospect of compensation, and much distress has been caused the proprietors by the loss of their businesses, and, incidentally, much inconvenience and unhappiness to their guests. It is stated that hundreds of hotel keepers are refusing to fill in the compensation forms which have been sent them by the Treasury, claiming that the

form is vague and does not take into account the loss of their goodwill. It is argued, however, in certain quarters, that probably in the long run the hotel proprietors in question will be far better off than if they had retained their hotels, and been left to struggle with the reduced spending power of the public and the lighting and petrol restrictions.

If possible a still louder protest has been raised by the requisitioning of school buildings when there were plenty of apparently suitable empty buildings available. Several of the large "public" schools, or "prep schools" as they are called in the United States, for boys and girls, have had to be evacuated to house government departments and in some cases much damage has been done by careless removal or handling to costly equipment, which it will be difficult to replace. In most cases the schools have been transferred to castles and large mansions, leased or placed at their disposal by the owners for the duration of the war. It will be no easy matter to carry on school work there, deprived of much of the usual equipment and accommodation.

However, there may be valuable compensations for even this great upheaval, for it is held that the wholesale improvization required will be good for the future life of the children, while at the same time their higher education will continue in the forefront as heretofore, in spite of the many difficulties pertaining thereto.

Last, but not least, is the dislocation and impoverishment which has occurred in the evacuated areas by the vast efflux of people from their homes. Not only have circumstances compelled many to evacuate but the well-to-do have done so for safety reasons. This means a serious loss of trade to the cities concerned. In whole districts the shopkeepers are faced with ruin, while many persons who earned their living by letting their houses or apartments, or taking boarders, are left high and dry. This has led to a great deal of unemployment and much distress in many directions, and it looks as if there is a hard time ahead for many during the coming winter.

—BREAD IS THE STAFF OF LIFE—

A Bit of Netherlands in Kansas

(Continued from page 9.)

Valley farmers took their grain there to be ground into flour, corn meal and livestock feed. Then for a long time it stood idle, until in 1925 A. M. Bittmann and Forest Leach, two members of the Wamego park board, discovered that it was slowly falling into decay. They suggested to the mill's owners, Mr. and Mrs. Ed Regnier, that it be donated to the town.

A plan was agreed upon whereby a day was set aside as a holiday and the entire community joined in moving the mill. Thirty-five teams and wagons turned out, and the women spread a hearty noonday luncheon for the sweating menfolk. Each stone was taken down and numbered. Blue prints and photos were made so that each part could be replaced exactly as it was before. A bust of Ceres, goddess of the grain, still occupies a place above the window.

An engineer of the Union Pacific Railway Co. directed the work of constructing the mound of earth where it was to stand. Now, through the generosity of Mr. Cox, the vanes and machinery again give the mill the picturesque appearance of those along the Zuyder Zee where Mynheer Schonhoff learned the technique of grinding grain.

The most famous Kansas windmill was the five-story stone and wood structure at Lawrence, built before the Civil War and in operation until 1885. It could grind 20 bus of wheat a day and also provide power for a wagon and plow shop. Andrew Palm and John H. Wilder, who built the mill, called their firm the Windmill Agricultural Co.

At Reamsville stands an old windmill built by Charles G. Schwarz, formerly of Michelenberg, Germany, who took up a homestead in Smith County. Corn and graham flour were ground on shares, and the corn meal was said to be of such excellent quality that it was sold in all adjoining towns in Kansas and Nebraska. This mill is octagonal in shape, 40 feet in diameter at the bottom, tapering to 18 feet at the top.

Coming Events

GRAIN AND FEED DEALERS' CONVENTIONS

Jan. 23-25.—Farmers Grain Dealers Association of Iowa, convention at Savery Hotel, Des Moines, Iowa.

Jan. 29-30.—Indiana Grain Dealers Association, annual convention at Columbia Club, Indianapolis; secretary, Fred K. Sale, 600 Board of Trade, Indianapolis.

Feb. 6-8.—Farmers Grain Dealers Association of North Dakota, convention at Bismarck, N. D.

Feb 27-28.—Western Grain and Feed Dealers Association, convention at Des Moines, Iowa; secretary, Ron Kennedy, 1008 Hubbell Bldg., Des Moines.

March 31-April 3.—Society of Grain Elevator Superintendents, convention at Royal York Hotel, Toronto, Ont.; secretary-treasurer, Dean Clark, 4100 Board of Trade Bldg., Chicago.

May 23.—Grain, Feed and Millers Association of Missouri, convention at Hoxsey and Ben Bolt Hotels, Mexico, Mo.

BAKERY CONVENTIONS

Jan 7-10.—Ohio Bakers Association, annual convention at Hotel Gibson, Cincinnati; secretary, Frank E. Noyes, 829 West Broad St., Columbus.

Jan. 21-23.—Potomac States Bakers Association, convention at Lord Baltimore Hotel, Baltimore, Md; secretary, J. Frederick Diener, 516 North Charles St., Baltimore.

Feb 4-6.—Pennsylvania Bakers Association, convention at William Penn Hotel, Pittsburgh; secretary, Harold E. Snyder, 5700 North Broad Street, Philadelphia.

March 11-14.—American Society of Bakery Engineers, annual meeting at Edgewater Beach Hotel, Chicago; secretary, Victor E. Marx, 1541 Birchwood Ave., Chicago.

April 1-3.—Associated Bakers of Illinois, convention at Hotel Abraham Lincoln, Springfield; secretary, Wilmoth C. Mack, 344 Webster Ave., Jacksonville, Ill.

April 1-3.—Oklahoma Bakers Association, convention at Biltmore Hotel, Oklahoma City, Okla; secretary, J. W. Wallen, 401 East Fifth Street, Oklahoma City.

GROCERY CONVENTIONS

Jan 21-23.—National American Wholesale Grocers Association, convention at Chicago, Ill.

Jan. 21-23.—National Sugar Brokers Association, convention at Chicago.

Jan. 23-25.—National Canners Association, convention at Chicago.

Jan. 22-24.—National Retailer-Owned Grocers Association, sixth annual convention at Hotel Sherman, Chicago.

FLOUR TRADE CONVENTIONS

Jan. 29-30.—Indiana Millers State Association, annual convention at Columbia Club, Indianapolis, Ind; secretary, Miss Peggy Perdue, Marion, Ind.

May 20 (week of).—American Association of Cereal Chemists, annual convention at Park Central Hotel, New York, N. Y; secretary, Jim Doty, Omaha Grain Exchange, Omaha, Neb.

June 20.—Pennsylvania Millers and Feed Dealers Association, convention at Harrisburg; secretary, George A. Stuart, 1710 N. Second Street, Harrisburg.

Sept. 27-29.—Pennsylvania Millers and Feed Dealers Association, convention at Atlantic City, N. J; secretary, George A. Stuart, 1710 North Second Street, Harrisburg, Pa.

Grist of Grins

JIUJITSU

"Did I ever tell you how I tried my jiujitsu on a burglar?"

"No."

"Well, I got hold of his leg and twisted it over his shoulder. Then I got hold of his arm and twisted it around his neck and before he knew where he was I was flat on my back."—*California Retail Grocers Advocate.*

DO YOU KNOW THE DIFFERENCE BETWEEN?

If a diplomat says yes, he means perhaps; if he says perhaps, he means no; if he says no, he's no diplomat.

If a lady says no, she means perhaps; if she says perhaps, she means yes; but if she says yes, she's no lady.—*California Retail Grocers Advocate.*

THIN ICE?

It is said that the best way to break the ice with a girl is to break it and put it into some highballs.

EXCLUSIVE JOINT

And as the colored doorman ran down to open the limousine door, he tripped and rolled down the last four steps. "For heaven's sake be careful," cried the club manager. "They'll think you're a member."—*California Retail Grocers Advocate.*

MISPLACED ANATOMY, PERHAPS

From a police report: "He testified that Stephano held a loaded pistol against his stomach and threatened to blow his brains out."

ANOTHER VERSION OF PLUMBER STORY

Plumber (who had been unavoidably delayed en route): Well, how is the leak?

Man of the House—Not so bad now. While we waited I taught my wife to swim.—*California Retail Grocers Advocate.*

LIKES TO COME BACK

Judge Gruff.—Aren't you ashamed to be seen here in court so often?

Prisoner.—Why, no, your honor; I always thought it was a very respectable place."—*Pathfinder.*

REPRESENTATIVE FLOUR IMPORTERS OF FOREIGN COUNTRIES

R. HUNTER CRAIG & CO., Ltd.

GLASGOW—45 HOPE STREET LIVERPOOL—17 BRUNSWICK STREET

LONDON—7 LONDON STREET, MARK LANE, E. C.

Also at BRISTOL, SOUTHAMPTON, HULL, BELFAST, DUBLIN and COBH

D. T. RUSSELL & BAIRD, LTD.

45 Hope Street GLASGOW

IMPORTERS OF

FLOUR, OATMEALS, CEREALS

OFFICES ALSO AT

LIVERPOOL LEITH DUBLIN BELFAST

M. STANNARD E. A. GREEN

Established 1870

STANNARD, COLLINS & CO.

FLOUR, GRAIN AND CEREAL PRODUCT IMPORTERS

Cory Buildings, Fenchurch Street LONDON, E. C. 3

A. VAUGHAN THOMAS

FLOUR

59 Mark Lane LONDON, E. C.

Cable Address: "DORFEACH," London

MARDORF, PEACH & CO.

FLOUR IMPORTERS

Old Trinity House, Water Lane LONDON, E. C.

Want Second Patents and First Bakers

EUGENE SOMLYÓ

62 Mark Lane LONDON, E. C. 3

EXPORTER OF

ENGLISH MILLED FLOUR

Cable Address: "ESOMID"

Reference: The Northwestern Miller

COVENTRY, SHEPPARD & CO.

FLOUR IMPORTERS

LONDON

Cable Address: "COVENTRY," London

PILLMAN & PHILLIPS

FLOUR IMPORTERS

LONDON, LIVERPOOL, BRISTOL, DUBLIN, BELFAST

A. GARNHAM & CO.

FLOUR IMPORTERS

62 Crutched Friars LONDON, E. C.

Cable Address: "FLAKY," London

HARRIS BROS. & CO. (Grain) Ltd.

COMMISSION AGENTS and FACTORS

GRAIN, SEEDS, OIL, FEEDINGSTUFFS and FLOUR

Corys' Buildings

57/59 St. Mary Axe LONDON, E. C. 3

9 Brunswick Street LIVERPOOL

68 Constitution Street LEITH

81 Hope Street GLASGOW

J. M. & C. M. HAMM

FORMERLY

WALKERS, WINSER & HAMM

FLOUR AND GRAIN IMPORTERS

Offices: 50 Mark Lane, E. C. 3 LONDON

Cable Address: "ALKERS," London

ANDREW LAW WILLIAM R. LAW

CRAWFORD & LAW

FLOUR IMPORTERS

50 Wellington Street GLASGOW

and at 59 Mark Lane LONDON

Cable Address: "CAMELLIA," Glasgow

THE A B C CODE

In use by various foreign brokers

Sixth Edition . . $20.00

For sale at all its branches and by

THE NORTHWESTERN MILLER, MINNEAPOLIS, MINN., U. S. A.

FARQUHAR BROTHERS

FLOUR MERCHANTS

50 Wellington Street GLASGOW, C. 2

C. I. F. business much preferred.

Cable Address: "GLENCAIRN," Glasgow

N. V. Handelmaatschappij v/h GRIPPELING & VERKLEY

IMPORTERS OF ALL KINDS OF FLOUR AND CEREALS

Cable Address: "BIJGRIP," Amsterdam

All codes used

Bankers: Twentsche Bank, Amsterdam

Sole Agents of Washburn Crosby Co., Inc., Minneapolis AMSTERDAM

ROBERT NEILL, LTD.

FLOUR IMPORTERS

127 St. Vincent Street GLASGOW C. 2

Branches: Belfast and Dublin

JOHN F. CAMERON & CO.

FLOUR IMPORTERS

No. 8 South College Street, ABERDEEN, SCOTLAND

Also LEITH and DUNDEE

Cable Address: "VIGILANT" Code: Riverside

McCONNELL & REID, LTD.

FLOUR IMPORTERS

19 Waterloo St. GLASGOW

Cable Address: "MARVEL," Glasgow

Established 1868

N. V. M. WITSENBURG JR'S

AGENTUUR & COMMISSIEHANDEL

FLOUR IMPORTERS

AMSTERDAM HOLLAND

Cable Address: "WITSENBURG" Reference: De Twentsche Bank, Amsterdam

ROBERT CARSON & CO.

LTD.

FLOUR IMPORTERS

50 Wellington St. GLASGOW

Cable Address: "DIPLOMA," Glasgow

N. V. Algemeene Handel-en Industrie Maatschappij

"MEELUNIE"

(Flour Union Ltd.)

AMSTERDAM, HOLLAND

Leading and Official FLOUR IMPORTERS

Cable Address: "COMLAAN"

ANDREW TAYLOR & CO.

(GLASGOW) LTD.

FLOUR IMPORTERS

163, Hope Street, GLASGOW

Cable Address: "GOLDENGLO," Glasgow

LØKEN & CO. A/S

Established 1871 OSLO, NORWAY

Working Norway, Finland, Denmark and Sweden

Reference:

Chase National Bank of the City of New York, New York

Midland Bank, Ltd., Poultry & Princes St., London

WILLIAM MORRISON & SON

LTD.

FLOUR IMPORTERS

Baltic Chambers, 50 Wellington Street GLASGOW

Cable Address: "WAVERLEY"

Established 1894

ANTH. JOHANSEN & CO.

FLOUR, GRAIN AND FEED AGENTS

OSLO, NORWAY

Cable Address: "JOHNNY"

WATSON & PHILIP, LTD.

FLOUR IMPORTERS

155 Wallace St., GLASGOW, C. 5

41 Constitution St., LEITH

Esplanade Buildings, DUNDEE

42 Regent Quay, ABERDEEN

Cables: "PHILIP," Dundee

ASBJØRN P. BJØRNSTAD

FLOUR AGENT

OSLO, NORWAY

Reference:

The Northwestern Miller

Cable Address: "ASBJORNSTA"

RIVERSIDE CODE

FIVE LETTER REVISION. ISSUED IN 1923

PER COPY, $12.50 Discount for quantities

For sale by all its branches and by

THE NORTHWESTERN MILLER, MINNEAPOLIS, MINN., U. S. A.

INDEX·OF·ADVERTISERS

"A" series of page numbers used to index advertisements appearing in Section Two of this issue.

Ackels, Arthur, Kansas City, Mo.... 32
Acme-Evans Co., Indianapolis, Ind.. 7
Acme Flour Mills Co., Oklahoma City, Okla. 41
Alberta Pacific Grain Co., Ltd., Winnipeg, Man. 35
Allen, James, & Co. (Belfast), Ltd., Belfast, Ireland 2
Amber Milling Co., Minneapolis..... 2
American Bakers Mach. Co., St. Louis..
American Breddo Corp., Long Island City, N. Y. .....
American Cyanamid & Chemical Corp., New York, N. Y. .....
American Dry Milk Institute, Inc., Chicago .....
American Machine & Foundry Co., New York, N. Y. .....
Ames Harris Neville Co., Portland, Oregon, San Francisco, Cal. 37
Anglo-Continental Trading Co., London, E. C. 3, Eng. .....
Anheuser-Busch, Inc., St. Louis, Mo.....
Appraisal Service Co., Inc., Minneapolis. 12a
Archer-Daniels-Midland Co., Minneapolis 33
Arkansas City (Kansas) Flour Mills Co. 39
Arnold Milling Co., Sterling, Kansas.... 38
Associated Flour Mills Co., Baltimore.. 42
Atkinson Milling Co., Minneapolis..... 7

Baird Brokerage Co., Nashville..... 7
Baltic Co., Copenhagen, Denmark..
Barnett & Record Co., Minneapolis.....
Baur Flour Mills Co., St. Louis, Mo.....
Baxter, A. E., Engineering Co., Buffalo.. 22a
Bay State Milling Co., Winona, Minn.... 6
Beckenbach, Clem L., Kansas City, Mo. 42
Bell, H. M., & Co., London, E. C. 3.....
Bemis Bro. Bag Co., Minneapolis, St. Louis, etc. 16a
Björnstad, Asbjörn P., Oslo, Norway... 43
Black Bros. Flour Mills, Wymore, Neb. 39
Blackburn Milling Co., Omaha, Neb..... 38
Blair Milling Co., Atchison, Kansas..... 39
Blake, J. H., New York, N. Y. 42
Blish Milling Co., Seymour, Ind..... 7
Blodgett, Frank H., Inc., Janesville, Wis. 7
Boonville (Mo.) Mills Co.....
Borden Co., New York .....
Bouwman, E. & W., Rotterdam, Holland
Bowersock M. & P. Co., Lawrence, Kan.. 40
Brey & Sharpless, Philadelphia, Pa..... 42
Broenniman Co., Inc., New York, N. Y.. 42
Brownold, M. S., Co., New York, N. Y...
Brown's Hungarian Corp., New York...
Buckeye Cereal Co., Massillon, Ohio....
Buhler Bros., Inc., New York, N. Y. 15a
Buhler (Kansas) Mill & Elevator Co.... 41
Bulsing & Heslenfeld, Amsterdam.....
Bunge Elevator Corp., Minneapolis..... 33

Cameron, John F., & Co., Aberdeen, Scotland 13
Canadian Bag Co., Ltd., Montreal, Toronto 34
Canadian-Bemis Bag Co., Ltd., Winnipeg, Vancouver 35
Canadian Mill & El. Co., El Reno, Okla..
Cannon Valley Milling Co., Minneapolis. 6
Cape County Milling Co., Jackson, Mo... 40
Capital Flour Mills, Inc., St. Paul, Minn. 6
Cargill, Inc., Minneapolis 33
Carson, Robert, & Co., Ltd., Glasgow.... 43
Cavalier (N. D.) Milling Co.....
Centennial Flouring Mills Co., Seattle... 37
Central Bag & Burlap Co., Chicago, Ill.. 21a
Charlick, Wm., Ltd., Adelaide, Australia
Chatfield & Woods Sack Co., Cincinnati
Checkerboard Elevator Co., St. Louis.... 9
Chelsea Milling Co., Chelsea, Mich..... 43
Chicago & Illinois Midland Railway Co.. 9
Chicago, South Shore & South Bend Railroad, Chicago, Ill. .....
Chickasha (Okla.) Milling Co..... 40
Chubb & Son, New York, N. Y..... 37
Cleveland Flour Mills Co., Cleveland, Ohio 7
Clyde Milling & Elev. Co., Clyde, Kansas 40
Coatsworth & Cooper, Toronto, Can..... 35
Colborne Mfg. Co., Chicago, Ill.....
Coleman, David, Inc., New York..... 42
Collins Flour Mills, Inc., Pendleton, Ore. 37
Colorado Milling & Elevator Co., Denver 4
Columbia Alkali Corp., Barberton, Ohio. 8a
Columbus Laboratories, Chicago, Ill.....
Commander Milling Co., Minneapolis....
Commander-Larabee M. Co., Minneapolis 2
Commercial Milling Co., Detroit, Mich... 43
Consolidated F. M. Co., Wichita, Kansas 41
Continental Grain Co., Kansas City, Mo. 9
Corn Products Sales Co., New York.....
Coventry, Sheppard & Co., London..... 43
Craig, R. Hunter, & Co., Ltd., Glasgow. 43
Crawford & Law, Glasgow, Scotland..... 43
Cream of Wheat Corp., Minneapolis....
Crookston (Minn.) Milling Co..... 7
Crown Milling Co., Minneapolis..... 2
Crown Mills, Portland, Oregon.....
Cuban Import Review, Havana, Cuba...

