

August 6, 1927

Mr. George Brown,
452 Eighth Street,
Niagra Falls, N. Y.

My dear Mr. Brown:

I was very much interested in your letter in which you claim that by a process of ultra violet treatment of milk you could destroy 94 to 99 per cent of the bacteria by ultra violet irradiation under commercial conditions. Personally, I am very skeptical of these results, especially of your claim that with this degree of sterilization the vitamins of the milk were unchanged. Vitamin A is very susceptible to ultra violet irradiation and as prolonged exposures or high intensities are necessary for killing the bacteria, it is quite certain that a good share of the vitamin A would be simultaneously destroyed.

I think you appreciate the fact that there are very few people in position to make determinations of the vitamins present in milk and other food materials. It not only requires a great deal of labor but considerable skill in order to obtain reliable results. It is my impression, therefore, that you have been more or less misled, but nevertheless I do not wish to discourage you before I have all the data on which you base your conclusions before me for evaluation.

Wishing you much success in your experiments, I am

Sincerely yours,

George Brown,
452 8th St. Niagara Falls, N.Y.
27th July 1927.

Professor Steenbock
Wisconsin State University.

Permanent address, after July.
George Brown
22 Calumet Ave.
Montreal, Canada.

Dear Sir,

Having been invited to U.S.A. from Montreal, Canada, by Dr. H. Burrell & Co. Inc. of Little Falls, N.Y. in connection with a scheme for sterilizing and vitamining milk, by ultra violet rays irradiation, I wish to ask if you are interested?

My scheme is commercially feasible for treatment of large volume. I use film methods.

Am of necessity anxious to make money by scheme (am scotch), yet I have determined to subserve this desire, to a large extent, so that I may find ~~my~~ do something for the Public-Good.

Personally I have done almost no laboratory work (I am a mechanic) Dr. W. H. Finney, 220 South Maple Drive, Beverly Hills, California has made tests of milk treated after my method, and at my request, for Milk Producers. In one case killing 99.65% of Bacteria. Dr. Maclean & T. D. Donald, Montreal, Analysts, made tests after treatment, finding 94% of Bacteria killed. Of former test mentioned, vitamins D was increased, others unchanged. ?
Of the latter ^{tests} I was told other results were very good.

Should like to know of your methods, and shall thank you for the No. and date of your patent specifications for U.S.A. If you are disposed to give same, I shall be pleased to forward particulars of my scheme, upon request.
Yours Truly, George Brown



BRUNER DAIRY COMPANY

KENOSHA, WIS.

February 1st, 1928

Dr. H. Steenbock,
Dept. of Agricultural Chemistry,
University of Wisconsin,
Madison Wis.

Dear Dr. Steenbock:

Professor Burke of the Milk Dealer has referred us to you. We inquired of him relative to ultra-violet light effect on milk. We are planning on rebuilding our milk plant and our cooler will be located near the roof. We were planning on using a skylight and thought perhaps glass that allowed ultra violet rays to pass thru might have a beneficial effect on the milk exposed to it.

Of course the milk would be exposed for only a short time and perhaps it would have no effect worth considering. But if the vitamin content of milk can be increased by using this kind of glass or using stronger artificial ultra violet light, we are going to consider using it.

Your opinion will be appreciated. We are thanking you in advance and are awaiting your reply with interest.

Yours very truly,

BRUNER DAIRY CO.

By

H. A. Bruner
H. A. Bruner

February 7, 1928

Mr. H. A. Bruner,
Kenosha, Wisconsin.

Dear Mr. Bruner:

There would be nothing gained by the use of a skylight permeable to the ultra violet rays of the sun in relation to the improvement of milk treated in your plant. It takes much stronger ultra violet radiation than is found in sunlight to be of beneficial action under the conditions which I expect exist in your plant.

The use of artificially produced ultra violet light on liquidated milk has not as yet been worked out successfully. Attempts have been made to use it for sterilizing the milk, but the exposure must be so prolonged that there is always produced a change in taste. To improve milk nutritionally the exposure must be sufficient to impart the desirable quality without destroying the flavor. This requires careful adjustment.

We have been fearful of the misuse of the process of the treatment of foods with ultra violet light and, as you may know, we have secured patents covering this which have been assigned to the Wisconsin Alumni Research Foundation. If you are further interested, I should advise you to write to Mr. George I. Haight, 1041, The Rookery, Chicago, Illinois who is president of the Foundation.

Sincerely yours,

HS:MT

Milk
Evap

Evap. skulls

Products

April 8, 1930

Memorandum on Conference with Mr. W. S. Slemmons of the Carnation Milk Company

Mr. Slemmons dropped into my office to see if there were any further developments in connection with the use of the irradiation process as applied to evaporated milk. According to my recollection, it was approximately a year ago that Mr. Slemmons requested me to come to Oconomowoc to inspect their plant, to see how the irradiation process could be effectively used in their manufacturing operations. I was unable to comply with his request, but his interest apparently has not abated.

