

## WHAT WE EAT.

The adulteration of food and drinks has become almost as general as the use of these articles itself. Scarcely an article used by men in civilized countries has escaped this process where it was possible to unite some cheaper substance with it. Flour, coffee, tea, sugar, butter, and a hundred other articles, are well known to be the commonest articles that undergo this adulteration process. The methods have been so often exposed that the public are tolerably acquainted with the manipulations these substances undergo at the hands of experts.

Bread, truthfully called the staff of life, is no exception to this rule. The New York Post has been giving this subject some attention, and has published the result of some remarkable investigations, which are worthy the close attention of thoughtful people.

From its recent exposure of the use of burnt alum in some brands of baking powders, in place of cream of tartar, the following extracts are mainly taken:

Pursuing the investigation of the quality of the food sold in this city, the representative of the *Evening Post* took up baking powder as one of the articles in most general use in our households. It is used by nearly every family in the city, and it is naturally of great importance to those who eat the food made with it to know whether it contains anything injurious to health.

There are certain constituents of good baking powder, which may be regarded as entirely free from danger. They consist of pure grape cream of tartar, bicarbonate of soda, and carbonate of ammonia. The cream of tartar unites with the other two ingredients, and carbonic acid gas is thrown off producing the same effect as yeast in a much shorter time. It has been found, however, that alum will also unite with the other two articles, and carbonic acid gas will be produced. As alum costs less than three cents, while cream of tartar costs more than thirty cents, a pound, it is easy to see why alum is substituted for the latter by some baking powder manufacturers. It is admitted by all medical authorities that cream of tartar leaves no injurious substance in the bread; alum, on the other hand, is in itself an astringent, and there is wide and deep-seated prejudice against its use. In England and other countries the adulteration of food with alum is forbidden by law under heavy penalties. The chemical effect of alum used in bread to whiten it is to form two salts of alumina—the sulphate and the phosphate of alumina. When used in baking powder the alum forms a third salt, the hydrate of alumina, as well as the other two. This hydrate of alumina is far more easily soluble than the other two; hence any objection that may exist to the use of alum alone in bread applies with greater force to its use in baking powder. This fact can be proven by the following named authorities:

Parke is the leader of the new school of hygiene in England. In his "Treatise on Hygiene," he says: "Looking then to the positive evidence, and the reasonableness of that evidence, it seems to me extremely likely that strongly aluminated bread does produce the injurious effects ascribed to it." These effects, as he previously states, are indigestion, griping, constipation, and kindred troubles resulting from irritation of the mucous membrane, produced by the astringent properties of alum.

In Dr. Hammond's work on hygiene, written in 1860, the following passages occur: "Alum acts by rendering the albumen (in the bread) less soluble." The use of alum in bread is injurious, both because it tends to conceal the bad quality of the flour employed, and because it is capable of exercising an injurious effect upon the bread by rendering it indigestible. It is also probable that the continued ingestion of alum is calculated to disorder the healthy action of the digestive system."

Persons who have not strong constitutions, growing girls, young children, and nursing mothers, are particularly liable to the evil effects produced by this use of alum. Heartburn and the prevalent forms of indigestion are often solely traceable to the action of alum on the delicate coats of the stomach. Those who think the size of the dose is too small to be dangerous, will see by the accompanying analysis that the dose is not so small after all;

moreover, even a small dose may have serious results.

To make sure of knowing the action of alum, the *Evening Post's* representative obtained the following expressions of opinion as to its effect when used in baking powder from some physicians of New York of the highest reputation and ability.

Dr. William A. Hammond, formerly Surgeon-General United States, of No. 43 West Fifty-fourth Street, expressed himself as perfectly certain of the injurious effects of alum, whether used alone to whiten bread, or as an adulterant of baking powders. Alluding to the claim advanced that the alum was neutralized and changed into an insoluble salt, he said that this was a wholly improbable assumption, since such a perfect change could not take place unless the amounts of the alum and the bicarbonate of soda were combined in the exact chemical ratio necessary for each to absorb all of the other. Not only was this impossible in the manufacture of large quantities of baking powder, but the homogeneous character of the compound could not be exactly maintained throughout the whole mass, and therefore there would be sure to be a certain amount of free alum in any bread made with an alum baking powder. But even if the exact proportion were maintained, the salts formed would retain their injurious properties, as they would be dissolved in the gastric juice. The gastric juice contained not only lactic acid, but a large amount of hydro-chloric acid and both the sulphate and hydrate of alumina would be dissolved. The phosphate might not be, but in that case the bread would be deprived of one of its most desirable ingredients, making the use of alum not only dangerous to the stomach, but deteriorating to the food.