Davey, Edwin, & Sons, Sydney, N. S. W., Australia .....
Davis, Jacques A., New York..... 42
Davis-Noland-Merrill Grain Co., Kansas City, Mo. 33
Day Co., Minneapolis, Minn..... 23a
De Lisser, Andrew, New York, N. Y.....
De Stefano, Ulysses, New York, N. Y....
Denver Alfalfa Milling & Products Co., Lamar, Colo., St. Louis, Mo..... 42
Deutsch & Sickert Co., Milwaukee, Wis. 42
Diamond Crystal Salt Co., Inc..... 6a
Dickinson, W. V., New York.....
Dixie-Portland Fl. Co., Memphis, Tenn.. 39
Dobry Flour Mills, Inc., Yukon, Okla.... 38
Dominion Flour Mills, Ltd., Montreal... 35
Doughnut Corporation of America, New York, N. Y. .....
Dry Milk Co., New York, N. Y. .....
Duluth Universal Milling Co., Duluth... 6
Dunwoody Institute, Minneapolis.....

Eagle Roller Mill Co., New Ulm, Minn. 2
Eckhart, B. A., Milling Co., Chicago.... 40
Eisenmayer Milling Co., Springfield, Mo. 39
Enns Milling Co., Inman, Kansas..... 41
Esmueller Mill Furnishing Co., St. Louis and Kansas City, Mo. 20a
Evans Milling Co., Indianapolis, Ind.... 7

Fargo Mill Co., Fargo, N. D..... 7
Farquhar Bros., Glasgow, Scotland. 43
Farmers & Merchants Mig. Co., Glencoe, Minn. 2
Farwell & Rhines Co., Watertown, N. Y. 42
Feast, C. E., & Co., London, England... 7
Federal Mill, Inc., Lockport, N. Y..... 42
Fennell, Spence & Co., Liverpool, Eng...
Finger Lakes and Hudson Flour Mills, Inc., Geneva, N. Y. 42
Fisher & Fallgatter, Waupaca, Wis..... 2
Fisher Flouring Mills Co., Seattle, Wash. 37
Fleischmann, Gus, New York City.....
Florellus & Ulateen, A/S, Oslo, Norway.
Forrest, J. A., Co., Minneapolis, Minn... 42
Forster Mfg. Co., Inc., Wichita, Kansas 9a
Fort Garry Flour Mills Co., Ltd., Montreal 35
Fort Morgan (Colo.) Mills.....
Franco, Francis M., New York, N. Y....
Fulton Bag & Cotton Mills, Atlanta, Dallas, New York, New Orleans, St. Louis, Minneapolis, Kansas City, Kan. 22a

Gallatin Valley Milling Co., Belgrade, Mont. 7
Garland Milling Co., Greensburg, Ind.... 7
Garnham, A., & Co., London, England.. 43
General Baking Co., New York, N. Y.... 42
General Mill Equipment Co., Kansas City, Mo. 21a
General Mills, Inc., Minneapolis...Cover 4
Gillespie Bros., Ltd., Sydney, N. S. W... 7
Glasgow Flour Mill Co., Glasgow, Mont.. 7
Globe Milling Co., Watertown, Wis..... 7
Goerz Flour Mills Co., Newton, Kansas.. 41
Gooch Milling & Elevator Co., Lincoln, Neb. 40
Goodhue Mill Co., Minneapolis.....
Grahnm & Co., Kansas City, Mo..... 42
Great Star Flour Mills, Ltd., St. Mary's, Ont. 34
Greenbank, H. J., & Co., New York.....
Grippeling & Verkley, Amsterdam..... 43

Haaky Mfg. Co., St. Paul, Minn..... 15a
Habel, Armbruster & Larsen Co., Chicago, Ill. 42
Haffenberg, James, New York..... 42
Hamilton, Archibald, & Sons, Glasgow..
Hamm, J. M. & C. M., London, England. 43
Hammond Bag & Paper Co., Wellsburg, W. Va. 23a
Hardesty Milling Co., Dover, Ohio..... 40
Harris Bros. & Co., Ltd., London, Eng.. 43
Hart-Bartlett-Sturtevant Grain Co., Inc., Kansas City, Mo. 9
Hart-Carter Co., Minneapolis, Minn..... 20a
Hatenboer & Verhoeff, Rotterdam, Holland .....
Heide, Henry, Inc., New York.....
Hogan Milling Co., Junction City, Kan..
Holland Engraving Co., Kansas City... 39
Horan, Hubert J., Philadelphia, Pa..... 42
Howes, S., Co., Inc., Silver Creek, N. Y.. 15a
Howle, The J. K., Co., Minneapolis..... 21a
Hubbard Milling Co., Mankato, Minn.... 6
Hungarian Flour Mills, Denver, Colo....
Hunter Milling Co., Wellington, Kansas. 30
Hurst, Adolphe, & Co., Inc., New York.. 10a

Igleheart Bros., Inc., Evansville, Ind.
Imbs, J. F., Milling Co., St. Louis.... 39
Ingersoll-Rand, New York.....
Inland Milling Co., Des Moines, Iowa... 41
Innis, Speiden & Co., New York, N. Y... 15a
International Milling Co., Minneapolis.. .....Cover 2
Ismert-Hincke Milling Co., Kansas City, Mo. 40

Jacobson, A. E., Mach. Works, Inc., Minneapolis, Minn. 12a
Jaeger, Frank, Milling Co., Danville (P. O., Astico), Wis. .....
Jas & Van Walbeek, Rotterdam, Holland
Jennison, W. J., Co., Minneapolis..... 6
Jewell, L. R., Kansas City, Mo.....
Jochems & Luchsinger, Amsterdam.....
Johansen, Anth., & Co., Oslo, Norway... 43
Johnson-Herbert & Co., Chicago, Ill..... 42
Jones-Hettelsater Construction Co., Kansas City, Mo. 21a
Joseph, I. S., Co., Inc., Minneapolis..... 42

Kalamazoo Vegetable Parchment Co., Kalamazoo, Mich. .....
Kansas Flour Mills Corp., Kansas City..
Kansas Milling Co., Wichita, Kansas.... 22a
K. B. R. Milling Co., McPherson, Kansas 40
Kelly-Erickson Co., Omaha, Neb..... 42
Kelly Flour Co., Chicago, Ill. .....
Kelly, Wm., Mig. Co., Hutchinson, Kan.. 41
Kent, Percy, Bag Co., Kansas City, Mo.. 21a
Kimpton, W. S., & Sons, Melbourne, Aus.
King, H. H., Flour M. Co., Minneapolis.. 6
King Midas Flour Mills, Minneapolis.... 6
King Milling Co., Lowell, Mich..... 43
Kipp-Kelly, Ltd., Winnipeg, Man..... 35
Knighton, Samuel, & Sons, Inc., New York, N. Y. 42
Koerner, John E., & Co., New Orleans...

La Grange Mills, Red Wing, Minn... 2
Lake of the Woods Milling Co., Ltd., Montreal, Que. 34
Lakeside Milling Co., Ltd., Toronto, Can. 34
Larabee F. M. Co., Kansas City, Mo.....
Lawrenceburg (Ind.) Roller Mills Co.... 7
Lee, H. D., Flour Mills Co., Salina, Kansas 30
Lever Bros. Co., Cambridge, Mass.....
Lexington (Neb.) Mill & Elevator Co.....
Lindsborg (Kansas) Milling & Elev. Co. 39
Löken & Co., A/S, Oslo, Norway..... 43
Long, W. E., Co., Chicago, Ill. .....
Luchsinger, Meura & Co., Amsterdam...
Lund, S., Oslo, Norway.....
Lyon & Greenleaf Co., Ligonier, Ind.... 7
Lysle, J. C., Milling Co., Leavenworth, Kansas 41

McConnell & Reid, Ltd., Glasgow.. 43
McCormick Co., Inc., Pittsburgh...
McCormick S.S. Co., San Francisco..... 32
Madsen, Otto, Copenhagen, Denmark...
Maple Leaf Milling Co., Ltd., Toronto.. 36
Marco Mills, Inc., Joplin, Mo..... 39
Mardorf, Peach & Co., London, England 43
Marsh & McLennan, Minneapolis.....
Marsh & McLennan, Inc., New York.....
Marvik Corp., Pittsburgh, Pa..... 21a
Mason, Fenwick & Lawrence, Washington, D. C. 43
Mayflower Mills, Fort Wayne, Ind..... 7
Meelunie, N.V. Alg. Handel en Industrie Mij., Amsterdam, Holland..... 43
Mennel Milling Co., Toledo, Ohio..... 40
Mercator, A/S, Oslo, Norway.....
Mid-Continent Grain Co., Kansas City, Mo. 9
Mid-Kansas Milling Co., Clay Center, Kansas .....
Midland Flour M. Co., Kansas City, Mo..
Mid-West Laboratories Co., Columbus, O. 20a
Mill Mutual Fire Prevention Bureau, Chicago 12a
Miner-Hilliard M. Co., Wilkes-Barre, Pa. 42
Minneapolis (Minn.) Milling Co.....
Minot Flour Mill Co., Minot, N. D.....
Monsanto Chemical Co., St. Louis, Mo... 7a
Montana Flour Mills Co., Great Falls...
Moore-Lowry Flour Mills Co., Kansas City, Mo. 39
Moore-Seaver Grain Co., Kansas City... 9
Morris, Cliff H., & Co., Inc., New York..
Morrison Milling Co., Denton, Texas.... 38
Morrison, Wm. & Son, Ltd., Glasgow... 43
Moundridge (Kansas) Milling Co..... 40
Mowat Bros., Glasgow .....
Mungo Scott, Ltd., Sydney, N.S.W., Aus.

National Grain Yeast Corp., Belleville, N. J. .....
National Milling Co., Minneapolis..... 2
Nebraska Consolidated Mills Co., Omaha, Neb. 39
Neill, Robert, Ltd., Glasgow, Scotland.. 43
New Century Co., Chicago, Ill. 42
New Era M. Co., Arkansas City, Kansas 39
Newton (Kansas) Milling & Elevator Co.
New Ulm (Minn.) Roller Mill Co..... 2
Noblesville (Ind.) Milling Co..... 7
Norenberg & Beisheim, Oslo, Norway...
Northwestern Elev. & Mill Co., Toledo.. 40
Northwestern Nat. Bank, Minneapolis..
Norton, Willis, Co., Wichita, Kansas.... 30
Nor-Vell Sieve Co., Kansas City, Mo..... 23a
Novadel-Agene Corp. .....Cover 3

Ogilvie Flour Mills Co., Ltd., Montreal, Que. 36
Oliver Mfg. Co., St. Louis, Mo.....
Osieck & Co., Amsterdam, Holland.....

Page, Thomas, Mill Co., Topeka, Kansas 41
Pan-American Trading Co., Kansas City, Mo. .....
Panipius Company, Kansas City, Mo.....
Parrish & Heimbecker, Ltd., Winnipeg..
Paul, Paul & Moore, Minneapolis..... 43
Pearlstone, H. S., New York, N. Y..... 42
Peck Bros., Little Rock, Ark..... 42
Pfeffer Milling Co., Lebanon, Ill..... 40
Pillman & Phillips, London, England... 43
Pillsbury Flour Mills Co., Minneapolis... 1
Pneumatic Process, Inc., Lawrenceburg, Ind. 21a
Pratt, R. C., Toronto, Ont.....
Preston-Shaffer Milling Co., Waitsburg, Wash. 37
Prina, Frank R., Corp., New York.....
Procter & Gamble, Cincinnati, Ohio.....
Puro Gluten Food Co., Inc., New York, N. Y. .....

Quaker Oats Co., St. Joseph, Mo. 3y

Rapid River Milling Co., Rapid City, S. D. .....
Red River Milling Co., Fergus Falls, Minn. .....
Red Star Yeast & Products Co., Milwaukee, Wis. .....
Red Wing (Minn.) Milling Co..... 2
Richardson, James, & Sons, Ltd., Winnipeg, Man. .....
Richmond Mfg. Co., Lockport, N. Y..... 37
Riegel Paper Corp., New York..... 20a
Robin Hood Flour Mills, Ltd., Moose Jaw, Sask. .....
Robinson Milling Co., Salina, Kansas.. 41
Rodney Milling Co., Kansas City, Mo... 40
Ross Milling Co., Ottawa, Kansas..... 40
Russell, D. T., & Baird, Ltd., Glasgow, Scotland .....
Russell-Miller Milling Co., Minneapolis.. 43
Russell Milling Co., Russell, Kansas.... 7
41

St. Joseph (Mo.) Testing Laboratories, Inc. 22a
St. Lawrence Flour Mills Co., Ltd., Montreal, Canada 34
Sauer, N., Milling Co., Cherryvale, Kansas 40
Saxony Mills, St. Louis, Mo..... 41
Scott, Mungo, Ltd., Sydney, N.S.W., Aus.
Security Flour Mills Co., Abilene, Kansas 38
Shellabarger Mills, Salina, Kansas..... 40
Sheridan (Wyo.) Flouring Mills, Inc.... 7
Shevelove, J. J., Newark, N. J..... 42
Short, J. R., Milling Co., Chicago, Ill....
Siebel Institute of Technology, Chicago.
Simonds-Shields-Theis Grain Co., Kansas City, Mo. 33
Sims Milling Co., Inc., Frankfort, Ind.....
Smith, Sidney, Flour, Feed & Grain, Ltd., London, Eng. .....
Smyth, Ross T., & Co., Ltd., London, England .....
Somlyo, Eugene, London, Eng..... 43
Spindler, L. G., New York.....
Springfield (Minn.) Milling Corp..... 7
Stanard-Tilton Milling Co., St. Louis.... 40
Standard Brands, Inc., New York, N. Y..
Standard Milling Co., Chicago, Ill..... 8
Stannard, Collins & Co., London, Eng.. 43
State Mill and Elevator, Grand Forks, N. D. .....
Stratton Grain Co., Milwaukee, Wis.... 9
Strielk, S. R., Co., New York..... 42
Sutton, Steele & Steele, Inc., Dallas, Texas 22a
Swift & Co., Chicago .....

Taylor, Andrew, & Co. (Glasgow), Ltd., Glasgow, Scotland 43
Teicher, Sydney J., New York, N. Y.....
Tennant & Hoyt Co., Lake City, Minn... 2
Thomas, A. Vaughan, London, England.. 43
Thompson, E. S., New York City.....
Tobler, Ernst & Traber, Inc., New York, N. Y. 11a
Tripotto & Renaud Fils Mfg. Co..... 10a

Uhlmann Grain Co., Kansas City, Mo., and Chicago, Ill. 20a
Union Special Machine Co., Chicago, Ill.. 3
Union Steel Products Co., Albion, Mich.....
United Grain Growers, Ltd., Winnipeg, Man. 35
Urban, George, Milling Co., Buffalo..... 42

Valier & Spies Milling Corp., St. Louis, Mo. 41
Van Den Bergh, Gebroeders, Rotterdam.
Van Dusen Harrington Co., Minneapolis and Duluth, Minn. 33
Victor Chemical Works, Chicago, Ill..... 5
Virginia-Carolina Chemical Corp., Richmond, Va. .....
Voigt Milling Co., Grand Rapids, Mich.. 43
Vreeswijk, Gebroeders, Utrecht, Holland

Wabasha (Minn.) Roller Mill Co.. 2
Wall-Rogalsky M. Co., McPherson, Kansas 38
Wallace & Tiernan Co., Inc., Newark, N. J. .....Cover 8
Walnut Creek M. Co., Great Bend, Kan.. 39
Wamego (Kansas) Milling Co..... 39
Wasco Warehouse Milling Co., The Dalles, Oregon 37
Watson & Philip, Ltd., Dundee, Scotland 43
Watson Higgins Milling Co., Grand Rapids, Mich. .....
Weber Flour Mills Co., Salina, Kansas. 10
Wesson Oil & Snowdrift Sales Co., Chicago, Ill. .....
Western Assurance Co., Toronto, Ont.... 37
Western Canada F. M. Co., Ltd., Toronto 35
Western Flour Mills, Davenport, Iowa.. 2
Western Milling Co., Pendleton, Oregon. 37
Western Star Mill Co., Salina, Kansas..
Western Terminal Elevator Co., Hutchinson, Kansas 9
White, Harry E., Co., New York, N. Y...
Whitewater (Kansas) Flour Mills Co.... 40
Wichita (Kansas) Flour Mills Co..... 38
Williams Bros. Co., Kent, Ohio..... 40
Williamson & Williamson, Minneapolis.. 32
Wisconsin Milling Co., Menomonie, Wis.. 7
Witsenburg, M., Jr., Amsterdam..... 43
Wolf Milling Co., Ellinwood, Kansas.... 38
Woods Mfg. Co., Ltd., Montreal, Que.... 36

Zelony Thermometer Company, Chicago, Illinois 21a

Mr. Kipling: WE BEG TO DIFFER

Ardent believers in democracy, we still don't agree that "the Colonel's Lady an' Judy O'Grady are sisters under their skins." ✧ Novadel cannot conceal the inferiority of a poor wheat or inadequate milling.

AGENE FOR MATURING

But—long experience has proved that Novadel, as an essential milling process, can and does lift the mask of high color from a quality flour, to disclose an intrinsic beauty of brilliant whiteness.