According to figures furnished by him, the Carnation Milk Company manufactures approximately 5,000,000 cases of 100 pounds each, containing 3.8 pounds of butter fat. The company has five factories in Wisconsin. In addition, it has factories in Illinois, Michigan, Minnesota, California, Kansas, Oregon, Idaho, New York, Pennsylvania, Mississippi, Tennessee, Missouri, Texas, and Kentucky. It also has a factory in Ontario and a number of plants in Holland, Germany, and France, which operate in affiliation with the Pet Milk Company under some special arrangement.

The Carnation Milk Company is likewise engaged in the milling industry. It has taken over the Albert Milling Company, which manufactures breakfast cereals and flour.

In regard to information relating to the industry in general, Mr. Slemmons referred me to Dr. Frank E. Rice of Evaporated Milk Association, La Salle Street, Chicago. This association through its members encompasses 90% of the industry.

copy to-Dean Russell



J. G. Cherry Company

INCORPORATED 1899

Manufacturers

Creamery, Ice Cream and Milk Plant Equipment
Egg Cases and Egg Case Fillers

Cedar Rapids
IOWA, U. S. A.

WALTER L. CHERRY
President & General Manager
HERBERT T. CHERRY
Vice President
HOWARD H. CHERRY
Secretary
ERNEST B. CAMERON
Treasurer

Professor H. Steenbock
University of Wisconsin
Madison, Wisconsin

February 13
1928
File WRM-LH

Dear Professor Steenbock:

Thank you very much for returning to us promptly the correspondence we have had with Mr. Hoffmann and for the comments you make upon the method he employs for treating milk and the probable results from the use of his equipment. He has advised us that he would want \$1500 for his apparatus of sufficient size to handle 140 quarts per hour. On that basis, the cost would be prohibitive from a commercial standpoint and we know there would be no market for it in this country at that price.

One of the features which Mr. Hoffmann tried to bring to our attention is the fact that with the use of the Geissler tube, from which there is no heat radiation, it is still possible to secure the desired effect of the treatment of the milk without heating, with the result that there is no change in the palatability of the product as processed in his outfit.

Before we do anything in connection with purchase of any rights from Mr. Hoffmann, we certainly will follow the suggestion you make of having a technical man look up the patent situation very carefully with regard to the different types which have been previously proposed.

We are returning to you some correspondence which is addressed to you and which had become attached to the file of correspondence with Mr. Hoffmann, which we submitted, as we thought you would like to have this for your files.

Very truly yours
J. G. CHERRY COMPANY

W. R. McEwen

enc.

February 15, 1928.

Mr. W. R. McEwen,
c/o J. G. Cherry Co.,
Cedar Rapids, Iowa.

Dear Mr. McEwen:

Thank you very much for returning to me correspondence which became attached to your letters.

Mr. Hoffmann's claims that the Geissler radiations do not produce a change in taste of milk because they are cold are without foundation. We have been able to secure this change in taste with our quartz mercury vapor lamp when milk was irradiated through ice water. Until other experimental data are placed before me I shall be inclined to believe that the only reason that the Geissler radiations do not produce a change in taste is the fact that they are weak in character. By prolonged treatment I am inclined to think that they will produce the same effect which is produced by over exposure to the quartz mercury vapor lamp.

Sincerely yours,

HS:MT

J. G. Cherry Company

INCORPORATED 1899

Manufacturers

Creamery, Ice Cream and Milk Plant Equipment

Egg Cases and Egg Case Fillers

Cedar Rapids

IOWA, U. S. A.

WALTER L. CHERRY
President & General Manager
HERBERT T. CHERRY
Vice President
HOWARD H. CHERRY
Secretary
ERNEST B. CAMERON
Treasurer



Prof. H. Steenbock
University of Wisconsin
Madison, Wisconsin

January 28
1928
File WRM-LBH

Dear Sir:

The writer finds your letter of the 19th, upon his desk following his return from a rather extensive trip, and want you to know we appreciate very much the information you have given us with reference to the ultra violet ray treatment of milk.

The writer wishes to apologize to you for his apparent impatience in not receiving an immediate reply to our letter of the 3rd. If we had given the matter a moment's thought, we would have appreciated the fact that your time must be imposed upon enormously by those seeking information regarding the wonderful work you have been doing, and we should have realized that we could not expect an answer from you by return mail.

Inasmuch as the United States Examiner has given you pretty definite assurance that your patent, covering the treatment of milk, as well as other foods will be acted upon favorably, and the further fact that we are really very much interested in the possibilities of the application of this process, as equipment manufacturers, we are going to ask you to look over the complete file we have regarding the process and equipment used by the Austrian party, and will appreciate your opinion regarding the method they employ to secure the desired result and the equipment they are using.

A considerable part of this file is composed of letters written in longhand by the young man who approached us on this subject, and these letters make rather difficult reading. We believe the information given in this file of correspondence, however, will be of sufficient interest to you to warrant your reading it over, and because of our interest in the proposition, we are taking the liberty of submitting the file to you.

If you do not feel that you have the time to go through this file, we want you to feel frank in telling us so and returning it to us. Under any circumstance, we, of course, wish the file returned, as

Professor Steenbock - #2

we want to make some disposition of the matter one way or the other
as soon as we can conveniently.