"The hydrate of alumina," Dr. Hammond said, "would certainly be injurious to the mucous membrane. It would inevitably tend to constipate the bowels and interfere with digestion; and anything that tends to render the albumen of the bread insoluble, and therefore takes away from its nutritive value, is injurious."

Dr. Willard Parker said that if alum was substituted for cream of tartar in baking powder, in his opinion such powder would be injurious to health.

Dr. Alonzo Clark considers that alum has its uses, but it should not be ignorantly taken into the stomach in food. A substance which can derange the stomach, and in certain cases produce vomiting should not be tolerated in baking powder.

Dr. Le Grand N. Denslow, of No. 225 West Twenty-third street, gave the following as his opinion on this subject: "Bread containing the salts of alum, which are freely soluble in the gastric juice, is undoubtedly prejudicial to health, the salts acting as irritants to the stomach."

Having obtained the foregoing medical opinions, the reporter investigated a number of brands of baking powder. The Brooklyn Board of Health and the New York Board of Health have both ordered an official investigation of baking powder, and the Sanitary Superintendent of the Brooklyn Board has made his report, in which he says: "From a careful examination, I am satisfied that the weight of evidence is against the use of alum in baking powders, and that the risks incurred in its use are too great to be incurred for the sake of cheapness alone. The mucous membranes of the stomach and the intestinal canal is a delicate structure, and materials which would produce no effect on the outside skin might irritate and inflame these organs."

The analysis of the various baking powders, as officially reported by the Brooklyn Board, reveals only two brands containing alum being sold in that city—Dooley's and Patapsco.

As to the cream of tartar powders, the same report mentions the Royal Baking Powder as free from alum, or any other substance injurious to life or health.

There are probably more than five hundred kinds of baking powder manufactured in this country, and while some of them are sold from the Atlantic to the Pacific, the majority have only a local sale near their respective places of manufacture. Through Dr. Henry A. Mott, Jr., the well-known chemist, one of the most competent, trustworthy, and careful experts of this country, the following analyses were obtained, showing the presence of

alum in large quantities in many of the baking powders having a wide sale. Dr. Mott kindly furnished not only the results of his own analyses, but also those of several chemists of high professional standing, including Professor Henry Morton, President Stevens' Institute of Technology; Professor R. W. Schedler; Dr. Stillwell, of Walz & Stillwell, analytical chemists, this city, and Professor Patrick, of Missouri.

Dr. Mott's report is as follows:

Dear Sir,—In accordance with your request, I herewith embody the results of the analyses of baking powders, in all of which alum was found as an ingredient:

"GRANT'S".....contains Alum. (J. C. Grant, Philadelphia.)  
 "INVINCIBLE".....contains Alum. (Snyder Bros. & Co. Cincinnati.)  
 "DOOLEY'S".....contains Alum. (Dooley & Bro., New York.)  
 "PATAPSCO".....contains Alum. (Smith, Hanway & Co., Baltimore, Md.)  
 "CHARM".....contains Alum. (Rohrer, Christian & Co., St. Louis.)  
 "ANDREWS' REGAL".....contains Alum. (C. E. Andrews & Co., Milwaukee.)  
 "QUEEN".....contains Alum. (Bennett & Sloan, New Haven, Connecticut.)  
 "VIENNA".....contains Alum. (Church & Co., New York City.)  
 "ORIENT".....contains Alum. (Crouse, Walrath & Co., Syracuse, N. Y.)  
 "AMAZON".....contains Alum. (Erskine & Erskine, Louisville, Ky.)  
 "LAKESIDE".....contains Alum. (C. O. Perrin, Chicago, Ill.)  
 "TWIN SISTERS".....contains Alum. (Union Chemical Works, Chicago, Ill.)  
 "SUPERLATIVE".....contains Alum. (A. W. Zeitlow & Co., New York.)  
 "KING".....contains Alum. (Jewett & Sherman Co. Milwaukee, Wis.)  
 "WHITE LILY".....contains Alum. (Jewett & Sherman Co. Milwaukee, Wis.)  
 "MONARCH".....contains Alum. (Ricker, Cramble & Co., Milwaukee, Wis.)  
 "ONE SPOON".....contains Alum. (Taylor Manufacturing Co., St. Louis.)  
 "IMPERIAL".....contains Alum. (Spragues, Warner & Griswold, Chicago.)  
 "HONEST".....contains Alum. (Schoch & Wechsler, St. Paul, Minn.)  
 "ECONOMICAL".....contains Alum. (Spencer Bros. & Co., Chicago.)  
 "EXCELSIOR".....contains Alum. (L. E. Taylor, Chicago, Ill.)  
 "CHARTERS".....contains Alum. (Thomson & Taylor, Chicago, Ill.)  
 "GIANT".....contains Alum. (W. F. McLaughlin, Chicago.)  
 "RI HA'D'S QUEEN".....contains Alum. (Star Chemical Works, Chicago.)