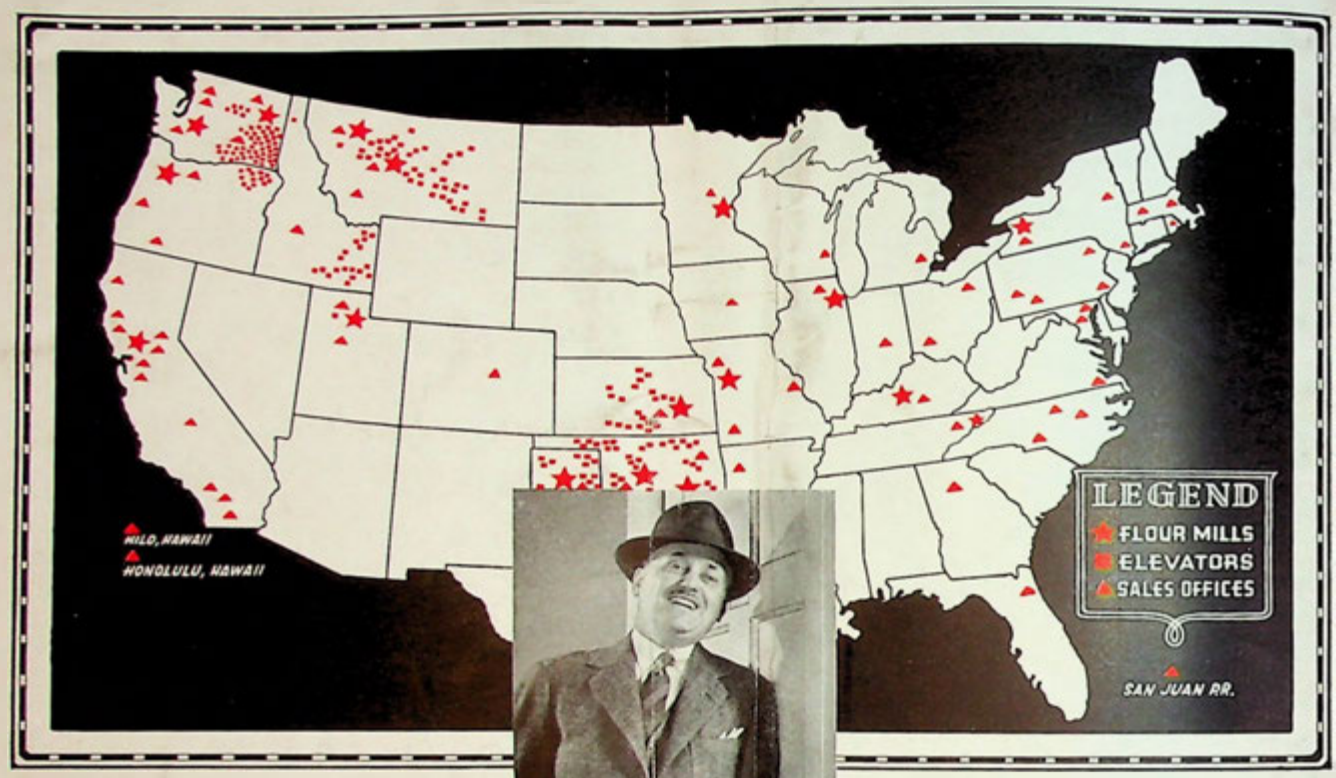
NOVADEL FOR COLOR

NOVADEL-AGENE

NA-61

AGENTS: WALLACE & TIERNAN CO. INC. • • NEWARK, NEW JERSEY

To serve you better!



THERE is one great reason why General Mills, Inc., was formed in 1928 as a *national* milling institution:

To provide the resources and the facilities to serve its customers better, in every practicable way.

The fact that this company *is* nation-wide, with greater ability to render valuable service, means much to every individual baker, large or small.

For instance: because General Mills can economically draw choice wheats not merely from one milling locality, but *from every harvesting area in the United States*, its products are never the victims of crop variations. Far-flung mills and elevators, strategically placed in 15 states, serve as a guarantee to bakers that General Mills flours will always represent the cream of the U. S. wheat crop . . . will be absolutely uniform in baking characteristics, not only from month to month but from year to year.

Another "for instance": because of its great resources, General Mills is able to conduct yearly wheat research *right from the field at harvest time*. This survey assures our ability to choose the finest wheats from any given crop area. To you, this means top quality and assured shop performance always, when you use General Mills flours.

And more: the economies and advantages of mixed car shipments are always available when you deal with General Mills. For this company renders a *complete* flour service; mills nearly every conceivable type of flour to suit every shop requirement.

For these reasons, General Mills is nation-wide. To serve you better. For assurance of maximum flour quality and uniformity, for greatest economy in the long run, consult your General Mills representative. Discover the practical truth of the statement "He Offers More."

GENERAL MILLS, INC. PRODUCTS CONTROL DEPARTMENT

Trade Names:

El Reno (Okla.) Mill & Elevator Co.
General Mills, Inc. Southeastern Bakery Sales Office, Atlanta, Georgia
Great West Mill & Elevator Company, Amarillo, Texas
Kell Mill & Elevator Company, Vernon, Texas
Oklahoma City (Okla.) Mill & Elevator Co.
Perry (Okla.) Mill & Elevator Company
Red Star Milling Company, Wichita, Kansas
Royal Milling Company, Great Falls, Mont.
Sperry Flour Company, San Francisco, Calif.
Washburn Crosby Co., Buffalo, N. Y.
Washburn Crosby Company, Chicago, Ill.
Wichita Mill & Elevator Company, Wichita Falls, Tex.

MILLING PRODUCTION SECTION

The Northwestern Miller

Volume 200 | In Two Sections | DECEMBER 13, 1939 | Section Two | Number 8

Production Highlights

SPECIES EXTINCT.—Used and reused flour bags, often so lively with infestation as to be called animate, may eventually be classified as "species extinct." The Textile Bag Salvage Association, formed recently in Chicago by prominent bag companies, will try for a year a plan which contemplates buying and reconditioning used bags from bakers and selling these to other markets. A non-profit enterprise, higher salvage prices will be reflected in the amount paid bakers for the bags.

LOST: $7,500,000.—Dr. David J. Price, government engineer, stated recently that dust explosions in grain elevators since 1930 have cost more than seven and a half million dollars, plus many lives. These explosions represented about 36% of all those in the industry, he said, making it apparent that many present preventative measures are inadequate.

SEWING NOTE.—The West Indies has now become allied with those who favor the neatness of machine sewing. The flour trade there has recently told Canadian millers that hand sewn bags of flour will not be acceptable.

NON-ABSORBENT.—Nine years of research gave the Eastman Kodak Co. an unglazed tile with an absorption of only 3%. Used successfully in recent construction by the camera people, the tile has been adopted for the walls of the nine-story cereal plant being built in Buffalo by General Mills, Inc.

SUBTRACTION; ADDITION. — A southwestern milling concern has entered the market with a germ flour produced by removing the germ, extracting surplus oil, then reducing the germ proper and blending it with flour to make a white flour having a germ percentage equal to that of the original wheat.

GOOD COMPANIONS.—It is hoped that added shortly to the long list of such eatables as apple pie and cheese and ham 'n' eggs will be tea and bread. Four large baking companies are starting a nation-wide promotional advertising program in collaboration with tea producers and cheese processors (cheese makes a delightful third.)

REPEATER.—The Kansas City night milling school, sponsored by District 2, A.O.M., will start again Feb. 7 with a program that differs from that used in previous years. Instead of the usual hard-working regular instructor, each class will feature a different speaker who will choose his own subject.

FLOUR BOMBS.—A novel use for flour was found during recent New York National Guard maneuvers. Half-pound paper sacks filled with flour were used to strafe ground troops. The ammunition left its mark as proof of the bombers' accuracy.

FROM THE ARCHITECT'S PLANS

The architect's drawing of the new mill now under construction for Centennial Flouring Mills Co. at Spokane, Wash., was published in our May issue, and here is a view as the camera sees it. In November, when this photo was taken, construction work on the buildings was almost completed. Machinery, being supplied by Allis-Chalmers Mfg. Co., Milwaukee, will go in soon. The plant is designed to house two 1,500-bbl units, only one of which is being installed at present.

IN THIS ISSUE:

Basis of Bread 2a
Ash in a New Role? 4a
Breaking—Grading—Flouring 6a
"Science" and the Small Mill 8a
Flour and the Wholesale Baker 11a
Clean, Dry Steam Pays 12a
Rambling in the Buckeye State 14a
Lessons in Practical Milling—No. 36 ..... 17a

THAT bread has been one of the most important foods for mankind since ancient times is attested by expressions such as "bread of life"; "bread is the staff of life"; "man shall not live by bread alone"; and "give us this day our daily bread." These expressions are found in the oldest folk lore and in the world's oldest literature, and they bear eloquent testimony to the esteem in which bread has been held as one of the most important foods.

From the energy standpoint, wheat bread easily occupies the first place among the food items of the white race. Wheat is the world's biggest food grain, with an annual production of between five and six billion bushels. The grains next in magnitude are corn and rice, each with an annual production of over four billion bushels. In some countries, such as France, wheat furnishes about half the energy of the ration. In the United States, because so many other foods are available, wheat furnishes from one fourth to one third of the energy (Taylor, A. E.). Most of the wheat flour is used for making light bread but it serves in the preparation of more other items on the menu than any other food material.

Wheat bread also furnishes a considerable portion of the protein in the diet. If the average per capita consumption of flour is 160 lbs per year, this would mean about 200 grams of flour per day, and at 10% protein, the intake of this food principle would be 20 grams. The daily protein requirement for adults is estimated at 75 to 100 grams. On this basis, wheat flour furnishes not less than one fifth to a little over one fourth of the total protein in the average diet. It is not so much the amount of protein, but its characteristics that makes wheat flour so important.

Wheat has attained this position of preeminence among the world's food grains largely because of the peculiar characteristics of its protein, which makes possible the baking of light bread. When water is added to and mixed with flour, gluten is formed from the protein. There has been considerable academic discussion as to whether gluten pre-exists in the flour or is formed only when water is incorporated, but this need not be settled here, since what we are interested in is the nature of this gluten which gives the dough its peculiar characteristics.

The most distinctive property of this dough is its ability to retain gas that is liberated either by yeast or sodium carbonate, and thus forms a porous or spongy structure. When this structure is heated in an oven it becomes solidified into the well known light bread. The distinctive property of bread which has made it such a universally relished food

C. O. Swanson, author of the accompanying article, recently retired as active head of the Department of Milling Industry, Kansas State College, to devote more of his time to writing and research.

is a porous structure composed of a mass of small, thin walled cells. Such a structure gives a large surface for the action of taste and of the digestive juices. It also makes bread a suitable vehicle for other foods, such as butter and jams. These foods are of value because of their energy content and flavor, but by themselves they lack the property of good eatability. This fault is overcome when they are taken together with bread. This characteristic of bread has stimulated the development of the extensive sandwich industry. But for this development, the per capita consumption of flour in the United States would no doubt be much lower than it is now.

As soon as water is added to flour, a film which is impervious to water forms at the boundary or interface between flour and water. This can easily be demonstrated by making a hole in flour and filling it with water. Because this film limits the penetration of water, mechanical action is needed in forming a dough. The mechanical action bends and breaks this film and allows the water to make new contacts, and in so doing forms more films. A well mixed dough consists of a mass of these films folded and refolded until all starch granules and protein particles have made contact with the water.

While there are several substances in flour, by far the larger mass consists of starch granules and protein particles. A part of the water used in dough formation makes contact with the protein particles and thus forms the gluten. About an equal part of the water is adsorbed on, or wets, the starch granules. A relatively smaller part of the water is in the so-called free condition. This part of the water has the most to do with dough consistency.

An average dough formula and composition of flour is shown in Table I.

Table I. Dough Formula and Composition of Flour

DOUGH FORMULA	Grams	COMPOSITION OF FLOUR	Per cent
Flour	100	Moisture	13.5
Water	60	Starch	70.0
Sugar	5	Fat	1.0
Shortening	3	Protein	11.0
Salt	2	Ash	0.4
Yeast	3		
	173		

The three grams of yeast will contain near 1.5 grams of water. This, plus the 13.5 grams of water present in the hundred grams of flour plus the 60 grams added in making the dough, will make the total water present 75 grams. On the basis of this and the above figures, the amounts of constituents and their percentages in the dough are as shown in Table II.

Table II. Grams of Constituents and Their Percentages in Dough

	Grams	Percentages
Water	75	43.35
Starch	70	40.46
Sugar	5	2.89
Protein	11	6.36
Fat	4	2.47
Salt and ash	2.4	1.39
	167.4	96.92

The differences between the 167.4 and the 173 total grams used in making the dough would be made up of the dry matter in the yeast and the cellulose and other compounds present in the flour but which do not need to be considered here. The interesting fact that water is present in a larger percentage amount than any other constituent should be noted. Since absorption varies on both sides of 60, we may say that the percentage of water in dough usually ranges between 40 and 45%. Starch is by far the next largest constituent. The protein is only one sixth or one seventh as much as the water or the starch.

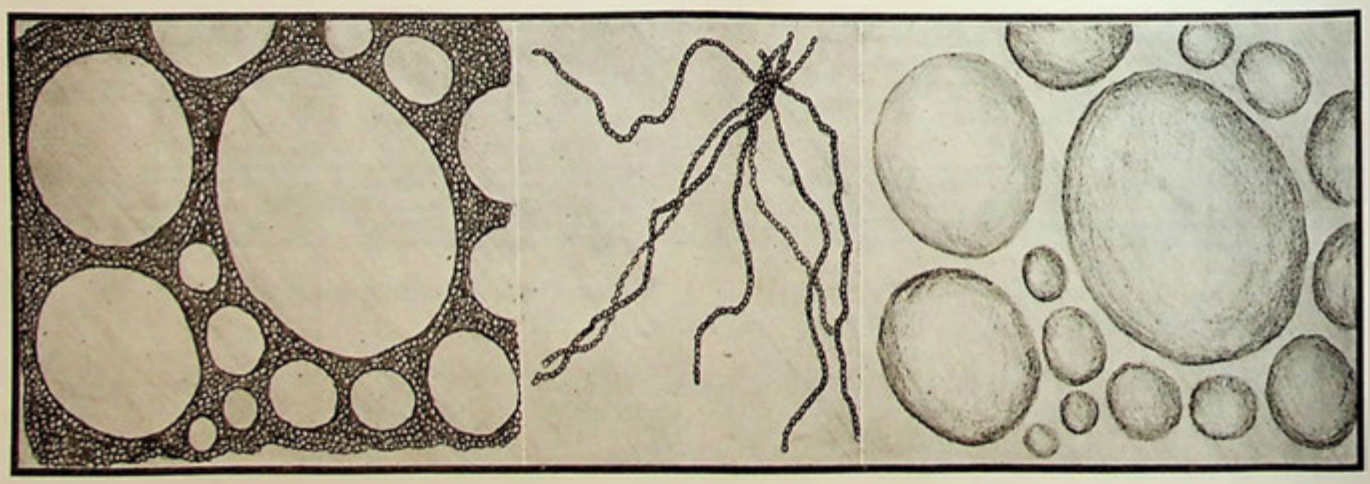
When dough is washed in water so as to obtain gluten, about 85% of the protein goes into the gluten and the other 15% is lost in the wash water. The gluten obtained by washing dough is known as wet gluten. If this is carefully dried, about two thirds of the weight will pass off as water. If this dried gluten is analyzed it will be found that the protein content is about 85%. The other 15% consists of mostly starch, cellulose, fat and oils, all of which are so firmly enmeshed or entangled in the gluten wad that they cannot be removed by washing with water. Thus the protein lost in the washing process is about balanced by the nonprotein material in gluten, and for this reason there is a close correlation between the percentages for protein in flour and the percentages for dry gluten. Because of this relationship, millers and bakers determined the amount of dry gluten in estimating the strength of flour before the chemical method of the protein determination was perfected.

If 85% of the 6.36% of protein in the dough (Table II) forms pure gluten, then the percentage of pure gluten in the dough is near 5.4, or less than one seventh as much as the starch. This emphasizes the relatively small mass of pure gluten in the dough, but this small mass gives to the dough its distinctive properties and determines the quality of the resulting bread.

In the above dough the percentage of starch is 36 times as great as the protein and 7.5 times as great as the pure gluten. The protein, however, probably holds about the same amount of water as the starch. No exact measurements are available, but an approximate calculation can be made on the basis of the amount of water held by the wet gluten washed from flour. Numerous laboratory tests have shown that the weight of the wet gluten will closely average three times that of dry gluten, and in gluten from strong flour the amount of water is a little more than this.

Thus the total wet gluten that would be obtained from the above dough can be estimated to weigh 36 grams; and since the weight of protein would be 11 grams, the weight of the dry crude gluten would also be near 11 grams. On this basis, the weight of the water held by the wet gluten would be 25 grams, or one third of the total 75 grams of water in the dough. This means that the gluten holds several times its own weight of water. The starch on the other hand holds considerable less water than its own weight. In the dough represented in Table I, the weight of starch is 70 grams, and the water 75 grams, 25 of which are apparently held by the gluten. The nearly 1% of protein material removed in the washing process would also hold considerable water. If this has a water holding capacity equal to that of the gluten obtained by washing, then the total water held by the protein in the dough would be near 39% of all that is present.

We have no equally good basis for estimating the amount of water held by the starch, but Alsberg (1927) quotes figures which show that the starch and the gluten each hold about equal amounts of water. On this assumption, the starch would



At the left greatly enlarged wheat starch granules in a dry state are shown. In the center, the probable structure of wet gluten is indicated, the black representing water film adsorbed on the surfaces of gluten chains. The starch-gluten-water plume is illustrated at the right. Here, black represents water adsorbed on starch granules and gluten chains as well as water that is free. The amount of free water determines the consistency of the dough.