Very truly yours
J. G. CHERRY COMPANY


W. R. McEwen

enc.

February 8, 1928

Mr. W. R. McEwen,
c/o J. G. Cherry Company,
Cedar Rapids, Iowa.

Dear Mr. McEwen:

I am returning to you, with thanks, your correspondence with Mr. Hoffman. I must say that I read this with a great deal of interest. Mr. Hoffman came up to my laboratory some time ago and proved himself a very shrewd salesman, very carefully informed as to the possibilities of his invention and cleverly uninformed on the shortcomings of the invention. This may sound rather harsh treatment which might have been mitigated if I had had the opportunity to give him more of my time.

Upon analysis I find that his method of treating milk has been very poorly experimentally controlled. We have carried out numerous experiments relative to the destruction of vitamin A by ultra violet radiation. We have found that the ultra violet radiation will destroy vitamin A even in the absence of oxygen. Mr. Hoffman's electrically heated copper coil would, therefore, not accomplish the purpose that he is after through removal of oxygen, even if it were possible to remove this to a sufficient degree. Mr. Hoffman refers to the production of an unpalatable taste when milk is treated with a quartz mercury vapor ultra violet light. This is not necessarily the case. The unpalatability results only in consequence of excessive treatment.

I regret that I have had no experience with an apparatus similar to the one which Mr. Hoffman has described, but I am inclined to believe that the radiation effect with his apparatus is very small indeed and that for that reason he has never noticed a change in taste. I am, furthermore, inclined to believe that his product is not very high, if improved at all, in antirachitic properties.

It is possible that Mr. Hoffman may have something novel in his apparatus in connection with the use of a screen to divide the milk into a very thin film and while I have not looked into the matter, I do not think that his apparatus, or so called invention, is novel with respect to the use of the Geissler tube. The coil, as I have stated already, is of no importance.

Before you decide to purchase any rights from Mr. Hoffman, I should advise you to have a technical man look up the patent situation very thoroughly with regard to the different types which have been previously proposed. As I told you before, we are not interested in any special type of apparatus. Our patent rights

deal specifically with the process and the product in general.

Thanking you for placing the afore mentioned literature
at my disposal, I beg to remain

Very sincerely yours,

HS:MT

Milk (copy)



CABLE ADDRESS "MILKPROD"
CODE - BENTLEY'S

PACIFIC MILK COMPANY

"PACIFIC" BRAND EVAPORATED MILK

1225 HOMER STREET
SALES OFFICE, 328 DRAKE STREET
VANCOUVER, CANADA

Product

Milk

March 25th, 1930.

Prof. Harry Steenbock,
University of Wisconsin,
College of Agriculture,
Madison, Wisconsin,
U.S.A.

Dear Sir:-

Thanks for yours of March 20th.

Shall appreciate it greatly if you will ask the Foundation to communicate with me, when the necessary data has been accumulated so that they could discuss with me possible licensing in the Evaporated Milk field.

Yours truly,

Sales Manager.

ECS:ET.

PACIFIC MILK COMPANY

"PACIFIC" BRAND EVAPORATED MILK

SALES OFFICE, 328 DRAKE STREET

VANCOUVER, CANADA

March 12th, 1930.

Prof. Steenboch,
University Wisconsin,
Madison, Wis.,
U.S.A.

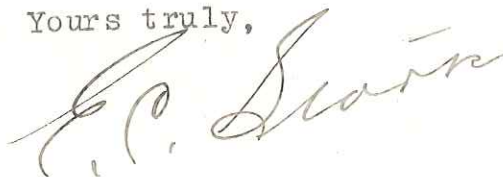
Dear Sir:-

We are packing Evaporated Milk in 16 ounce net and 6 ounce net weight tins. They contain standard 7.8% butterfat and 25.5% milk solids same as United State standard and go through practically same process of sterilization as obtains in best Evaporated Milk Plants in U.S.A.

Would it be possible for us to utilize Viosterol by incorporating proper quantity in the milk for infant feeding after condensation, but before sterilization, and be able to retain in the finished product the Vitamin D?

If sterilization at 230 degrees fahrenheit for 25 to 30 minutes would destroy the value of the Viosterol, it would, of course, be impracticable for us to use it in the milk but we would appreciate your consideration of the question and your informing us as to what quantities we should use per tin and about what the cost would be.

Yours truly,



Sales Manager.

ECS:ET.

March 20
1930

Mr. E. C. Stark
Pacific Milk Co.
1226 Homer Street
Vancouver, Canada

Dear Mr. Stark:

Re: The stability of Vitamin D in milk

We have not as yet carried out experiments on the stability of irradiated ergosterol in milk during the packing process, but we have every reason to believe that no appreciable deterioration would result.

The Wisconsin Alumni Research Foundation, as the assignee of my patent, is not contemplating licensing in the milk field at the present time. It feels that this is too important a field to be taken up without very careful accumulation of experimental data. At any rate, it feels that the use of Viosterol should be thoroughly established before an important commodity like milk should be fortified with Vitamin D. When the necessary data have been accumulated, you undoubtedly will hear from the Foundation in regard to this matter.

Sincerely yours,

HS:EA