Yours very truly,  
 HENRY A. MOTT, JR.,  
 Ph. D., E. M.

Having obtained the foregoing, the reporter called at the office of the Royal Baking Powder Company, No. 171 Duane Street, the manufacturers of the Royal Baking Powder, a brand which the report of the Brooklyn Health Board revealed to be pure. Mr. J. C. Hoagland, President of the Company, gave the following replies:

REPORTER. "What is the cause of the present excitement about baking powders?"

MR. HOAGLAND. "It is due to the substitution of alum for cream of tartar by some manufacturers."

REPORTER. "Have you ever used any alum in the Royal Baking Powder?"

MR. HOAGLAND. "No, sir."

REPORTER. "But I find that it is used by others. What is it used for?"

MR. HOAGLAND. "I presume because it is cheaper than cream of tartar, which it replaces."

REPORTER. "You would, therefore, obtain a larger profit by using alum than by using cream of tartar?"

MR. HOAGLAND. "Yes, sir, for a time such substitution would more than double our profits."

REPORTER. "Why, then, do you not use it?"

MR. HOAGLAND. "For two reasons: first, the authorities on this point are so positive and conclusive that the continued use of alum in this way is dangerous to health, that we could not conscientiously use it; if others choose to take risks on the public health, we shall not follow them, preferring to continue the use of pure grape cream of tartar, which is demonstrated to be wholesome; second, our experience during twenty years has satisfied us that that which is best for the public is best for us. We cannot afford to peril the reputation of the Royal Baking Powder."

Other interviews were had, all to the same general effect, namely, that alum is used by many manufacturers to cheapen their powder and enable them to undersell their competitors. Many of them are probably ignorant of the evil effects of alum on the system, while others are indifferent so long as they make money, and no one can be

said to have dropped dead from taking their powder.

Dr. Mott, the Government Chemist, in his review of this subject in the *Scientific American*, makes special mention of having analyzed the Royal Baking Powder, and found it composed of wholesome materials. He also advises the public to avoid purchasing baking powders as sold loose or in bulk, as he found by analyses of many samples that the worst adulterations are practiced in this form—the label and trade-mark of a well-known and responsible manufacturer, he adds, is the best protection the public can have.—*Harper's Bazar*.

## Correspondence.

## Accidental Death.

CROYDON, Morgan Co.,  
 Feb. 2d, 1879.

## Editors Deseret News:

By request, it is my painful duty to write you the cause of the demise of an esteemed brother, Thomas Price, while he was working in the coal mines, Grass Creek, Summit County. On the 6th of January a piece of coal (about five cwt.) fell and struck his back, from which injury he died on the 29th ult.

During his sufferings he was calm, patient, and a murmur did not pass his lips; he died as he had lived, a faithful Latter-day Saint, well respected by all who knew him. He was a hard working man, a loving, kind, and indulgent husband and father, also a good citizen. He left an affectionate, faithful wife and four children to mourn his loss.

He was born Dec. 24, 1828, at Landfice, South Wales. When 17 years old he joined the Church of Jesus Christ of Latter-day Saints, emigrated to Utah in the year 1851. For some years has been a member of the High Priest's Quorum.

Yesterday a large concourse of people assembled to pay their last respects, by attending the funeral. Appropriate addresses by Bishop John Hopkin, Elders S. Edwards and E. Swann, after which the body was consigned to the silent tomb to wait a glorious resurrection.

Your brother in the gospel,  
 GEO. K. BOWERING.  
 N. B.—*Millennial Star* please copy.

OGDEN CITY,  
 January 27th, 1879.