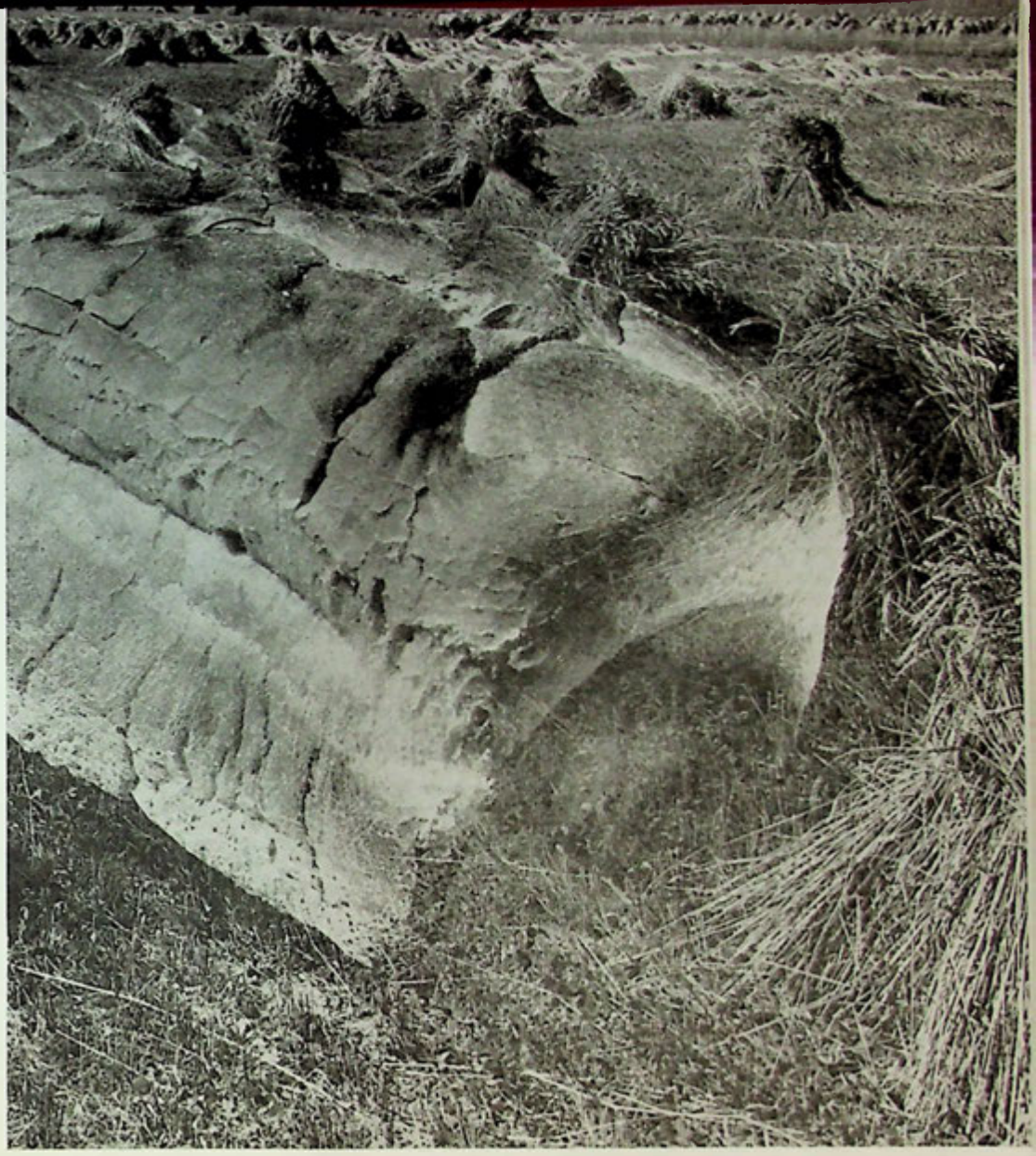
basis of bread

★ ★ ★

By C. O. SWANSON

C. O. Swanson, internationally known authority in the field of milling physics and chemistry, begins on the opposite page the first of a series of articles which will deal explicitly with wheats and wheat flours from the standpoint of their interest to practical millers and mill managers. As readers of THE NORTHWESTERN MILLER and MILLING PRODUCTION know, Dr. Swanson is eminently qualified to do this. In recent years, many outstanding articles have appeared in these journals under his name; our publications are again honored in that "Basis of Bread," and its related chapters, will appear exclusively on their pages.

★ ★ ★



hold 39% of the 75 grams in this dough, or 29.25 grams, and if the protein holds an equal amount, there would be 16.5 grams water which has varying degrees of freedom. It is in this free water that the salt, sugar and other yeast foods are dissolved. This smaller amount of water, a little more than one fifth of the total, has the most to do with the consistency—that is, the stiffness or slackness of the dough—than the other four fifths which is held by the protein and the starch. This is the reason a small variation in the per cent of absorption has such a large effect on dough consistency and consequent behavior in baking. The importance of this free water in dough will be referred to again.

The starch in flour, and in dough as well, exists in the form of spheroidal granules whose diameters vary from a few microns to as much as 20 to 25. The average diameter may be estimated at five microns, or one five thousandth of an inch (one micron being one 25,000th of an inch). The configuration of particles of this size can easily be seen under the ordinary microscope. The configuration of the protein particles, however, cannot be seen with this instrument and hence what is said about the configuration of the protein particles is based on theory.

The probable structure of the protein particles is either that of folded peptide chains or a nucleus from which extend numerous streamers in the form of coiled springs. It is possible that both kinds exist. Although the protein particles or molecules are too small to be seen under the microscope, they are very large compared with the water molecules which are among the smallest in existence. As has already been stated, one of the most characteristic properties of flour is that it is wetted by water. The small water molecules are adsorbed on the surfaces of the relatively large starch granules and on the large but smaller protein particles. Because of the forms or configuration of the latter they can hold the large amounts of water in comparison with the spheroidal forms of the starch granules. The water holding power of these protein or gluten particles would be somewhat similar to that of a wad of cotton, which holds a large amount of water compared to an equal volume of fine sand.

The layers of water molecules next to or close to the surfaces of the starch granules are held rather firmly, while those further away have more and more freedom. The varying degrees of freedom by which water is held on a wetted surface can be shown by pouring a small amount of water on a clean glass plate. If the glass surface is absolutely clean, the water will spread as a film over the entire surface. If the plate is tilted slightly, most of the water will run off, but the whole surface will remain covered with a thin film of water no matter in what position the plate is held. A careful examination of the film will show that the water in the outer surface has considerable freedom to move, while that next to the glass has no freedom but is held fast to the glass surface. Between these two extremes, there are varying degrees of freedom, from none next to the glass surface to the freedom in the outer layers, where it is nearly the same as in an ordinary water surface. In a somewhat similar fashion, the layers of water molecules adsorbed on the starch granules and on the protein particles have varying degrees of freedom.

The estimate already given for the amount of water in the free condition can be only an approximation, because there is no absolute line of demarkation between the free and the adsorbed water. It is the free water, however, which gives mobility as well as its distinctive properties to the dough.

Literature Cited

Taylor, A. E. "The Place of Wheat in the Diet." Wheat Studies, Vol. 5, No. 4. Food Research Institute.
Alsberg, C. L. 1927. "Starch in Flour." Cereal Chemistry 4:485-492.

Packaging Today

OTHER than the change in the containers themselves, namely, from wooden barrels to various types of sacks, the outstanding alteration that has taken place in flour packaging in recent years has been in the size of the containers. When bags were first introduced as flour packages, the 98-lb size was the commonly accepted one. It still is in wide usage, particularly for flour sold to bakers, but is no longer the accepted size in the family trade. Much smaller units, even those of only several pounds in weight, are now in demand by the latter.

The primary reason for this is the change in the style of American living. The average urban dweller lives in a small apartment, where there is no room for storing bulky commodities. The housewife goes shopping daily, and there is no longer any necessity of her laying in large supplies of foods. Even her rural sister is in almost daily touch with sources of supply, and while the latter continues to buy flour in larger units

(Continued on page 33a.)

ASH in a NEW ROLE?

By Edgar S. Miller

TO those who come under the influence of that old autocrat, the "Tin God Ash," such totalitarianistic principles as those with which he rules in the realm of flour quality have frequently fed revolutionary fires. Here's a suggestion for the application of a purely democratic idea to aid the situation. By it, flour constituents are given a voice in affairs through their very capable representative, Protein.

ALTHOUGH documentary proof is not available at the moment, no one is likely to question the accuracy of an estimate indicating that the number of words printed during the past quarter of a century in discussion of the "ash test" and its usefulness in the evaluation of flours does not fall far short of a million. This is a sizable figure, but it does not tell the complete story, at that; for if all that has been said by word of mouth, at millers' meetings and elsewhere, had been set down in writing, it isn't improbable that the printed literature on the subject could easily be doubled. Yet the matter has not been settled to the satisfaction of even a majority of those concerned, but quite the contrary.

It seems plain enough at this time that the "tin god, Ash," has not been dethroned, notwithstanding that an insurrection of no little magnitude has been directed toward that end in the three or four years last passed. Buyers continue to specify maximum ash content when purchases are made, and operative millers continue to worry and voice the absolute conviction that the ash content of a flour simply doesn't mean a thing. Nevertheless, few of them can refrain from boasting a little when they can do so truthfully (and possibly upon other occasions also) about the "ash figures" of their flours. Curiously, these figures appear to be meaningless only when they are high; never when they are low.

In so far as the substances composing the ash yielded by wheat flour upon burning are concerned, the quantities are too small to be of any great significance. In fact, experiments have repeatedly been made in which ash derived from flour was added to other flour in large amounts previous to baking, with no noticeable deterioration in loaf quality except a slight grayish discoloration. The statement to the effect that "a few points in ash one way or the other makes no difference" is no doubt strictly true. In the strictest sense it must be true, of course, for flour does not contain ash; it contains, rather, mineral substances which will remain as residue when flour is burned under carefully controlled conditions.

This statement is not made in an attempt to confuse the issue, however. The issue is already sufficiently confused. We have come to speak of the "ash content" of a flour rather than of the mineral content, and "0.41%"—or "41 points"—ash is a well understood term. Probably, "ashing" is the only practical way of measuring the contained minerals, and no fault is found with this method of computation.

As everyone whose interests are concerned with the production and sale of flour should know, the theory of the ash determination promulgated several years ago was not concerned with the ash, as such, but with the quantity of non-endosperm matter represented by the ash. It is known positively that the skins of wheat berries will yield a much higher percentage of their own weight as ash than will endosperms. The ratio may not be absolute or constant, but there is no doubt that the ash percentage of bran powder is at least 20 times as great as that of endosperm, while its protein is only about 1.4 times as high. It is self-evident, therefore, that a little bran powder goes a long way toward increasing the ash content of flour but does comparatively little toward increasing the protein and nothing whatsoever to contribute to the quantity of contained gluten.

Generally, if not universally, the ash contents of the purest flours obtained from the various wheats of commerce increase as the protein contents of the wheats increase. It has been assumed that this proves the mineral contents of the endosperms of high-protein wheats higher than those of the endosperms of low-protein wheats, but there is a possibility that it does not; for the higher ash of the purest flour made from a hard, strong wheat *may* be due to the presence of bran particles. We have no practical method of measuring the quantity of bran particles present in a reasonably pure flour other than the ash test. There is no occasion for arguing the point here, however, but this much is certain: when a small amount of bran powder, which has a protein (not gluten) content about 1.4 times as high as that of the flour, is incorporated in the flour, the ash is raised out of all proportion to the increase of protein. This is graphically shown in the chart accompanying this article.

The facts being what they are, the practical miller can, if he will, use both the ash and protein figures to excellent advantage in controlling his mill and ascertaining the true value of his various flour streams. The procedure may or may not be applicable in full degree to the evaluation of flours made by different mills from different wheats, but if "ash" means anything at all, standing alone, the "index figures" obtained in appraising the value of individual flour streams of the milling process by an "ash-protein-ratio" method should be of a great deal more significance in any case.

It is no doubt well known that neither the skins nor the germs of wheat berries contain even a trace of gluten. This substance—or the makings of it—resides in the endosperms. We millers used to wash the starch from flour for the purpose of obtaining a lump of something we called "gluten," and there are still many who prefer this to the procedure that has largely superseded it—the estimation of contained proteins by the well-known formula, N×5.7, or derived nitrogen multiplied by 5.7. Of course all proteins can be made to yield nitrogen, so the protein percentage of flour based upon the amount of nitrogen it will yield does not necessarily represent its percentage of gluten. Any bran powder present—and some of us doubt that even the purest flour is entirely free from it—will contribute nitrogen which will show up as protein.

Those American millers who favor the gluten test over the protein estimation (for flour) do so mostly upon the grounds that the first mentioned reveals something about the quality of the gluten. This the protein figure cannot do, for there is nothing in the process through which nitrogen is derived from flour or wheat to indicate what part of it is contributed by bran and what part by endosperm. As a quantitative proposition, the protein percentage probably comes nearer the actual amount of gluten than does the weight of washed-and-dried gluten, for it is practically impossible to free a ball of crude gluten from starch and fats completely.

Thus the protein figure alone reveals nothing of the true nature of the gluten of flour. It reveals nothing of the nature of the proteins it represents. "Gluten quality" is more than a little difficult to ascertain, or even judge, of course, since it is dependent largely upon the inherent characteristics of the wheat from which it was derived, and no one expects either the ash or the protein percentage to shed any light on the problem. This fact should not be overlooked, however: since the protein figure of a flour represents both gluten and nongluten proteins (the latter derived from the bran) while the ash figure offers excellent means for estimating the amount of bran present in the flour, something about the nature of the flour proteins can be learned by the use of the simple formula, *protein divided by ash.* The quotient may be taken as an "index number" of quality in so far as the quality of a flour's gluten is affected by the presence of the nongluten proteins of bran powder.

As an example, here are the protein and ash figures of two hard wheat flours intended for the commercial baking of yeast breads. No. 1 carries 0.405 ash and 11.10 protein, while analyses of No. 2 indicate 0.442 ash and 11.10 protein. Which is the more suitable for the purpose intended? After you have made a guess or formed judgment, if you care to do either, try estimating the probable value of each flour by using the formula. Divide the protein, 11.10, of No. 1 by its ash, 0.405. The "index figure" obtained is 27.40. Now try No. 2. Divide its protein, 11.10, by its ash, 0.442. The figure obtained is 25.11.

No guaranty is offered here that Flour No. 1 is superior to Flour No. 2. Factors not revealed by this method of estimation may make the "quality index" figures meaningless. Yet there is room for reasonable doubt that this would ever be found wholly true in practice.

INDEX NUMBER TABLE

HARD WHEAT

$$\frac{\text{Protein}}{\text{Ash}} = \text{"Index Number"}$$

Flour Stream	Ash, %	Protein %	Index Number
1st brk	0.50	10.60	21.20
2d brk	0.46	10.93	23.80
3d brk	0.49	13.00	26.52
4th brk	0.50	13.60	27.22
5th brk	0.64	14.10	22.10
1st Siz	0.36	9.80	27.50
1st Midds	0.34	10.45	30.87
2nd Midds	0.345	10.65	30.92
3d Midds	0.35	11.25	32.18
4th Midds	0.41	11.87	29.00
5th Midds	0.40	11.51	28.80
6th Midds	0.46	12.03	26.22
7th Midds	0.48	12.10	25.22
8th Midds	0.55	13.62	24.80
1st L.G.	0.62	12.10	19.52
2d L.G.	0.655	12.03	18.40
Brk Dusting	0.49	12.85	26.10
2d Quality	0.41	11.41	27.94
Feed duster fls	0.71	13.08	18.40
Tail end reels	0.69	13.20	19.12

(Figures are approximations)

There is no way to avoid the fact that a low index figure *indicates* a high percentage of bran powder in flour, although it may be that this indication is greatly significant only when the flours considered are from identical, or at least closely similar, wheat. Taken by itself, the index number obtained by dividing protein by ash cannot be applied to bread flours and flours intended for the making of crackers, biscuits, cakes, etc., in a comparative manner, for it can scarcely be said that a soft wheat flour with ash and protein 0.31% and 7.5% respectively, giving an index number of about 24.20, is inferior to the hard wheat flours examined in an earlier paragraph.

This does not disprove the theory that a high ratio of ash to protein strongly indicates the inclusion of a correspondingly high percentage of bran powder in any flour, for in milling either soft wheat or hard it is desirable to keep bran powder out of the flour sack. With respect to the control of the milling process, the "index figures" of individual flour streams are of very high value. For the most part, the inherent characteristics of the wheats which make up his mill-mix are beyond the control of the operative miller. He cannot, however, dodge the responsibility of making the most nearly perfect separations of endosperm and bran that his facilities permit, and he cannot know whether or not he is doing so unless he takes the trouble to find out. It has been said before that a mill cannot be operated successfully with a lead pencil, but the miller who would try to get along without one today would also find the going rather difficult.

No great amount of mathematical skill is required of the miller who would know how well he is doing his job by keeping tab on his flour streams. He will need frequent and accurate analyses of these streams, but he cannot make them himself so he need not worry about the mathematics involved in making them. They will be adequately taken care of by a competent chemist, either in the mill laboratory or in one operated on a commercial basis. The formula to be used has already been given, and the accompanying tabulations setting forth the results of investigations in a practical mill should at least be interesting.

Grouping the first to fifth midds flours with that of the sizings, a "short patent" running approximately 70% of the total flour produced is obtained. The index figure of this 70% patent will be close to 30.50. There is no flour stream other than those included in this patent which has an index number as high as 28.00.

It may be submitted that a "longer" patent is preferred by many for the baking of yeast breads, the contention being that such a flour is "stronger." This may easily be true, for it is a fact that cannot well be considered here because of limited space that a not inconsiderable amount of gluten protein is scalped off the head middlings reductions and sent too far down the line to allow it to be included in the short patent. The cause of this is the tendency of reduction rolls to form composite flakes of bran particles and endosperm proteins. Some of these flakes are disintegrated by the tailings and latter middlings rolls, and there is no doubt that the product of disintegration contains a high percentage of gluten proteins. It is quite impossible, however, to separate these from the branny fiber and the particles of lacerated germs, and when flour streams with a relatively low index number contain slightly more gluten than the short patent, they will also contain considerably more of substances, borne by bran and germ, that are to some extent detrimental to baking qualities. If this were not so, discriminating buyers would not pay more for "strong" patent than for straights and clears with an equal or greater percentage of protein.

With respect to flours intended for the making of yeast breads, the required amount of gluten will depend somewhat upon the baking methods used. Assuming that the protein figure for a well-milled patent approximates the gluten percentage, and supposing that a certain method calls for gluten in the amount of 11.1%, nothing is more certain than the fact that a patent with 11.1% protein and 0.40% ash will be worth more to the user than a straight with 11.1% protein and 0.44% ash.

This does not imply that protein, or gluten, in the amount of 11.1% is required for the baking of acceptable bread. The figure may be considerably lower and still fulfill the requirements of the commercial baker or the housewife. Nevertheless, if it is 10.0% instead of 11.1%, a patent with that percentage of protein and 0.31% ash will still be superior to a straight with 10.0% protein and 0.40% ash. The "index number" in the first instance would be 29.40, while that of the straight flour will drop to approximately 25.00.

It will be understood that the ash-protein ratio formula was devised for the guidance of the practical miller in controlling the operations included in the milling process. It is as applicable to the mill producing flours for cracker, biscuits, cakes, et cetera, as it is to the plant milling flours for commercial bakeries, notwithstanding that the desirable gluten content may be in the neighborhood of 8% in the one case and 11% in the other.

Some interesting figures from flour streams of a 200-bbl soft wheat mill were given recently by H. M. Simmons, of Mid-West Laboratories, Columbus, Ohio, at a meeting of District No. 3, Association of Operative Millers. The products of this plant would be classified as flours suitable for the baking of crackers, biscuits, and cakes. Two crop years are represented:

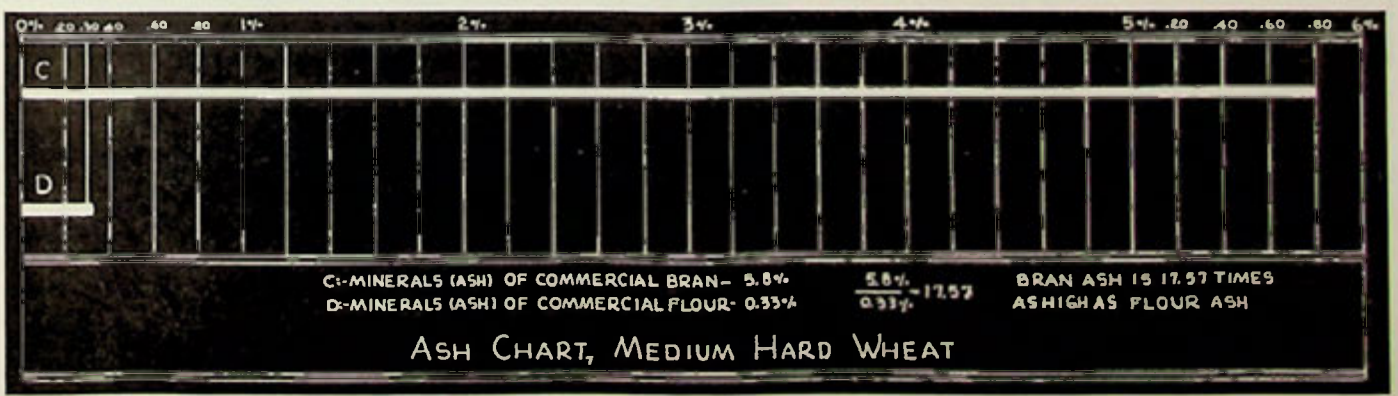
The averages for the four streams are given by the author as follows: For 1938, Ash, .31%; Protein, 7.01%. The corresponding index number is 22.60. For 1939, the averages were, Ash, .341%; Protein, 8.17%, representing an index number of 24.72.

