[New York Tribune.]

Interesting Tests Made by the Government Chemist.

Dr. Edward G. Love, the present Analytical Chemist for the Government of the United States has recently made some interesting experiments as to the comparative value of baking powders. Dr. Love's tests were made to determine what brands are the most economical to use. And as their capacity lies in their leavening power, tests were directed solely to ascertain the available gas of each powder. Dr. Love's report gives the following:

"The prices at which baking powders are sold to consumers I find to be usually 50 cents per pound. I have therefore calculated their relative commercial values according to the volume of gas yielded on a basis of 50 cents cost per pound."

NAME OF THE BAKING POWDERS.	AVAILABLE GAS. CUBIC INCHES PER EACH OUNCE POWDER.	COMPARATIVE WORTH PER POUND.
"Royal" (cream tartar powder)	127·4	50 cts.
"Patapsco" (alum powder)	125·2	49 "
"Rumford's" (phosphate) fresh	122·5	48 "
" " old	32·7	13 "
"Hanford's None Such"	121·6	47¾ "
"Redhead's"	117·0	46 "
"Charm" (alum powder)	116·9	46 "
"Amazon" (alum powder)	111·9	44 "
"Cleveland's" (short weight ¾ oz.)	110·8	43 "
"Czar"	106·8	42 "
"Price's Cream"	102·6	40 "
"Lewis's" condensed	98·2	38½ "
"Andrews' Pearl"	93·2	36⅝ "
"Hecker's Perfect"	92·5	36 "
Bulk Powder	80·5	30 "
Bulk Aerated Powder	75·0	29 "

NOTE.—"I regard all alum powders as very unwholesome. Phosphate and tartaric acid powders liberate their gas too freely in process of baking, or under varying climatic changes suffer deterioration."

[New York Tribune.]

Alum Baking Powders in Court.—Interesting Testimony of Scientific Men.

Within the past two years a bitter controversy has been waged between manufacturers, on account of the use of alum as a cheap substitute for cream of tartar, by many manufacturers of baking powders. The handsome profits yielded by using the substitute have induced dealers as well as manufacturers to push them into the hands of consumers, sometimes under definite brands, frequently by weighing out in bulk without any distinguishing name.

Are such powders wholesome? The Royal Baking Powder Co., who make a cream of tartar baking powder, declared that they are injurious to the public health, while others who make alum powders claim that they are not. The whole matter as to the effects of these alum powders has finally been brought into the courts, and the case was tried in the Superior Court of New York city before Chief Justice Sedgwick, reported substantially as follows in the New York *Sun*:

CONCLUSION OF A LITTLE TROUBLE BETWEEN A CHEMIST AND AN EDITOR.

The suit of Dr. Henry A. Mott against Jabez Burns, has brought to light the fact that this country produces at least forty-two different kinds of baking powders. Neither Burns nor Mott has been found guilty of making the baking powders, but Burns, who is the editor of a periodical called the *Spice Mill*, has been severely mulcted for libel in his efforts to make his paper spicy. Dr. Mott, it appears, is a chemist, and at one time was employed by the United States Government to analyze different specimens of baking powder which had been recommended for adoption to the Indian Bureau. Dr. Mott reported in favor of the cream of tartar baking powders for the Indians, and against the alum baking powders. The chemist analyzed forty-two kinds of baking powders.

The jury were out about half an hour. Then they came in with a verdict awarding Dr. Mott $8,000, to which the Court made an additional allowance of $150.

As the public have a large interest in the wholesomeness of whatever it is called upon to use as food, the following extracts are introduced from the testimony of some of the prominent men as to the injurious effects of alum powders:

DR. MOTT:

Q. Were you employed by the U. S. Government?

A. I was, sir; was employed as chemist, to analyze all the articles of food; to express an opinion as to the analysis of their healthfulness and purity.

Q. Please tell the jury the baking powders that you examined while in the employ of the government.

A. It would be difficult to remember them all; I could refer to my books; I examined twenty-eight powders; was given sixteen at first.

By the Court:

Give your best recollection.