## Supt. John Taylor:

Dear Brother.—In accordance with your appointment, I left Ogden City, Jan. 5th, 1879, for the purpose of visiting the schools of Morgan and Summit counties. My plan of procedure was as follows:

I first called a trustees' meeting, where a programme could be arranged, with the object of facilitating travel and ascertaining what schools were in session. At the close of my tour in each county, I again appointed a meeting, to which the trustees, teachers and leading men were invited. My object in calling this meeting was to tell the teachers and trustees the defects of their schools and school-houses, and to counsel with them as to what would be the best means of improving them, rather than to publish a man's name or a district abroad. I take pleasure in stating that these meetings were always attended by the Presidency of the Stake, the Bishops, nearly all the trustees and school teachers of the county, as well as men interested in the cause of education.

At the first meeting referred to, we arranged to visit two schools a day and hold meeting every evening at the settlement where we visited in the afternoon. These meetings were always attended by the youth and the aged, by means of which we gained access to the ears of the people, which otherwise we could not have done. The houses were generally filled and the people manifested great interest in the education of their children. Realizing also that the smallest and poorest districts were usually neglected on occasions like this, I determined that so far as my feeble efforts were concerned, I would labor where the greatest amount of good could be accomplished, and where the most assistance was needed; this, of course, required more time than I at first anticipated, but still no district felt itself neglected.

Morgan County, as a rule, is well supplied with school houses, and taking into consideration the loss of crops, year after year, by frost and grasshoppers, I question if there is any county in the Territory any better supplied. The smallest districts numbering only from 12 to 20 families, are furnished with nice commodities and mostly brick schoolhouses, well finished on the outside, and with an aperture in the ceiling for ventilation. But, I am sorry to state that in many instances, the children's comfort on the inside has been neglected, and the house has been seated more for meeting purposes than for accommodating the children at school. This is, of course, wrong, when we remember that the parents are only occupying the house but a little over two hours on the Sabbath day, while the children have to be in school six hours a day for five days in the week, and then we expect them to attend the Sabbath school and all the rest of the meetings besides. I question if plain decent furniture would cost much more than forms, and would seat almost as many. Many of the houses also lack charts, globes and blackboards; in such cases, the teacher has nothing but the dry text book to interest his pupils. Couple with that an old-time teacher, or a man who has never had any experience in teaching, nor qualified himself for the office, by attending a school where he might get a good practical system, and is it any wonder that in many instances we are compelled to drive our children to school with the rod, where the teacher again receives them "with frown to make a statue thrill," and with a similar weapon to the former to bid them welcome? Why can we not smile on our children; they in their innocent glees, are sent to us from the courts above, and God will surely smile on us if we treat them as men and women in embryo. The result from the first method is, that our young men and ladies are not found there at all, and only the little ones who cannot help themselves, are immured between those dusky walls. Garnish the inside of the schoolhouse and get a teacher who will govern with kindness instead of the rod, and who understands his profession as the mechanic must who undertakes to make a beautiful bureau, and see if we will not soon have a change.

The schools were all in session, but as already intimated were mostly attended by the little ones with but few exceptions. The teachers were mostly young men and young ladies, born and educated in Utah, and what they lacked in qualification, however, was generally made up in exemplary habits. The best school taught, in my estimation, is the one at North Morgan under the direction of Miss Rhoda Slate, a young lady who has been attending the University for two years. She appears to have a natural tact for teaching by which she has won the good feelings and respect of pupils and parents.

President Smith and the leading men are anxious to promote the educational interests of the county; they have realized for some time the necessity of establishing a high school or seminary, where their youth might be educated, instead of depending on transients or sending their children abroad, for, of course, it is cheaper to bring a good teacher into the county, and thus give all a chance of an education, than to send a few away from home subject to the temptations now existing in our cities without the parental care to guard them. To depend on the University for teachers is very good, so far as it goes, but we should remember that all who are sent will not return teachers; a man may be well educated and then be not fit to teach school. The bishops and trustees were always present when we visited their schools, except in one instance, at Wanship, and all appeared to realize the necessity of such an institution, and I believe ere long both Morgan and Summit Counties will educate their advanced students at home. The children appeared bright and intelligent and comely in dress; indeed I never have in all my travels in the New World or the Old seen any fairer faces or any brighter eyes nor any better dressed children than these two counties exhibited.

The school-houses of Summit County were rather inferior to those of Morgan, but the character of the schools was somewhat of a higher grade. I found more of the young men and young ladies enrolled, and the students are, I think,