It is not suggested that the 1939 flour, with an index number of 24.72, is a "better" flour than that made in 1938 with an index number of 22.60. Mr. Simmons inferred otherwise when he said: "Briefly, to summarize the crop [1939], we find the protein higher and the ash also slightly higher. The general working qualities are not much different from last year, with not a great deal of change in the working qualities of the special flours—with the probable exception of the cake flours, which will require more attention than last year."

Since the report advises that the wheat from which the 1939 flours were made carried a considerably higher percentage of protein than the 1938 crop, it may well be concluded that the 1939 flours are a little too "strong" for the character of baked goods they are intended to produce. This must always be a consideration with any type of flour. There is always the possibility, too, that the inherent na-

INDEX NUMBER TABLE
SOFT WHEAT

Flour Stream—	Ash	Protein	Index Number
1938			
1st Midds	.30	7.2	24.00
2d Midds	.31	7.25	23.70
2d Brk	.31	6.8	21.86
3d Brk	.32	6.8	21.21
1939			
1st Midds	.31	8.0	25.60
2d Midds	.35	8.9	25.22
2d Brk	.31	7.5	24.17
3d Brk	.40	8.3	20.68



ture of endosperm proteins will adversely affect the baking qualities of flours of every degree of "strength." The ash-protein ratio formula cannot reveal this, of course. It is not a "gluten quality" index, but it does indicate in a large degree the quality of the flour porteins which are represented by the formula, NX5.7. The quality of the gluten of a flour may not be satisfactory, or there may be too much or too little gluten present to meet baking requirements: but in any case, the contained gluten is more desirable than are the nongluten proteins revealed in flours by an increase in the ash figure out of all proportion to the nitrogen they yield.

Breaking—Grading—Flouring

By Julius Jurkow

Superintendent, Sheridan (Wyo.) Flouring Mills

SINCE the efficiency of both purifiers and reduction rolls is greatly enhanced by providing feeds which are practically free of flour and limited by particle size to individual machines, it is first of all necessary that the stock having passed through the scalping wires of the break sections be thoroughly dusted and divided into several size groups. This is accomplished by grading sieves of proper mesh size, the throughs of the finest of them passing onto the flour sieves, through which a portion of the break flour is removed. Break sifters being largely made up of scalping and grading sieves, there is usually insufficient room left for accommodating more flour sieves than are capable of removing a part of the break flour. For the purpose of separating the remaining flour from the fine middlings, special redust sifter sections are therefore provided.

The redust flour is composed in part of attrition dust contributed by the friction of the sharp stock particles in passing through spouts and over the scalping and grading wires, which accounts for the granular nature and generally poor color of this flour stream. To the redust sections further falls the task of separating from the middlings the fine material which is next to the flour in granulation, and which is called "dustings" or "break-dunst." This stock, usually drawn off through 9xx, is of such a nature that passing it through a purifier will not improve its milling quality; it is, therefore, sent directly to some reduction rolls, usually the third or fourth middlings. It is one of the most difficult stocks to handle properly, and where the amount of stock is sufficient it should be ground by itself on separate rolls.

The first installment of this two-part article appeared in November

With the break flour and dunst removed from them, the middlings still comprise an array of sizes ranging from the equivalent of the aperture of 18 wire down to that of the 9xx. It would be useless to try to do a worthwhile job of purifying if such a mixture were sent forthwith to the purifiers, since the efficiency of the grading action of the sieve as well as of the air separation would be greatly impaired. It is for that reason that the middlings are divided into several size groups, each to be handled on a separate machine or machines. It is generally recognized that the more extensive the subdivision or, in other words, the narrower the range of sizes included in the feed to each purifier, the better are the possibilities of doing good work on the purifying system as a whole.

Aside from consideration of particle size, the grouping of purifier feeds must take into account also the degree of purity as dependent upon the origin of the respective streams of stock. It would be a step in the wrong direction to mix good and poor stocks, as such a condition is the very thing the purifying effort aims, in general, to remedy. For that reason, the relatively impure middlings from the fourth break are always purified separately from those of the first three breaks. Third break middlings also are usually purified separately, although in this case it is only the coarse portion (which would grade over about a 36 light wire) which differs perceptibly in purity from the respective granulation derived from the first and second breaks.

With average break extractions, any third break middlings finer than approximately the above grading wire are closely similar in quality to respective granulations from first and second breaks, and it is believed that all three could be purified to best advantage together. Such an arrangement would in many cases, however, leave an insufficient amount of stock for a purifier handling only the third break coarse middlings, and it is for that reason that the stream to the third break middlings purifier often comprises all sizes of middlings having passed through the scalping wires and graded over either 60 or 66 light wire. The throughs of the latter are sent to the redust sections together with the respective stock from first and second breaks.

Beside the machines used for purifying original middlings, by which is meant those coming directly from the breaks, there is usually at least one purifier dealing with secondary middlings stock which is derived from sizing down of the coarse middlings from the first three breaks, which have been previously purified. Sizing stock consists, to a large extent, of

particles of pure endosperm, but it contains also many others which have pieces of fractured bran directly attached. It also contains a large proportion of the germ. The sizing rolls cause the oily germ to flake, and by fracturing the more brittle endosperm, cause the attached bran fragments to release their hold. While the flaked germ is largely scalped off, many of the bran fragments are small enough to pass with the reduced middlings through the scalping sieves, which makes purification of this stock a necessity. Sized middlings to purifier are usually graded over a 60 or 64GG, although there may also be an additional coarser grading number for the purpose of dividing this stock into coarse and fine portions. The throughs of the 64GG, after being dusted over the flour cloths, represents one of the cleanest and purest stocks in the mill. It does not, therefore, require purification.

The coarse middlings from the head breaks are the easiest to purify and the most benefited by it, the reason being that because of their physical nature they react most favorably to the action of the air currents and of the sieve motion. With the finer granulations of middlings and those produced by the fourth break, the task is much more difficult. This is because the pure and impure particles of these stocks differ less sharply in their shapes and relative air resistance than is the case with the heavier middlings stocks. For this reason, repurification is in many cases resorted to, the tailovers and some or all of the throughs of purifiers handling these stocks being sent to special purifiers provided for that purpose. In smaller plants, some of the tailovers and throughs of the tailsheets of certain purifiers are often included in the feed to the purifier provided for the fourth break middlings for the purpose of repurification.

The amount of purifier sieve surface allowed per barrel of capacity is usually about two tenths of a square foot. In the division of the total purifier load to the various fractions of the available surface as represented by individual sieves, account must be taken of the circumstance that a relatively greater amount of surface is required for the fine than for equal amounts of coarse stock. Coarse middlings may be fed onto the sieve in a thicker layer than fine stock, the load the machine is best able to deal with varying in approximately the same ratio as the size of the average particle in the feed.

Purifier cloth numbers are chosen in accordance with the numbers through and over which the respective stock has been graded, the grit gauze number at the head being usually a few numbers coarser than the sieve over which the smaller particles passed and that at the tail a few numbers coarser than the sieve through which the stock has been graded. For fine middlings, the respective spread between grading and purifier numbers is somewhat greater. Intermediate cloth numbers should be such as will permit fairly uniform amounts of stock to pass through each section of the cloth, which will insure an even tapering of the load from head to tail with a minimum of disturbance of its stratification.

Good work on purifiers requires a high state of mechanical efficiency of the machines. Looseness in the bearings or sieve hangers must be avoided, and the motion of the sieve must be so adjusted as to produce a uniform spread of stock from side to side for the whole length of the sieve. The suction through the sieve should be strong enough to tail over a maximum amount of impurities but not any undue quantity of good stock. It should never be so strong as to set up any swirling motion of air through the tail sheets which will disturb the layer of stock moving over the sieve surface.

The most common causes of improper operation of a purifier sieve are looseness of the cloth, which causes the stock to move over the sieve in bunches, and unequal length of the eccentric connecting rods which extend through the cross piece or header which forms a part of the sieve frame. The latter condition will cause the stock to swerve toward that side of the sieve where the rod is longer. This can be corrected by moving the hexagon nuts holding either rod to the header so as to equalize their length, observing the effect of the change while making the adjustment. Care must further be taken to see that the sieve cleaning brush is properly adjusted to keep the meshes open, but not set up close enough to cause injury to the cloth.

Unlike the work of the break rolls, that of the purifiers cannot be controlled in accordance with any definite, predetermined standards of performance, but in making adjustments, the operator must rely strictly on his sense of judgment developed from experience. Beside the actual performance of the purifiers, control must extend to the distribution of their products. This means sending to the head of the reduction system the largest amounts of stock compatible with the degree of purity required at these points, while routing various quantities of semipure and impure products to other suitable places in the reduction line. Breaking and purifying constitute the preparatory stage of the milling process proper, and the more efficiently their performance is controlled, the better will be the chances of doing satisfactory work in the finishing stage, which is the reduction of middlings to flour.

—BREAD IS THE STAFF OF LIFE—

"You buy more than belting when you buy belting; you are installing the 'arteries' which provide the power flow from source to application and make power use possible, in its most economical form. It will therefore pay you to use as much discrimination in its purchase as in specifying any piece of machinery in your plant."—The Akrobelt.

"Science" and the Small Mill

(Contributed)

IN the matter of "efficient" flour production, using the word in a narrow sense, the really small mill doesn't have a look-in, compared with plants large enough to justify the installation of machinery suited to the conventional American "long system"—meaning 5 breaks and 10 or 12 separate reductions. The same thing might be applied to farming, too. To raise wheat economically, for instance, the methods in use in Soviet Russia (to some extent, at least) would be far ahead of the way wheat is generally raised in the United States. "Corporation farming" may be the last word in efficiency in some respects, but it doesn't seem to fit into the American picture because we know that there is more to economies than getting something done with the least possible expenditure of effort.

A small mill using a somewhat abbreviated system is not going to make as much high grade flour from each bushel of wheat as can be done with an elaborate process. The big mills, and the big companies which own many mills, have some advantages over the little mills, but they also go against some disadvantages. The bigger they are the more lost motion there is sure to be, and what is gained in one way may be lost in another. I for one have my doubts about the general, over-all efficiency of "mass production" in milling, although it must be admitted that most of the flour made today is produced that way.

For 30 years or so millers have strained themselves to produce flour to suit the commercial bakers, which means that the flour had to fit in with the commercial baker's "schedule" and bake good looking loaves without trouble for the shop. A hundred different things were done to make flour bake large, pretty loaves with plenty of water in them, but during all this time people do not seem to have remembered that bread should be made for eating purposes. Every year the people of the United States eat less bread per person, and this must mean something.

It seems to me that it is a mistake to "doctor" flour to make it perform nicely in the bakeshop if the net result of the whole performance is bread that people don't like well enough to eat with enjoyment. Nobody knows or cares how much protein and ash there was in the flour if the bread has a crust like thin leather and the crumb is made sweet and gooey so that it will "keep." I don't know why anybody should want to keep bread; around our place we always thought it was made to eat.

There is no denying the fact that the mortality among really small mills has been very high in recent years, but this doesn't prove that many of them can't survive if they are properly managed. A well-managed small mill is an asset to a community, and probably always will be—unless the predictions that one of these days we will take all our nourishment as pills or through a hypodermic needle come true. However, there is more to management than just trying to sell flour; a big part of it is to see that good, clean flour is made all the time, and as much of it from each bushel of wheat as can be expected with the number of machines appropriate to the size of the plant. Slipshod ways of doing things are as bad in a flour mill as on a farm or in a store—probably worse. If the system is too short to allow the making of good flour with a yield as favorable as the big mill obtains, there are usually ways of making up for the yield end of it, but if the flour is to give satisfaction to the people who buy it the quality will have to be kept up.

A really small mill has to be as careful as a big one about the kind of wheat ground. Maybe all the wheat offered at the door will not be suitable for milling, in which case it is foolish to buy it unless it can be resold at a profit. However small the plant, it is a paying investment to use the services of a reliable commercial laboratory at intervals on both wheat and flour, especially at the beginning of each crop. A miller of reasonable intelligence can spot damaged grain without any help from anybody, but there are differences in wheats which can only be uncovered in a laboratory. An occasional analysis of the flour is also a good investment, not because the mill's customers care anything about ash and protein but because the miller ought to know about such things if he expects to operate his machinery at a profit.

It has been said before that a small mill can be successful only when it fits the trade obtainable without selling and transportation expense, but nowadays flour and millfeed must be sold to stores in little towns or villages as well as at the mill door. There will therefore be some selling and transportation expense, but the feed made will usually sell very readily in competition with the feeds offered by large "foreign" mills. With surplus flour it is a different matter. The housewife who buys flour for general use is not going to be satisfied with a product that will not make good biscuits and cake when she wants them and also tasty "light rolls" or loaves if she happens to want them. She will not buy a flour—at least not more than once—just because it is made locally if the dough it makes is "rubbery" and the baked stuff is tough and dingy looking. Even a little mill can make flour that is not that way if care is taken about the wheat

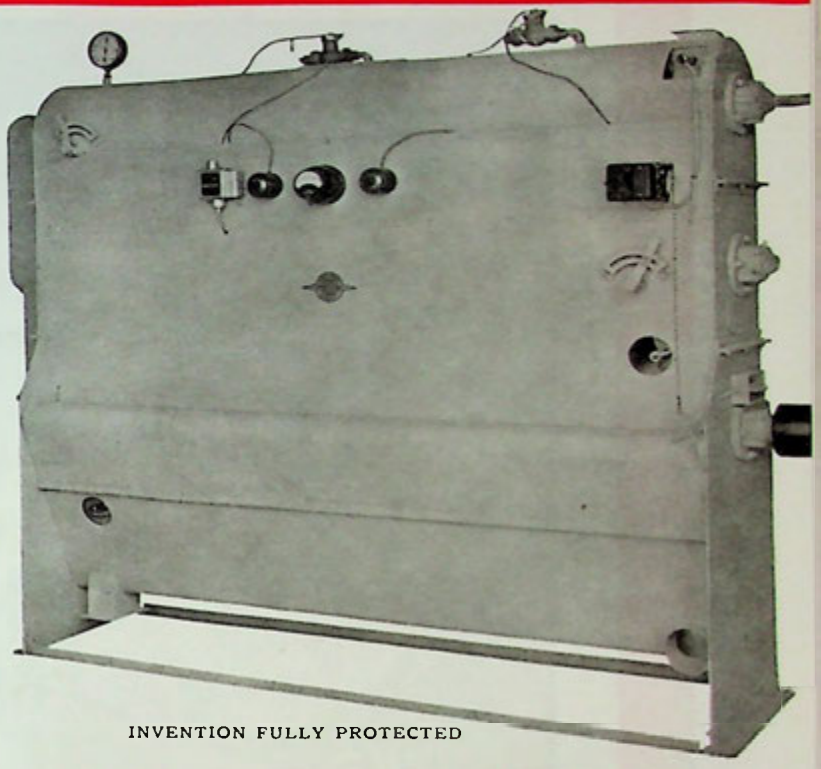
(Continued on page 23a.)

FORSTER
SPECIAL MILLING MACHINES

don't let prejudice rob you of profit!

APPARATUS WHEAT CONDITIONING
IS THE INEVITABLE SUCCESSOR
OF "TEMPERING."

IT IS HERE TO STAY!



INVENTION FULLY PROTECTED

MANUFACTURING FORSTER COMPANY WICHITA KANSAS

The FORSTER CONDITIONER is the ANSWER!

SAFE • CERTAIN • PROFITABLE

Uniform Milling Is Impossible Without It!

STANDARD DIMENSIONS—SPECIFICATIONS

Serial No.	Capacity, bu per hour	Horsepower Required	Boiler H.P.	Height (Min.)	Width	Length Over All	Cylinder Diameter	Wheat Inlet	Speed of Roller, r.p.m.
1	40- 60	3	4	67"	25"	102"	15"	4"x4"	40-60
2	65-125	6	7	79"	28½"	106"	19"	4½"x4½"	40-50
3	150-225	10	15	92"	32"	120"	23"	4½"x6"	40-50
4	250-350	15	20	109"	42½"	132"	32"	6"x6"	35-45

We Will Make a Written Guarantee to Fulfill Our Claims.

Write for Details — Prices, Names of Users — Evidence!

THE FORSTER MANUFACTURING CO., INC.
471 North Seneca Street **WICHITA, KANSAS**

GRAIN SCOURERS, BRAN DUSTERS AND FINISHERS, HAMMER MILLS, STONE AND METAL SEPARATORS, FEED MIXERS, MOLASSES MIXERS, ETC.

Northwestern Representative, R. J. S. Carter, 1319 Flour Exchange, Minneapolis, Minn. • Represented in Great Britain, Holland, France, Sweden, the Argentine and Australia by Henry Simon, Ltd., Cheadle Heath, Stockport, England. • Canadian Representative, Sawyer-Scott Manufacturing Co., Ltd., Winnipeg, Man., and Toronto, Ont., Can.

Flour and the Wholesale Baker

By Paul E. Holton

Commercial Milling Co., Detroit, Mich.

IN general, wholesale bread bakers are quite exacting in their white flour specifications. This is due to their desire to standardize production schedules and, at the same time, reduce to a minimum the possibility of variation in bread quality. Factors ordinarily considered on this score are moisture, protein and ash. Equally important are those of bleaching for maturing effect, malt treatment, and mixing characteristics.

The nitrogen trichloride bleach, used for its maturing effect, and the oxidant containing yeast foods occupy an important place in the production of white bread. Through the use of these agents, "green," or freshly milled, flour can be used quite safely. The difficulties encountered with excessively soft, sticky doughs in the rounder, overhead proofer and molder are practically eliminated. The fermentation period is reduced and stabilized, thereby making possible a fixed production schedule. Most important of all, the bread shows increased volume and a fine, thin cell-walled grain which is difficult to attain without these agents.