Q. And one of the powders included was "Dooley's Baking Powder?"

A. Yes, sir.

Q. And the "Charm?"

A. Yes, sir; the "Charm" and "Patapsco."

Q. Please state in which powders you found alum.

A. I found alum in Dooley's "Patapsco," "Charm," "Queen," "Vienna," "Orient," "Amazon," "Lake Side," "Twin Sisters," "Superlative," "King," "White Lily," "Monarch," "One Spoon," "Regal," "Imperial," "Honest," "Economical," "Excelsior," "Chartres," "Grant's," "Giant."

Q. Recurring to the question that has been asked you upon this suit—the result of these examinations which you have made—is it your opinion that alum in these various compounds, in baking powders such as you have examined, is injurious?

A. It is my opinion, based upon actual experiments on living animals.

CHARLES F. CHANDLER, called on behalf of the plaintiff, being duly sworn, testified as follows:

Q. Dr. Chandler, you reside in the City of New York?

A. I do.

Q. Your business is that of a chemist?

A. It is.

Q. You are and have been Professor of Chemistry in several colleges?

A. I have.

Q. Please state how long that employment of yourself has been, and with what colleges you are now connected.

A. I am at present Professor of Chemistry in the Academic Department of Columbia College; the School of Mines, Columbia College; the New York College of Physicians and Surgeons, and the New York College of Pharmacy.

Q. You are President, also, of the Board of Health, are you not?

A. I am.

Q. In your various employments, have you had frequent occasion to examine the question of the wholesomeness of food, and the beneficial or injurious effects of its ingredients?

A. I have.

Q. I will ask you in regard to the use of alum with soda, in a baking powder, whether or not it is neutralized—is there any injurious constituent of alum left?

A. There is an injurious constitutent left after the mixture of alum and bicarbonate of soda.

Q. Without using any nicety of chemical terms, what is your opinion about the use of alum in a baking powder, in combination with bicarbonate soda and other ingredients, for raising bread—whether injurious or not?

A. I think it is dangerous to the digestive organs, and liable to produce serious disturbance of the liver of the individual making use of such powders.

HENRY MORTON, President of "Stevens Institute," called in behalf of the plaintiff being duly sworn, testified as follows:

Q. You are President of Stevens Institute?

A. I am.

Q. And have for many years been a chemist?

A. I have.

Q. Have you had occasion to examine the substances which are used in the composition of baking powders?

A. I have.

Q. Did you, some time ago, examine a sample of Dooley's Baking Powder?

A. I did.

Q. Is that it, sir? [handing can].

A. Yes, sir; that is it.

Q. Well, what kind of alum did it contain?

A. It contained potash alum.

Q. Did you make any extract of that alum, to show the kind?

A. I did; I extracted a large quantity of it as potash alum, and it is in that bottle which I have now here [showing bottle]; that is potash alum which came out of the alum baking powder that was in that can.

Plaintiff's Counsel offers said can of Dooley's Baking Powder in evidence.

Q. Now, sir, have you made any experiment in the bread made from baking powder, to see whether there was any soluble alumina in the bread itself?

A. I have; I took a portion of this powder and mixed it with flour in the directed proportions, and baked a small loaf with it; then I soaked this loaf—the interior part of it—in cold water, and made an extract, in which I readily detected, by the usual tests, alum—that is, alumina in a soluble condition.

Q. Does any baking powder in which any alumina salts enter, contain alumina, in your opinion, which can be absorbed in the process of digestion—are not such objectionable?

A. Very decidedly objectionable, in my opinion.

Q. Why do you say—from what system of reasoning do you make it out—that because alum is injurious, alumina is injurious?

A. Because the injurious effects of alumina, when it gets into the stomach and reacts on the organs, are the same; this hydrate of alumina meets in the stomach the gastric juices, and reacts with them the same as alum would; it forms, in fact, a kind of alum in the stomach with those acids, and whatever alum would do, it would do.

Dr. SAMUEL W. JOHNSON, Professor of Chemistry in the Scientific School, Yale College, being duly sworn, testified as follows:

Q. You have had much to do in the examination of substances that enter into food, and the adulteration of food?

A. More or less; yes, sir.

Q. After the use of alum with soda, in a baking powder, in your opinion, is there any injurious substance left?

A. In my opinion, there is an injurious substance left.

Q. What, sir, two years ago, was the prevailing opinion among scientific men, as to the effect of the use of alum in baking powders?