The level of bleaching treatment is usually associated with the kind of bread to be produced. First, if a yeast food containing an oxidizing agent is to be used, the amount of oxidizing bleach, nitrogen trichloride, must be correlated with the amount of yeast food and its composition. The quantity of yeast food generally employed varies from 0.1 to 0.5% (flour basis). The most common type of yeast food contains approximately 0.5% of the oxidizing agent potassium bromate. Salts of calcium, ammonia and phosphorus are often included and exert an auxiliary effect on dough and bread qualities. Two grams of nitrogen trichloride bleach per barrel may yield the best loaf when used with 0.5% yeast food (flour basis). Three grams of nitrogen trichloride per bbl might be required if the quantity of oxidant containing yeast food were but 0.25%.

Some wholesale bakers specify unbleached flour, while others have not used oxidative yeast foods. Both methods have advantages, chiefly in the increased or altered flavor produced in the bread. However, in the interest of uniformity of loaf volume and internal characteristics, the majority use a bleached flour in conjunction with an oxidant containing yeast food.

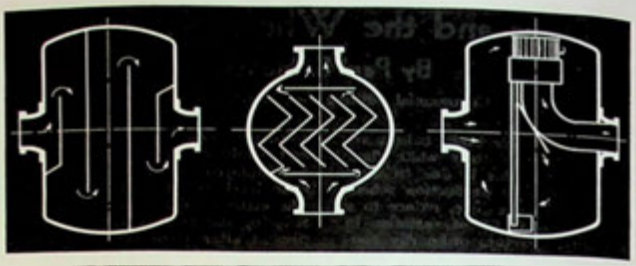
White flour ordinarily requires the addition of malt flour in order to secure good baking results. Unless specified, most mills seek to strike a happy medium in the amount of malt treatment. By means of mechanical feeders, the quantity of malt flour added to a flour stream can be controlled fairly accurately. The range of treatment generally employed is from 0.1 to 0.3% malt flour.

Too much malt treatment is to be avoided, more so than too little. If the aggregate malt treatment supplied by the mill in its flour and by the baker in his formula is excessive, the result will be a sticky dough with lowered absorption. In addition, the bread will have decreased volume and a coarse, thick cell-walled grain. This condition can be easily confused with "youngness." If the total malt treatment is too meager, there is not enough enzymatic activity and carbon dioxide gas produced in the sponge fermentation to mature the dough properly. In this case the sponge will be slow to rise, and the resulting dough will be "bucky" in nature, lacking the desired extensibility. The bread will show poor volume and a definite "underdeveloped" cell structure.

Two valuable tests which indicate the level of diastatic activity are the maltose value and the gassing power test (Blish and Sandstedt, 1933, 1934). Either can be employed to determine the desired malt level (Davis and Worley, 1934). The maltose value is a measure of the reducing sugars (calculated as maltose) present after a one hour controlled digestion of the flour-water suspension. The gassing power test, commonly called the pressuremeter test, is particularly valuable from a practical point of view. In this case the rate of carbon dioxide production in a dough consisting of flour, yeast and water is measured over a period of four to six hours. Again, it is the baker's problem to determine the amount of diastase he wants the mill to provide and how much he, the baker, will furnish. The system of permitting the mill to malt the flour fully is probably cheaper for the baker but is not as flexible as dividing the responsibility between the mill and the baker.

A consideration of mixing behavior of dough always includes the term "mixing tolerance." By accepted definition, a flour having good mixing tolerance yields a dough which is stable and produces satisfactory bread over a wide range of mixing times. While this is a desirable quality in itself, it is usually the case that this wide range of mixing times over which the dough is stable is not reached until after a relatively long development period. In other words, the flour having the more mixing tolerance actually requires a greater amount of mixing to secure optimum development of the dough. Mixing times can be accurately controlled

(Continued on page 19a.)



Methods of Obtaining Clean, Dry Steam. Left: Receiver With Straight Baffles. Center: Receiver With Twisting Baffles. Right: Receiver With Internal Purifier of Centrifugal or "Centrifix" Design.

Clean, Dry Steam Pays

By V. D. Green

Manager, Technical Advertising Bureau, Cleveland, Ohio

IN a general way, most of us admit that clean, dry steam is necessary for power purposes; we are not so generally "sold" on the idea that this matters very much when that steam is used for processing or humidifying purposes. But the dollars-and-cents angle in either case is by no means to be despised.

During normal evaporation in a boiler the ebullition of the water causes tiny droplets of the liquid to be thrown up into the steam-space. The steam, moving to its work at anywhere from 1,000 to 20,000 feet per minute, carries these droplets in suspension to the engine or processing equipment. Unless this water is removed very thoroughly, serious inefficiency and possible damage to the engine or processing apparatus will ensue. This condition is aggravated when the boiler is overloaded, where the steam demand fluctuates violently (as it frequently does in processing operations or where oil, grease or scale has been permitted to accumulate in the boiler itself). In such cases, it is even possible for actual "slugs" of water to be carried over.

In prime movers, such as engines and turbines, the destructive effect of even a moderate-sized slug of incompressible water traveling into the mechanism at, say, two miles a minute may be easily imagined. Even tiny droplets can deliver quite a sizeable blow at such a velocity; and increased operating and maintenance costs follow inevitably. Another disadvantage of wet steam is that since the suspended water is obviously at a lower temperature, it robs the steam of some of its heat-energy on the way to its work, thus increasing the cost per pound of steam usefully employed. This cost may run unexpectedly high; so that it is not unusual for a really efficient steam purifier to pay for its installation cost in a few months, even with low-pressure process steam.

The presence of scale, dirt, grease and oil in the boiler is due both to the inevitable slight mineral impurities in even the best of feed-water, and to traces of lubricants picked up from the passage of the condensate through the vacuum pump. All these are bad for the boiler, since they prevent proper heat-transfer in spots and thus set up unequal expansion stresses. "Foaming" or "priming" also increase the "carry-over." Scale carried into an engine is of course far more destructive even than water. Eroded turbine blades and scored piston rings and cylinder walls are serious troubles, as some of us know from sad experience.

Since the pressures used for heating purposes and perhaps for conditioning wheat are generally decidedly lower than those used for power equipment, the temperatures and velocities are also lower; and the need for clean, dry steam is even more necessary rather than less so. Although there is less tendency for scale, dirt and water to be carried over into the steam lines, etc., it is also much

(Continued on page 22a.)

EDGAR S. MILLER
Editor-in-Chief
of the
Milling Course

C. A. PROSSER
Director of
Dunwoody Industrial
Institute

ONE OF THE COUNTRY'S LEADING VOCATIONAL EDUCATORS SUPERVISES IT; A RECOGNIZED AUTHORITY ON PRACTICAL MILLING TECHNOLOGY EDITS IT;

AND MEN IN MILLS THROUGHOUT THE CONTINENT STUDY...

THE COURSE IN PRACTICAL MILLING

December of this year will see the completion of three units of this correspondence course which, since its inauguration in 1937, has met with the approval of leading millers throughout the world. There are four units in all, and applications may be made at any time. . . . Enrollments for Unit 1 have steadily increased as the worth of the work has become recognized.

★ ★ ★ ★

AMONG WELL KNOWN MEN WHO HAVE ENDORSED THE WORK ARE:

Frank A. Madge, Supt., Noblesville (Ind.) Milling Co.
A. N. Henjum, Supt., King Midas Flour Mills, Minneapolis, Minn.
V. M. Burnett, Supt., Roanoke City Mills, Roanoke, Va.
C. W. Brooks, Supt., Maney Milling Co., Omaha, Neb.
Arthur D. Hyde, Director of Manufacture, General Mills, Inc., Minneapolis, Minn.
George J. Kehr, Head Miller, Russell-Miller Milling Co., Buffalo, N. Y.
W. W. Knight, Miller, El Reno Mill & Elevator Co., El Reno, Okla.
Carroll Martin, Miller, Weiser (Idaho) Milling & Elevator Co.
Eugene R. Smith, Miller, Chester Roller Mills, Pomeroy, Ohio.
C. L. Johnson, Head Miller, Bush Milling Co., Seymour, Ind.
Ross L. Goodnight, Miller, Shellabarger Mills, Salina, Kansas.
Paul W. Jones, Head Miller, Earle-Chesterfield Milling Co., W. Asheville, N. C.
Lawrence L. Manley, Miller, V-O Milling Co., Los Angeles, Cal.
J. K. McIntyre, Miller, Washburn Crosby Company, Minneapolis, Minn.
Harry Speakman, Miller, International Milling Co., Buffalo, N. Y.
B. F. Hodges, Supervisor of Production, Western Div. General Mills, Inc., San Francisco, Cal.
R. J. Brooks, Head Miller, Robin Hood Flour Mills, Ltd., Calgary, Alta., Can.
D. B. Libbee, Supt., Wilson Flour Mills, Wilson, Kansas.
C. W. Partridge, Secretary, Association of Operative Millers, Kansas City, Mo.
C. P. May, Supt., Crete Mills, Crete, Neb.
D. L. Morris, Supt., Burrus Mill & Elevator Co., Kingfisher, Okla.
Robert M. Hill, Miller, Quaker Oats Co., Akron, Ohio.
Richard S. Johnson, Head Miller, Angle Roller Mills, Buancock, Md.
Vergil L. Standley, Head Miller, Washburn Crosby Company, Minneapolis, Minn.
D. O. Hiebert, Miller, Buhler Mill & Elevator Co., Buhler, Kansas.
Wm. P. Hawkinson, Miller, Western Flour Mills, Davenport, Iowa.
W. G. Eakin, Head Miller, Sperry Flour Co., Ogden, Utah.
Howard G. Berry, Supt., Marquis Flour Milling Co., Scobey, Mont.
Dan Hixon, Miller, Mountain City Mill Co., Chattanooga, Tenn.
A. H. Moddelmog, Supt., Moundridge Milling Co., Moundridge, Kansas.
R. L. Morrison, Supt., Finger Lakes & Hudson Flour Mills, Troy, N. Y.
Glenn L. Bleile, Miller, Fuhrer-Ford Milling Co., Mount Vernon, Ind.
Edward Hertlein, Head Miller, Cuba Roller Mills, Cuba, Mo.
Stuart Merilees, Miller, T. H. Taylor Co., Ltd., Chatham, Ont.
Volney P. Eakin, Miller, Fayetteville (Tenn.) Milling Co.
Lon R. Gramer, Miller, Liberty Mills, San Antonio, Texas.
George F. Long, Miller, Pocatello (Idaho) Mill & Elevator Co.
Frederick L. Marshall, Supt., Quaker Oats Co., Saskatoon, Sask.
H. H. Collier, Supt., Atkinson Milling Co., Minneapolis, Minn.
H. E. Drake, Supt., White Star Mills, Staunton, Va.
W. J. Follmer, Supt., V-O Milling Co., Los Angeles, Cal.
M. M. Fredel, Supt., Hecker-Jones-Jewell Milling Co., Buffalo, N. Y.
W. J. Harding, Supt., Yukon Mill & Elevator Co., Yukon, Okla.
Louis R. Henkle, Supt., Lawrenceburg Roller Mills Co., Lawrenceburg, Ind.
Carl C. Barkhaus, Supt., Ardmore (Okla.) Milling Co.
Paul W. Rohrbach, Head Miller, S. D. Rohrbach & Sons, Topton, Pa.
Anton Wuerstle, Head Miller, Vegreville Flour Mill, Vegreville, Alta.
Herbert R. Klink, Supt., Acme Mills, Inc., Hopkinsville, Ky.
Richard O. Harris, Miller, Harris Milling Co., Mount Pleasant, Mich.
W. S. Newton, Supt., Packard Milling Co., Custer City, Okla.
Edwin Westrich, Miller, C. C. Groff Milling Co., Cincinnati, Ohio.
Glenn V. Kintzle, Supt., Robin Hood Flour Mills, Moose Jaw, Sask.
Ben D. Blackburn, Supt., Nappanee (Ind.) Milling Co.
R. R. Brotherton, Supt., Bay State Milling Co., Winona, Minn.
Walter H. Tarling, Gen. Supt., King Midas Flour Mills, Minneapolis, Minn.
Henry Vilm, Supt., J. C. Lysle Milling Co., Leavenworth, Kansas.
Munsey Moore, Supt., Moore Milling Co., Inc., Salem, Va.
Donald S. Eber, Miller, Crown Mills, Portland, Oregon.
H. H. Trapp, Supt., Russell-Miller Milling Co., Buffalo, N. Y.
R. O. Daniel, Supervising Miller, Globe Milling & Grain Co., Los Angeles, Cal.
F. L. Talmage, Supt., Isnert-Hincke Milling Co., Topeka, Kansas.
E. C. Veeck, Supt., Eagle Roller Mill Co., New Ulm, Minn.
Geo. S. O. Smith, Supt., Valier & Spies Milling Co., St. Louis, Mo.
Ray F. Sopher, Supt., Acme-Evans Co., Indianapolis, Ind.
Leonard Carmichael, Supt., National Milling Co., Toledo, Ohio.
R. W. Bouskill, Supt., Western Canada Flour Mills, Ltd., Winnipeg, Man., Can.
Carl S. Arnold, Supt., H. C. Cole Milling Co., Chester, Ill.
O. J. Olson, Supt., Redfield (S. D.) Cooperative Mills.
Fred A. Schuette, Supt., Beaver Valley Milling Co., Des Moines, Iowa.
H. A. Turner, Supt., Russell-Miller Milling Co., Minneapolis, Minn.
T. G. Luby, Supt., Clyde Mill & Elevator Co., Clyde, Kansas.
Major S. Howe, Supt., Stanard-Tilton Milling Co., Alton, Ill.
Julius Jurkow, Supt., Sheridan (Wyo.) Flouring Mills, Inc.
Willis Charles, Supt., Garland Milling Co., Greensburg, Ind.
Roy E. Williams, Supt., Southwestern Milling Co., Kansas City, Mo.
R. G. Zimmeister, Head Miller, Pioneer Mills, San Antonio, Texas.

★ ★ ★ ★

FOR PARTICULARS, WRITE TO:

DUNWOODY INDUSTRIAL INSTITUTE

816 WAYZATA BOULEVARD MINNEAPOLIS, MINN.

Rambling in the Buckeye State

(Contributed)

MY grandparents lived nearly a century ago in Auglaize County, Ohio, not far from Wapakoneta. It had been my desire for many years to visit that locality and look upon scenes familiar to them in pioneer times. It is a land of little mills. The only extremely large plant I saw on the entire trip was the 6,500-bbl mill in Toledo owned by the National Biscuit Co. The whole countryside is covered with 25-, 50- and 100-bbl mills.

When grandfather was a boy he worked in a little water mill on an adjoining farm. All over the Buckeye State, visitors even yet are shown the sites of hundreds of old mills, each with an interesting local history. Some old stone dams still are in evidence in Ohio creeks, and water still plays an important part in Ohio milling.

For example, the 200-bbl mill of the Hook-Aston Milling Co. at Zanesville is a water mill. So are the 100-bbl plant of Gordon, Hauss & Folk, St. Marys, the 75-bbl Providence Milling Co. at Grand Rapids, and many others. We saw dozens of old mill stones kept around mills as relics, used in various ways for decorative effects and for some practical purposes, too, on country estates of the wealthy or well-to-do. More modern forms of milling power have advantages over water, but they do not carry the same amount of romance; mill rolls are more efficient in flour manufacture than mill stones, but they will probably never have songs written about them.

I had the pleasure of meeting in Cleveland a retired salesman who spends from Jan. 1 to May 1 in south Georgia. He has made a considerable study of corn milling in that state, and he pronounces it as romantic as wheat milling was in Ohio in the old stone days. In fact, much of the corn milling in Georgia is done on stones, of which there are said to be many pairs operating at the present time.

I struck up a conversation with an old-time miller near Canton. He mentioned a dozen mills in which he had been employed in Ohio. He recalled many of the old-timers with whom he had worked and stated that only about one out of five was satisfactory to work with. The others thought nothing of going off duty, leaving a choked mill, when he took his trick. Such fellows figured on two things, he said—quitting time and pay day, thinking nothing of rolls grinding on one end, bearings hot enough to smoke, and the other millers. Yet these same fellows, he stated, could usually gather in all the testimonials and recommendations needed and go ahead milling year after year.

"The only ones I recall with pleasure," he remarked, "the only ones I correspond with, go to visit, or otherwise hold in my memory affectionately, are the other kind—the competent, thoughtful millers who had the plant in shape for me before my trick started, leaving me a mill that was running like a top—and also who came on the minute to relieve me. They were not merely millers but gentlemen."

So it seems that a miller may fool his employer, sometimes, but no miller is able to fool the other millers who work with him. They know if he is a chiseler. They also know if he is a co-operative chap, willing to do his full part.

In one northern Ohio mill, the owner showed many interesting and efficient gadgets which he had devised. Evidently, a good inventor was lost to the world when he inherited this nice little flour mill. In speaking of lubrication, he stated that he had used for years what is called the "stopping-time test." He merely times how long it takes his diesel engine to stop completely after being shut off. The longer the flywheel rotates, the better the lubrication is. He said: "Any kind of engine can be tested the same way. If they stop too soon, not enough oil is in use."

This miller was exceedingly proud of a letter received from a grocer praising the quality of his flour. He said: "If a man is really in earnest, he can get fine flour from a small mill. I go after a snow-white flour, starting the separation with the wheat, ruling out all foreign matter. After close scouring and finishing with a brush machine, I wash the wheat. I see to it that the first break rolls are properly adjusted before the wheat goes in. Adjust the rolls to fit the system of milling you do, and mill to suit the silks in that section. Use common sense and care. Every fall, before our local wheat comes into use, we give this mill a cleaning from the cellar right up to the garret. We use lime liberally, and clean out all the dark corners. Our basement is whitewashed, even the floors. We try to rid the premises then of vermin, weevil, moths, and all other forms of insect life."

This miller stated that he knew of mills in his part of Ohio that hadn't really undergone a 100% house cleaning in years. He said he never could understand the makeup of a miller who could operate over long periods of time in a dirty, grimy, cobwebby plant.

—BREAD IS THE STAFF OF LIFE—

And to say the truth there seems to be no part of knowledge in fewer hands than that of discerning when to have done.—*Swift.*

• LESSONS IN •
PRACTICAL MILLING

FROM THE CORRESPONDENCE COURSE CONDUCTED BY DUNWOODY INDUSTRIAL INSTITUTE IN COLLABORATION WITH THE NORTHWESTERN MILLER

Lesson Thirty-six

"SECOND GRADE" AND "LOW GRADE" FLOURS

WHILE this is not the place to discuss flour grades extensively, it is appropriate to say something here about the origin of the flours which make up the composite streams known to the practical miller as "middlings patent," "clear," and "low grade." Sometimes there are four of these streams, a "second clear" preceding the "low grade." Sometimes, also, the poorest of the three grades first mentioned is called "second clear" while the grade just below the "middlings patent" is known as "first clear."

It is plain enough why a flour of distinctly inferior quality, such as that recovered near the "tail of the mill," is called "low grade," for its grade is unquestionably low. It is not difficult, either, to surmise that the superior flours made from middlings which had been purified by patented purifying machines were called "patents" because of the association of words. With respect to "clears," however, no really satisfactory explanation for the usage is easily found. It is not a matter of general color; for while patents slicked up and dipped while fresh have a clear, creamy-white and somewhat translucent appearance both before and after drying, "clear" flour is anything but "clear," in the same way, under the same circumstances.

The suggestion has been offered that the name was adopted because in the old style of "flat" milling the highest grade of flour was "superfine," literally, as pertained to both purity and particle size, while lower grades were bolted through coarser and coarser cloths. The lower the grade, the greater the amount of bran contained. Naturally, the bran particles through the coarser cloths were large, and because of their nature, they were easily seen. With the advent of the "high" milling system, particularly after roller mills and purifiers had been adopted, it was possible to make the purest flour by removing the greater part of the endosperms in comparatively large pieces which were then purified and afterward reduced with pairs of smooth rolls. Since nearly all small impurities had been removed before the reduction took place, relatively coarse cloth could be used for bolting. The highest grade flour—the patent—was still "superfine" with respect to purity, but it was not superfine with respect to particle size.

The theory continues to unfold with the explanation that the highest grades—the "patents"—were used almost exclusively by housewives, while the bakers of the times preferred the grade we now call clear. No doubt the lower price was at least a part of the attraction, but it is not unlikely that the flour actually contained a sufficient amount of "ironed-out" endosperm proteins to make it of high value in the commercial baking process, despite the heavy load of bran particles and germ fragments it carried. The commercial baker learned how to use this kind of flour to good advantage, and it soon became known as "bakers."

That name persisted in America until the bakers protested. They did not want the public to think that they were using inferior flour in making the bread they were offering for sale. They began to appreciate the fact that if they were to wean the womenfolk away from home baking they would have to provide a loaf that was at least attractive to the eye; and while it should not be inferred that any flour made from clean, sound wheat is ever unwholesome, it is certain that the lower grades produce loaves inferior in color and crumb texture as well as digestibility.

Remembering that in the early times the "superfine" flour was relatively "clear," as compared to the lower grades, which carried a good many bran fragments of considerable size, it may be that the name was substituted for "bakers" upon the premise that the newer product was so very much clearer—that is, freer from large specks—than the second grade flour of former times that the fact should be appropriately noted. It is not improbable, however, that some active millers in this country still call the grade "bakers," and that name seems to be used exclusively in Great Britain, according to the most recent British milling literature.

In Scott's "Flour Milling Processes" (published in 1936) the author offers a number of American milling terms set opposite to their equivalents in the British nomenclature. With respect to our "clear flours," he gives British usage as follows: *"Collected break flours forming one grade, but may sometimes include a proportion of medium or low quality reduction flours. In general, appears to correspond to our expression, 'bakers flours.'"*

American "first clears," however, do not invariably come under this definition. For one thing, as has been explained in connection with the program used in this work, provision is very often made for routing the small amount of flour taken through 12XX in the first break sections to the low grade bin when conditions warrant. It might be sent to first clear under certain circumstances (closer breaking, for example) which would make its volume too great for incorporation in the lowest grade flour made, or it might be aggregated with some of the tail-end streams from the middlings-reduction system and called "second clear." In any event, this first break flour could be valved directly to first clear if desired, and whatever floury material remained in the overs of the 12XX in this first break section would pass through the 9XX cloths and be further bolted on 12XX and 13XX in the dusting section.

Later on, the making of grades in American mills will be discussed at greater length. It should be understood that, with respect to merchandising terms, much of the original meaning of "patent flour" has been lost, but many practical millers preserve it rigidly in the mill, calling the streams derived from the first, second, third, fourth and fifth midds, and the sizings reduction "short patent." Counting all the flour made as 100%, the streams above mentioned should comprise about 70% of the whole. It may run lower or higher, depending upon the physical characteristics of the mill-mix. Maintaining the quality factor as measured by the formula, $\frac{\text{protein}}{\text{ash}} = \text{index}$ number, the percentage may run as low as 65 if the test weight of the wheat is very low, while with an extra-heavy mill-mix, a "short patent" running as high as 75% has been obtained without a lowering of the "quality index number." In such event, streams normally routed to clear may be incorporated in the patent because of this favorable "ash-protein" ratio.

It should be remembered that the program under consideration was intended for the milling of medium-hard wheat. The procedure set forth has been followed with favorable results, however, when good quality soft red winter wheat was milled, in which situation the flours from the second break and third break sections might be included in a "patent" flour with characteristics desired by the buyers, with the probable exclusion of certain other streams. With the medium-hard mill-mix, a portion of the first clear (or merely the clear) was added to the short patent to make a longer "patent," as will be explained at greater length later on, but it should be noted that no break flour was made a part of the "short," or "middlings," patent.

On the other hand, middlings from which short patent was later recovered were made by all the breaks except the fifth, although the quantity contributed by the fourth break was relatively small. The fifth break produced none. Such small middlings as were made there yield a little "clear" flour when reduced with other stocks routed to second tailings and seventh midds. rolls, but a considerable portion of the flour resulting either directly or indirectly from the fifth breaking operation finally reached the low grade bin, except when a "full straight," or "100%" flour, was made or when a grade including it in the clear was desired.

Fig. 173 shows in detail how the chop made by the fifth break rolls is handled,

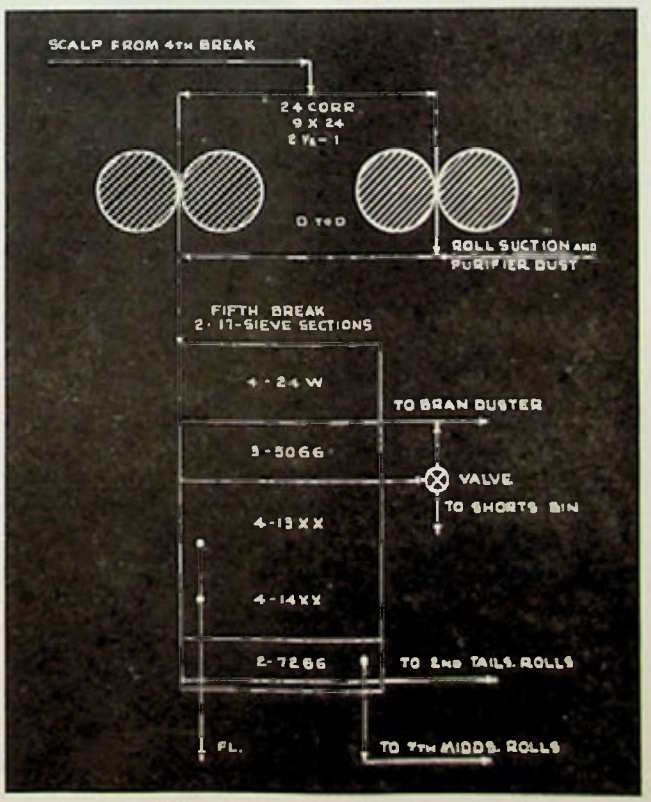


Fig. 173. Fifth Break Rolls and Section

Fig. 174. Scalp of Fourth Break to Fifth Break (Above) and Chop of Fifth Break (Below)

and in Fig. 174 the stock to the rolls (the top scalp of the fourth break) is represented at the top of the photographic illustration, with the chop below it. Viewed in conjunction with the diagram, the photograph of the unsifted chop gives some idea of the nature of the separates that may be recovered from this operation, and the routing of each may be followed with some interest.

"DUSTING," OR "FINISHING" THE BRAN

The "conventional" bran duster which receives the overs of the 24W of the fifth break sections is in reality a scourer, though it scours wheat skins instead of wheat berries and removes both endosperm and cells of the bran. The "beaters" are brushes, and the case is usually of special wire cloth with about 35 meshes to the inch. Mostly, dusters of this type, used on either the large bran from the fifth break or the somewhat smaller particles received from the tailings system, are of vertical construction, but whether vertical or horizontal, the mechanical principles involved are similar to those employed in the centrifugal reel. A very brief examination of these will be all that is necessary here, since any student will find manufacturers very willing to provide details upon request.

Both the centrifugal reel and the horizontal bran or shorts duster differ from a horizontal scourer in that their "cases" are not stationary but revolve in the same direction taken by the beaters. They differ from the plain round reel described in Lesson 5 (Fig. 19), for they have slowly revolving cases, or coverings, and in addition, rapidly revolving members running in the same direction and acting to throw the materials operated upon against the cases by virtue of centrifugal tendency. This was briefly described in Lesson 7 (Figs. 32 and 33) and Lesson 8 (Fig. 37).

The blades, or beaters, of the centrifugal reel merely throw the materials against the inner side of its cover, which is a bolting medium of some kind, stretched tightly over a frame to form a cylinder; the brushes of a bran duster not only throw the stock in somewhat the same manner but they also rub it with more or less severity against the cover. In the centrifugal reel there is some tendency toward breaking flakes that are rather frangible, and it is for this reason that centrifugals are preferred by some millers for bolting the products of smooth rolls. In the duster, the action differs somewhat, because there is less of impact and more of "scrubbing." These differences are suggested in the sketches presented as Fig. 175. It should be explained that the cylinder and drum of the duster are slightly conical, so that the brushes may be made to rub against the case with more or less pressure by setting the drum toward the smaller end of the case. Suitable means for accomplishing this are always provided.

Fig. 176 is a photographic reproduction of the top scalp of the fifth break sections (over 24W) going to the bran duster, and it will be noted that provision is made for sending with it the overs of the 50 G.G. of the same section when conditions warrant such procedure. Upon occasion this stock may require the action of the bran duster brushes to remove materials which cannot be sent directly to the feed bin and still obtain a reasonable flour yield. The conditions which make it necessary to treat it with the bran will automatically enhance its quality. It will be observed that some of the throughs of the bran duster wire eventually find their way into the clear flour via Reel No. 1 and the seventh midds. reduction.

Other separates of the fifth break chop also contribute to the clear flour. The overs of the 72 G.G. dusting cloths are routed to second tailings, from whence a part of the seventh midds. stock is derived, and the throughs of the same cloths go directly to the seventh midds. rolls. The recoveries from the shorts duster are treated on Reel No. 1, with the throughs of the bran duster; and while the flour resulting from the operations of both dusters is usually classified as low grade (as is ordinarily the case also with the flour directly from the fifth break section), the throughs of the 60 G.G. on Reel No. 1 yield flour with an "index number" sufficiently high to justify incorporation in the first clear stream when they are operated upon by the seventh midds. rolls.

In previous lessons we have examined the operations included in the middlings system as far down the line as those which contribute to the strictly "short patent" flour, and for convenience as well as greater clarity, a good many illustrations of individual operations have been offered. From now on it should be possible to follow through to the finish by referring to the diagrams that are a part of the complete flow sheet published in Lesson 31, since photographic reproductions of the latter stocks (except those of bran-coats) cannot be made of any great significance.

In Fig. 172, Lesson 35, it was shown that the scalp of the fifth midds. section was routed to second tailings, and that the overs of the flour cloths were sent to sixth midds. Referring now to the complete flow sheet, it will be observed that the sixth midds. receives a stock from the second tailings section. The sixth midds. scalp, over a 64 G.G., goes directly to the shorts duster. Logically, if the flour produced should show an index number higher than that given by the fifth midds., either the stock to fifth was too poor or that to sixth was too rich. Naturally, both the ash and protein content of the sixth midds. flour will be higher, but the flour from the fifth should have the lower ratio of ash to protein. Specific examples of these ratios, as existing in a practical mill grinding medium-hard wheat, are here offered.

Fifth midds. flour, ash .41; protein 11.00

11.00÷.41=26.82=Index number.

Sixth midds. flour, ash .48; protein 12.20

12.2÷.48=25.4=Index number.

The second tailings reduction may be considered next in order, for the overs of its dusting cloths are sent to the seventh midds. with the residue of the sixth. Its scalp, over 58 G.G., goes directly to the shorts duster with the scalps of the sixth midds., while the throughs of the dusting cloths go to the sixth midds. rolls. A small amount of fairly good flour is extracted from these throughs before they are acted upon, with the overs of the 72 G.G. and the residue of the sixth midds. reduction, by the seventh midds. rolls.

DUST COLLECTOR STOCKS

Very little has been said previously about the materials drawn to fans exhausting air from the housings of roller mills and purifiers (and usually from elevator legs, also). The subject is rather large, and it seems best to consider it in detail at a time when to do so will not break the continuity of the milling process too seriously. In the program we are examining, it is shown that the "roll suction and purifier dust" is introduced into the sifter sections serving the fifth break. This means that the materials gathered by the dust collectors into which the fans exhausting air from the housings of roller mills, purifiers, etc., are discharged, are conveyed together to the fifth break sections, where they are separated according to size.

The floury portions should bolt out with the fifth break flour through 13XX and 14XX. Particles comparatively large and flat may be expected to pass

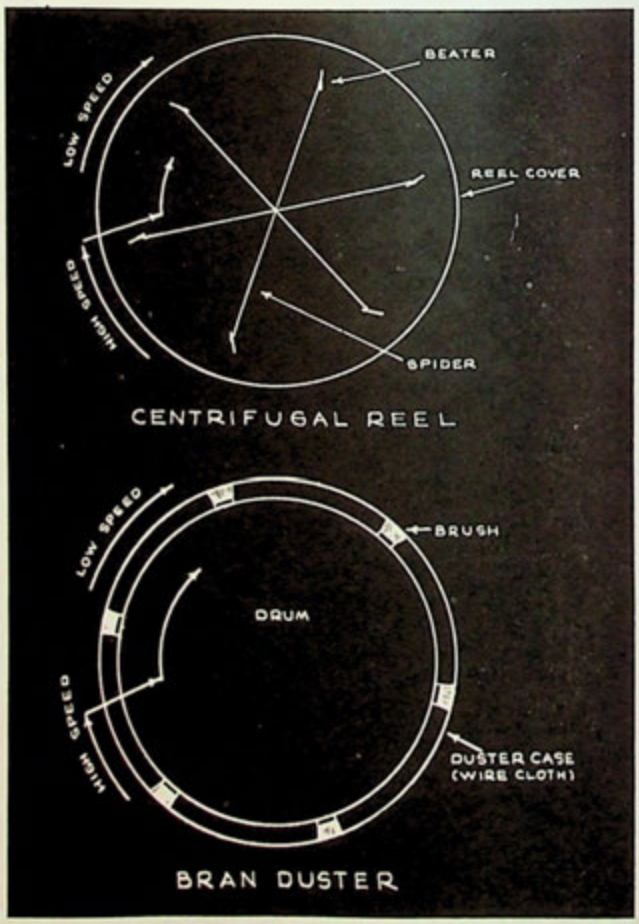


Fig. 175. Above: Principle of the Centrifugal Reel. Below: Principle of the Bran Duster

through the 24W and over the 50 G.G. to bran duster or directly to the shorts bin. Particles of intermediate size will either pass over or through the 72 G.G. dusting cloths (Fig. 173). Those over will flow to the second tailings rolls, while those going through will go to seventh midds. Unfortunately, in either small mill or large, some real middlings of good quality are not kept completely out of the dust collectors and consequently out of stocks whose general quality is much lower.

In large plants it is common practice to provide separate exhausting systems for different groups of rolls and introduce the materials from dust collectors into different sifter sections or reels for grading and bolting. For example, the suction stocks from the rolls reducing clean middlings and producing streams suited for "short patent" naturally contain a lesser percentage of impurities than do the recoveries from the break rolls and the rolls operating on tailings and tail-end reductions. These better stocks may be sent to the sixth midds. section or sections, passing by the rolls, and in this way the flour recovered can be included in the first clear stream. The "poor roll suction" and the products of the purifier dust collectors are often treated together on a sifter section of their own in mills of considerable size—

Fig. 176. Fifth Break Scalp to Bran Duster

units of 800 bbls capacity and up. The separates will not differ greatly from those contemplated in the program we are examining, in which all suction stocks are handled by the two sections serving the fifth break. In either case, the liftings of fans from aspirators on mill stocks or from elevator legs are usually handled with the "poor" suction stocks.

It should not be difficult to visualize the stocks sent to the shorts duster, since all are the "end products" of purification. Beginning with the first break, the least "pure" portions of the wheat berries are headed for the bran duster and the bran bin, but only those particles with length-and-breadth dimensions that remain larger than the apertures of the break scalps can be kept on their way. Those that are able to pass through, whether they are free or attached to endosperm particles, immediately begin moving toward the shorts duster—and the feed bin. Every purifier and every pair of reduction rolls contributes to this movement.

The particles of bran and the fragments of germ cannot all be quickly removed and routed to feed, however. "Nipping," scraping and attrition tend to make them smaller and smaller, and somewhere near the line which divides "patent" from "clear" they have become so hopelessly amalgamated with starch and proteins of the endosperm that it is necessary to break up the smaller of the flakes in order to secure an acceptable flour yield.

Both the bran duster and the shorts duster are "scalpers," in some degree, and, like all other machines in the mill, they are "purifiers." The largest separate made by either machine is the highest in ash and contains the smallest percentage of pure endosperm. The throughs of the 35W and the throughs of the 40W carry considerable very fine flour (with respect to particle size), and both are dispatched to Reel No. 1 for dusting. This reel does more than dust out the fine material, however, for after the 13XX has removed the floury stuff, there remains a product that will pass through when scalped on a 60 G.G. It is composed largely of fibrous particles that may have been produced by the breaking up of composite flakes by the beaters of the centrifugal. Some are more or less cubical, and when reduced again by smooth rolls, without too much pressure, they will yield flour suitable for incorporation in the clear. They are routed to the seventh midds. rolls, with the residue of the sixth midds. and the coarser residue of the second tailings.

It may or may not be true that, in this program, sifter sections would have performed more satisfactorily in handling the products of the so-called seventh midds. reduction. No comparative data are available, but it may be said emphatically nevertheless that most, if not all, American millers and milling engineers favor the centrifugal. The preference is logical, for it seems apparent that there must come a time when the actions of smooth rolls merely tend to make thin composite flakes still thinner. As has been suggested previously, the centrifugal reel must disintegrate particles in a greater degree than does a gyratory sifter—which is to say that it is a more efficient "flake buster." Its action is very much gentler than that of a "detacher" or "scroll" or "middlings mill," of course, and British millers seem to prefer centrifugals to sifters in many positions because of their disintegrating tendency.

There are probably good and sufficient reasons for this preference, for British milling literature discloses that smooth reduction rolls are run with smaller differential over there than over here. Moreover, the stocks in the British mill are much damper than ours, and damp particles are, of course, inclined to adhere and form flakes under pressure. Scott ("Flour Milling Processes") states that the moisture contents of British mill-mixes run well above 17%, and gives examples of stocks corresponding roughly to our better middlings and carrying as much as 16.5% moisture. He advises that the differential of a pair of reduction rolls (smooth) is in the neighborhood of 1¼ to 1. In America, 1½ to 1 is common practice.