A. As far as my acquaintance with scientific men is concerned, my personal opinion is derived from my investigation and from reading; I should think the opinion was that alum, or any compound of alumina, would be decidedly injurious.

Q. Do I understand you to say that any baking powder in which there are aluminous salts, or any resultant from alum which could be absorbed in digestion, is objectionable and injurious?

A. Extremely so.

Prof. JOSEPH H. RAYMOND called, sworn and testified as follows:

Q. Would you be good enough to state your profession?

A. I am a physician, sir, and a professor of physiology.

Q. You also were, and have been for some time, Sanitary Superintendent in Brooklyn—is not that so?

A. I have, sir.

Q. Now, sir, I will ask you your opinion, from this experience, whether the use of alum with soda, in a baking powder, is injurious or not, in its physiological effects?

A. I consider it to be dangerous.

Q. You examined this question for the Board of Health in Brooklyn, some years ago, did you not?

A. Two years ago, sir, in December.

By the Court:

Q. What was the result of your investigation as to the use of alum in baking powder?

A. The result of my investigation at that time was this: that the changes which took place between the time that alum baking powder was put in the bread, and the time the bread was eaten, the chemical changes were so little understood by chemists, that as a physician and physiologist, I considered it a dangerous experiment.

Dr. Mott, the Government chemist, in his review on the subject in the SCIENTIFIC AMERICAN, makes special mention of having analyzed the Royal Baking Powder, and found it composed of pure and 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.

DECISIONS RELATING TO PATENTS.

United States Circuit Court.—Northern District of New York.

UNITED STATES STAMPING COMPANY *vs.* JEWETT *et al.*

Blatchford, J.:

1. Patent to E. A. Heath, No. 119,705, granted October 10, 1871, not anticipated by invention of Weber, the proofs failing to show beyond a reasonable doubt that Weber was prior to Heath.

2. Where the decree in a former suit against one license of a patentee was for a simple dismissal of the bill a claim that the plaintiff is estopped from suing another licensee will not be entertained.

3. Where a patent has been allowed and ordered to issue, and an assignment has then been made authorizing the Commissioner to issue patent to assignee, and patent issue to inventor, the assignment not having been recorded until after the issue of the patent, *Held* that the legal right to the patent became vested in the assignee on the recording of the assignment.

Our Trade with China.

Recent official reports show an encouraging increase in American trade with China, whose vast and undeveloped markets offer enormous opportunities for our manufacturers and farmers.

A few years ago wheaten bread was all but unknown in China. The multitudes of returning Chinamen carry home with them not only a knowledge of wheat but a preference for it. One steamship from San Francisco carried to China, last year, 1,400 tons of flour; and the entire shipment for 1879 was 235,789 barrels. The vast wheat fields of the Pacific coast are likely soon to find an ample market for their products among the millions of the Celestial Empire.

During the same year California found in China a market for half her quicksilver product, or 36,696 flasks. Of other products the total shipment from the country was not large, but the variety indicates great possibilities of future development. The exports to China for the year, the last for which official reports have been published, included clocks, to the value of $50,397; cottons, colored, $270,000; cottons, uncolored, $1,302,000; drugs and chemicals, $13,700; glassware, $14,000; silver bullion, $1,831,000; machinery, $9,000; other iron manufactures, $9,000; firearms, $17,000; lamps, $22,000; kerosene, $690,000; ordnance stores, $9,000; provisions, such as bacon and other meats, butter and cheese, etc., $42,000; refined sugar, $7,000; tobacco, $52,000; clothing, $10,000.

TO RENDER IVORY FLEXIBLE.—Ivory is readily rendered quite flexible by immersion in a solution of pure phosphoric acid (specific gravity 1·13) until it loses, or partially loses, its opacity, when it is washed in clean cold water and dried. In this state it is as flexible as leather, but gradually hardens by exposure to dry air. Immersion in hot water, however, restores its softness and pliancy. The following method may also be employed: Put the ivory to soak in three ounces nitric acid mixed with fifteen ounces water. In three or four days the ivory will be soft.