Little need be said about the last reduction of the middlings and tailings systems, called "First Low Grade." The "first" was used merely because even in mills of 300 or 400 bbls capacity a "Second Low Grade" reduction is sometimes made by providing a scroll, or middlings mill, and another centrifugal to operate once more on the tail-end stocks. In the program we are examining the centrifugal

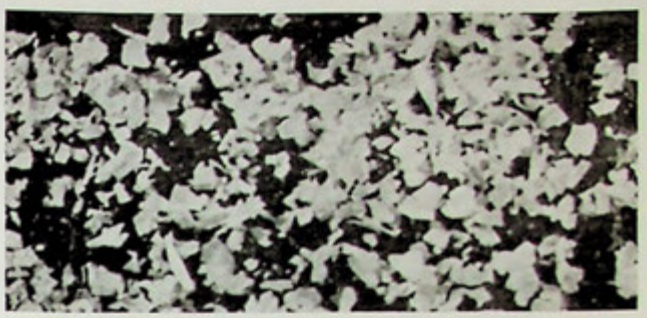


Fig. 177. Finished Bran From Duster

following the first low grade rolls bolts out flour and tails to shorts (in some sections of the country called "middlings," commercially). Sometimes the tailover of the last reel is called "red dog," and formerly it was designated "ship stuff"—for some reason not entirely clear. Oliver Evans intimates that it was used in making "ship" biscuits—that is, a sort of "hard tack" for sailors.

A great many arbitrary definitions of wheat feed products have been promulgated by the Association of American Feed Control Officials, and the crude fiber content appears to be the significant part of each definition. The requirements for "flour middlings" and "gray shorts" are identical, but "standard middlings" may have a much higher crude fiber content than "brown shorts." The percentage allowable in "white shorts" or "white middlings" is 3½, but the limit for "wheat red dog" is 4%. Obviously, the operative miller sees more confusion than anything else in these definitions, but all may be necessary to merchandising.

Before finishing this cursory examination of the various operations of the milling process and some of the products and by-products of these operations, attention should be called to the materials illustrated in Figs. 174, 176 and 177, the last of which illustrates the finished bran from the dusters. Close observation will reveal the presence of at least one thin oat in the small amount of fifth break stock, and others are more distinctly visible in the scalp to bran duster and the finished bran from the duster. That there were other undesirable materials besides oats, small barley and the like in the mill-mix is plainly indicated by Fig. 178. Here is shown the liftings made by an efficient aspirator from the wheat just before the first break rolls of a representative modern mill.

It is true that the amount of these dirty materials was not great, compared with the weight of the wheat, but none of them could have improved the quality of the flour produced. No special aspiration was given the wheat stream in the program we have been studying, which fact naturally accounts for the presence of the frayed thin oats in the finished bran. It may well be assumed that some of the other undesirable particles visible in Fig. 178, which apparently did not hold together until the bran duster was reached, were incorporated in the flour.

Flour and the Wholesale Baker

(Continued from page 11a.)

with the modern large mixers. After the best time is determined, and assuming that the flour is uniform, there is no difficulty in maintaining uniform quality even with a reasonably "low mixing tolerance" flour.

Furthermore, the amount of milk solids (both skim and whole) in bread has been increased considerably in the last few years. These high percentages of milk solids tend to increase the required mixing time (Bohn and Bailey, 1937). Very inferior bread is produced if flour of high mixing requirements receives insufficient mixing. As mixing times are lengthened, increased power and labor costs result. Thus, from a pan bread baker's standpoint, flour requiring excessive mixing is just as undesirable as flour which shows an undue sensitivity to mixing.

Literature Cited

Hlush, M. J., and Sandstedt, R. M. 1937. "An Improved Method for the Estimation of Flour Diastatic Value." Cereal Chemistry 14:189-202.

1934. "Yeast Variability and Its Control in Flour Gassing Power Tests." Cereal Chemistry 11:383-393.

Bohn, L. J., and Bailey, C. H. 1937. "Physical Properties of Flour Doughs." Cereal Chemistry 14:335-349.

Davis, C. F., and Worley, D. F. 1934. "Correlation Between Diastatic Activity and Gassing Power in Commercial Flours." Cereal Chemistry 11:534-544.

Fig. 178. Materials Removed From Clean Mill-Mix Just Ahead of the First Break Rolls
(Courtesy Hurt-Carter Company)

Mercury—the "Liquid Metal"

"MERCURY," says a recent bulletin published by Allis-Chalmers, "is probably working for you when you ride a street car, cook a meal, or listen to your radio. For mercury arc rectifiers are used by street car and subway systems, by radio stations, and in aluminum manufacturing plants. And mercury arc rectifiers work hard for their users, bringing them the savings that inexpensive power affords."

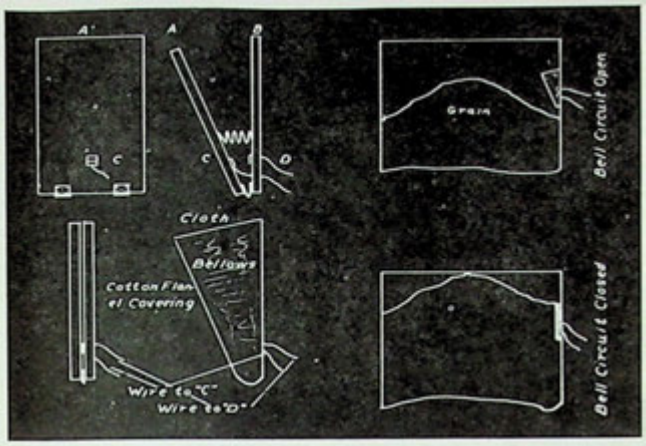
At the beginning of the 20th century, most electric generating stations supplying power for street cars and mills and factories furnished "direct current" exclusively. Voltages were low—a maximum of around 600. Street lights were mostly of the "arc" type, employing continuous, or direct, current. These lamps were wired in "series"—that is, they were in "tandem." The generators had to furnish high voltage current, and in doing so each machine burned up a pair of copper "brushes" every few hours. Alternating current would not operate the lamps, nor could it be used in connection with variable speed, reversible motors, such as are required to drive street cars and the like. Continuous, or direct, current motors are used in this class of work today, but instead of sending out low-voltage current through heavy, expensive wires, the mercury arc rectifier enables the transmission of high-voltage alternating current for great distances and its transformation to direct current near the point where it is to be used by a motor that can be reversed at will and run at various speeds.

The literature before referred to explains that the mercury that is to be vaporized in a rectifier is as susceptible to anything unclean as is a patient on an operating table. Workmen in the A-C rectifier shops in the Milwaukee plant comport themselves as surgeons do in hospital operating rooms. After the mercury is in place and the rectifier is sealed it needs no further protection or attention. Just why an alternating electric current is "rectified"—transformed to direct current—by mercury vapor in a vacuum is not easy to understand, but, for that matter, neither is the most simple electric motor or generator easy to understand. Men have learned a great deal about what electricity will do under certain circumstances, and the immediate cause of its behavior is often well known, also. There still remains a good deal of mystery concerning the fundamental nature of electrical phenomena, however, but this, fortunately, does not seem to retard development in the field seriously.

—BREAD IS THE STAFF OF LIFE—

Bin Alarm

A TROUBLE-FREE bin alarm can be made very easily with two boards, a pair of hinges, a couple of strips of sheet iron and a piece of cotton flannel. Cut the two boards just alike and hinge together as shown in the sketch. Bore



A Simple Alarm for Bins

two small holes in board B and run a length of flexible insulated wire through each. Make two metal clips by bending strips of spout lining about 1" wide. Fasten one to board A and one to board B with screws, using a washer for the screws and clamping the skinned end of each wire to its clip, between the washer and the metal. Now arrange a spring to hold the boards apart, as shown. A spring such as is used on stocking dust collectors will do nicely. Next, cover the whole thing with heavy cotton flannel, so that it will resemble a bellows. The cloth will keep any grain from getting between the boards and against the metal clips.

Installed near the top of a bin, as shown in the sketch, the two wires are put through holes made for them and connected to a bell circuit. With the boards apart the circuit will be open. When the bin becomes nearly full the bellows will be compressed, bringing clip C and clip D together. The circuit will then be closed, and the bell will ring until the contact is broken, or until the circuit is broken by a hand-operated switch.

Clean, Dry Steam Pays

(Continued from page 12a.)

easier for impurities to be deposited. Reduced effective pipe cross-sectional area means more friction for the same quantity of steam, higher boiler pressure to compensate for this, and greater difficulty in keeping a steady head of steam under varying demands. And, of course, with the usual "cussedness" of inanimate things, the obstructions take place mostly in bends and other places which are hard to get at.

The need for one or more steam-traps in the lines to get rid of the condensed water is generally recognized, but a steam-trap is primarily designed to catch water already condensed. It will not, unaided, necessarily separate suspended droplets moving with the steam, nor all the foreign matter—though it does eliminate a good deal of both. For this reason, an improvement is to install a tank or receiver in the line connected at its lower end with a steam trap. The steam, entering the receiver, is slowed down and this allows much of the entrained matter to drop to the bottom and escape through the trap. The friction losses of such a device are low, but its main disadvantage is that the lowered steam pressure due to the expansion from the steam line into the greater volume of the receiver tends to condense some of the steam itself, and that sudden fluctuations of demand are apt to permit "carry-over" in spite of everything. This is because the capacity of the device for entrainment removal is largely a fixed quantity; and thus if the demand is suddenly doubled, for instance, it is no longer able to handle the extra rush without letting some impurities get by. The method is therefore somewhat of a makeshift except where the demand is quite steady. It is, however, often one of the least expensive ways of solving the problem.

A further modification, which considerably increases the entrainment removal efficiency, is the introduction of a series of baffle-plates between which the steam twists and turns, dropping some of its entrainment load at each change of direction. The main trouble with this plan is that the friction losses are considerably higher because of these sudden changes of direction. Another and somewhat more efficient way is to compel the steam to pass through a receiver in which is installed a spiral of metal sheet or plate. Since the direction is changed more gradually by passing around the spiral passage there is less friction; and the centrifugal force caused by the course of the steam still further helps to throw the entrained matter to the sides of the receiver, and thence out through the steam trap at the bottom of the tank. The friction losses, however, are still somewhat higher than is desirable.

From the above methods has evolved a design of steam purifier which depends wholly on centrifugal action, and which has therefore an exceedingly low friction loss combined with a high separating efficiency. This is known as a "centriflx" purifier. One of the chief advantages of relying entirely on centrifugal force instead of partly on baffling action is that the former increases proportionately to the mass or weight of the substance acted upon, and to the square of the velocity at which it moves. Thus, since water, scale, etc., are considerably heavier than steam, they are easily separated from it. Moreover, although sudden increases of demand tend to carry over proportionately greater quantities of entrainment, the centrifugal force increases proportionately as the

square of the velocity—thus although twice the steam demand would tend to carry over twice as much water, etc., the force tending to remove it increases four times.

The construction of a "centrifix" purifier consists of a compact hollow chamber whose sides are fitted with fixed tangentially-set vanes. The steam is thus given a whirling motion as it passes between these vanes, and the heavier entrained material and water are thrown outwards, the purified steam passing out from the center of the chamber to the steam line. At first sight it would seem that the whirling entrained matter would pass out again through the vanes, but this it cannot do because of the inward pressure of the entering steam. So it simply whirls outward to the point where the two forces balance each other until it finally falls to the bottom of the purifier and is drawn off through eject pipes to the steam trap. As a matter of precaution, there is an annular collecting channel at both top and bottom of the chamber, but naturally most of the entrainment passes to the latter.

The fact that all parts are readily accessible, and that all are fixed, and that the device is small enough to be passed through a manhole readily and secured in place by two studs, permits this type of purifier to be installed in the boiler itself, in a receiver, or in fact anywhere else in the steam travel which may be desired. By installing it in the boiler itself, entrainment is prevented from entering the steam lines at all, but an extra unit is often added at such other locations as are apt to collect condensed water or scale.

From the above it will be seen that the proper location and type of purifier, or purifiers, means actual dollars-and-cents savings. Sometimes these are startling; cases being known where a highly efficient purifier has saved the entire cost of its installation within a few months. In fact, the probable reason why the need for a purifier is less obvious than the need to stop a leak in a steam line is that the latter forces itself on the engineer's attention and the former doesn't.

——BREAD IS THE STAFF OF LIFE——

"Science"

(Continued from page 8a.)

bought, about how it is cleaned and tempered, and about the way the machinery is operated. The right kind of wheat is essential, and a good deal of skill is required in preparing the grain for the first break rolls and in keeping the mill "in balance." At best, you cannot expect to make as favorable a yield as a big, long-system mill, but it is known that small mills are operated profitably in spite of that. However, if good materials that should and could be made to go to the flour bin are allowed to go to feed, the chances are that some stuff that should go to feed will get into the flour.

I suppose that it is only natural for milling journals to neglect the small mills of the country in all the material they publish about the application of "science" to milling. The men who run these mills are not very "important." They seldom contribute papers at millers' conventions and they don't very often contribute articles for publication. It may be that most of them are pretty scornful about anything referred to as "science"—and it may be that that is the reason why so many small mills die. As for me, I believe that a little encouragement and a little attention would work wonders with these men. Many of them are not highly educated, but it would be a mistake to think that they don't as a rule possess a pretty high order of native intelligence. Most of them are doing their best to make an honest living and serve society by serving well their own communities.

Common sense "science" is of just as much benefit in the little mill as in the big one, and as things stand, the little one needs it more. The wheat ground is just as mysterious in one case as another, and it is just as important to satisfy the wants of customers in one case as another. The most of the small mill's customers are not going to be influenced by "specifications" of flours. They are not going to ask about ash and protein and diastatic activity and viscosity, but that doesn't mean that the miller himself can ignore these things completely. They do have an effect on baking, and it is the way a flour acts in baking that counts.

——BREAD IS THE STAFF OF LIFE——

Packaging

(Continued from page 3a.)

than those commonly sold in cities, there is a tendency noted even with her to buy in smaller amounts.

This trend has, of course, resulted in a radical change in packaging methods. Both cotton and paper bags are used for packing the small units. Paper, especially, has come to the front as a flour container as the popularity of the small packages increased. There is every reason to believe that family flour will continue to be bought in small quantities, and that this tendency will increase as time goes on. Consequently, the problems confronting the milling industry in connection with it will undoubtedly continue indefinitely.

Chief among the difficulties that had to be solved in developing small flour packages were those of filling and handling them at the mill, convenience of use in the kitchen, and the sales qualifications of the package itself. By the introduction of various devices, bag manufacturers have satisfactorily solved all these problems.

Modern bag filling machinery has been perfected to a point where all units, regardless of their size, are quickly and efficiently filled. In the case of the smaller ones, the entire operation is performed by machinery, and the closed containers can be carried away on traveling conveyors to any part of the plant desired. The speed at which this work is done has materially reduced overhead costs, and the machinery thus developed has made possible the satisfactory progress of the small package business.

In recent years a great deal of attention has been directed toward increasing the convenience of the flour package in the kitchen. Different ways of sealing bags have been developed, so that, after they have once been opened, they can again be tightly closed. The advantages of such packages are obvious. Not only are they more easily handled, but the flour is kept in far better condition.

But no phase of flour packaging has advanced more than has the improvement in the sales value of the containers. Whereas originally chief consideration was given to providing a protective package for the product, in later years as much attention has been directed toward providing attractive containers that will have real value at the point of sale. It is now realized that packages are an important part of any merchandising campaign, and that unless they perform their functions properly no sales effort can reach its maximum efficiency.—W. G. M., Jr.

——BREAD IS THE STAFF OF LIFE——

Do unto others as though you were the others.—*Elbert Hubbard.*

camerama

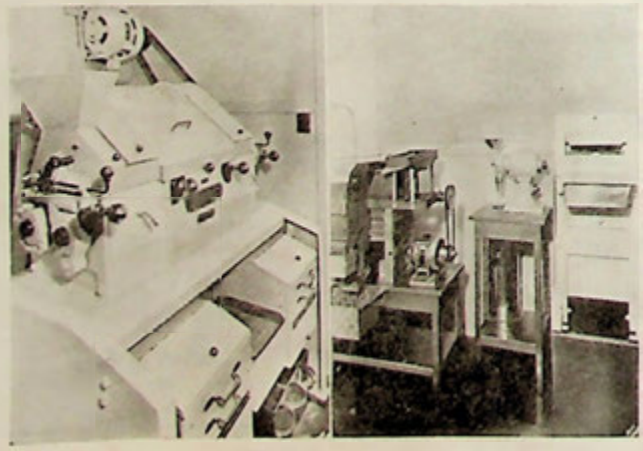
Gleaming with a kitchen-like brilliance, the pictures at the lower left and right hand corners of this page take you on a tour through the modern laboratory of Tri-State Milling Co., Rapid City, South Dakota. Stewart N. White, above at left, is chief chemist.

Perhaps this picture crept in just to keep things from becoming too technical. This unusual student of milling, you'll note, adopts the conventional method of examining sifter stocks. Yes, the background was blacked out; spouts can be seen in a mill any day.

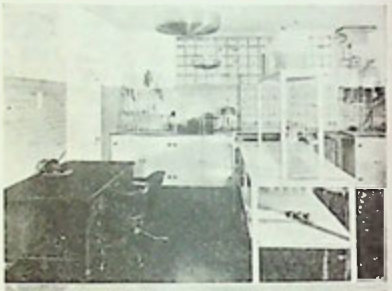
A VERY OLD MILL . . . AND A . . . . VERY NEW LABORATORY

CENTRAL theme of the inset, and background for the adjoining snapshots above, the now idle Lake Mills, located near Adrian, Mich., is well over a hundred years old; the laboratory photos below and to the right were taken in a plant barely two years of age. Small figures in the snapshots are A. M. Marsh, milling engineer for Allis-Chalmers, left, and Edgar S. Miller, technical editor of this journal, snapped recently as they stopped to inspect the old mill, once owned and operated in partnership by Mr. Marsh's father. Originally a water power and stone mill, the aged plant, which served as the milling engineer's first technical "school," gradually changed to a roller process run by water and a booster engine. The photo which shows the entire mill was taken when the plant was still in operation some time ago.

A laboratory was probably never considered at the old Lake Mills; the new air-conditioned, glass-bricked plant of Tri-State Milling Co. takes wholehearted advantage of modern cereal chemistry's facilities. The air-conditioned lab is divided into three sections—experimental milling and baking, and analytical. In it, rapid moisture and ash tests, protein determinations, fat extractions, crude fiber extractions and maltose determinations—in fact, all the tests that are used today—are made. Milling equipment includes a Buhler mill, sample cleaning and scouring units, a small bleacher and a sample grinder. The bakery houses a rotary oven, high-speed mixer, and other up-to-date experimental necessities.



Looking West → From Entrance



Another View of → Analytical Room

From Corner to → Corner of Lab.

View Through → Milling and Baking Rooms

Left: Buhler Mill

Right: Sample Cleaning Room