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The Salt Company N

ONONDAGA SALT.

THE
SALT COMPANY
"

OF ONONDAGA.

INCORPORATED 1860.

GENERAL OFFICE:

Clinton Block, Corner of Clinton and Genesee Streets,

SYRACUSE, N. Y.

SYRACUSE:

DAILY JOURNAL BOOK AND JOB PRINTING ESTABLISHMENT.
1862.

THE

SALT COMPANY

OF ONONDAGA

INCORPORATED 1860.

LOAN STACK

GENERAL OFFICE:

GIFT

Union Block, Corner of Elm and Genesee Streets,

SYRACUSE, N. Y.

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1860.

THE SALT COMPANY OF ONONDAGA.

GEO. F. COMSTOCK, - PRESIDENT.
THOS. G. ALVORD, - 1ST VICE-PRESIDENT.
PATRICK D. LYNCH, - 2D " "
WILLIAM WINTON, - TREASURER.
J. W. BARKER, - - CORRESPONDING SECRETARY.
CHAS. FRANCHOT, - RECORDING SECRETARY.
WM. JACKSON, - - CHIEF CLERK AND ASS'T SEC'Y.

EXECUTIVE COMMITTEE.

J. W. BARKER, ROBERT GERE,
J. P. HASKINS, OLIVER T. BURT,
LUCIUS GLEASON.
W. JACKSON, - - SEC'Y OF EX. COMMITTEE.

TRUSTEES.

GEO. F. COMSTOCK, J. W. BARKER,
THOS. G. ALVORD, J. P. HASKINS,
ROBT. GERE, OLIVER T. BURT,
LUCIUS GLEASON, PATRICK D. LYNCH,
WILLIAM F. GERE, HARVEY STEWART,
WILLIAM WINTON, CHARLES FRANCHOT,
HENRY W. SLOCUM.

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THE SALT COMPANY OF ONONDAGA

Was established in March 1860, for the purpose of uniting the interests of the different manufacturers of Onondaga Salt, in order to secure a more thorough and systematic management of their business—to cheapen the cost of manufacturing, and to lessen the expenses of distributing the article to all points where it finds a market, thereby enabling the manufacturers to supply more distant sections of the country than they had before been able to do, and also to improve and give uniformity to the character of Onondaga Salt.

By the establishment of its own responsible Agencies in all the larger markets, the company has been able to furnish its salt at all times and at all points, to regular dealers and consumers at the established prices at the works, (with the addition only of freight and cost of handling,) and to maintain a uniformity in the price of the article which had never before been secured, and also to raise the character of the business from a fluctuating and uncertain one, to a commercial standard of uniformity and reliability which its importance requires, and which cannot but conduce to the advantage of both the dealer and consumer.

By this union of interests under one management, the company is enabled to place and control the manufacture, through all its processes, under the direction of the highest scientific talent and skill—aided by competent and careful overseers—thereby ensuring not only improvement in quality, but perfect uniformity in the manufacture. It is thus able to supply every variety of this most necessary article of civilized life, in its purest form, for the various uses to which it is applied. Fully sensible of the great importance that an article of such

prime necessity and universal use, should be produced as free as possible from any extraneous matter, and especially from any deleterious substances, the Salt Co. of Onondaga is determined that no Salt sent to market under its *brand*, shall fail to be of the very best quality. It invites the attention of all dealers and consumers, and especially of Packers and Dairymen, to the following analyses of Onondaga Salt in confirmation of its excellence and, for some purposes, of its superiority over any other, whether of domestic or foreign production.

The analyses of other salt are submitted in order that dealers and consumers may form a correct estimate of the comparative purity of the productions of the salines of Onondaga, over those of any other section of our country.

FINE SALT—(BOILED.)

The quality of this variety, (constituting $\frac{2}{3}$ of the total heretofore produced at the Onondaga works, and of by far the most general consumption,) depends very much upon the skill and care bestowed upon its manufacture; and, under the present management, which controls the entire business, it is receiving especial attention. For all ordinary purposes, this variety of Onondaga Salt is all that is required; but for Packing for market, and for Dairy use, the Coarse and Dairy Salt are preferable. In this connection it may be well to state that this salt, being more bulky than the coarse (Solar) Salt—the quantity, when used for preserving meats, should be determined by weight rather than by measure—when this rule is observed, it is believed that no complaint of its deficiency in preservative qualities will ever be made. It is recommended, however, that in all cases when it is possible to obtain it, the coarse Solar Salt be used for packing or preserving meats.

The following analyses are presented as reliable, and so far as relates to the Onondaga Salt, as furnishing a fair average of

the salt now being manufactured. The analyses of Michigan and Ohio Salt are of specimens taken from salt on sale, and the analyses were conducted by a chemist of unsurpassed skill, with perfect fairness, and with the intention to obtain an exact result.

ANALYSES FINE SALT (BOILED).

	Onondaga. Prof. Cook, from Sup't Rep't, 1854.	Saginaw. Goessman's, 1861.	Ohio. Hocking Valley, Goessman, 1861.	Ohio. Mason City, Goessman, 1861.
Chloride of Sodium,	97.12	92.97	93.26	95.77
Sulphate of Lime,	1.33	0.33	0.00	0.00
Chloride of Calcium,	0.15	1.09	1.43	0.61
“ “ Magnesium,	0.13	0.50	0.70	0.04
Insoluble matter,	0.00	0.01	0.01	0.11
Water,	1.27	5.10	4.60	3.47
	100.00	100.00	100.00	100.00

COARSE SALT—(SOLAR).

This variety, produced by solar evaporation of the brine—a process very slow compared with evaporation by artificial heat or boiling—is particularly adapted to the purposes of packers; and, after the necessary preparation, to the uses of the dairy. In the process of formation and before the brine has reached the point of crystalization, the impurities are precipitated and fall to the bottom of the vat, leaving the brine in a state of almost perfect freedom from any deleterious substances. It is then conducted into clean vats or rooms where the salt is allowed to form, and where it remains until the cubes have attained the proper size to constitute *coarse salt*, and a sufficient crop to draw from is deposited. The salt is then collected in tubs and drained, partially, over the vats, before removing it to the store-houses, where it is kept until it has become sufficiently dry to be packed for market. Thus through all the processes of producing coarse salt, the greatest care is taken in order to preserve it clean and free from all extraneous substances until it reaches the consumer. On the contrary, the coarse salt of foreign countries, being generally

made in pits or basins in the ground, cannot, of necessity, be clean and free from dirt, even at home; and when it is also taken into consideration, that all foreign salt is brought to this country in the holds of vessels as ballast, it must be evident to any one that it cannot be in as good condition for use as that made and packed with the care that is bestowed upon the productions of the coarse salt fields of Onondaga, which are always found of a clean white color, attributable to the purification of the brine before the salt is allowed to form,—while that of foreign production is of a dark, dingy appearance, owing to the large amount of dirt and organic matter held in solution in the brine and incorporated with the salt in the process of formation.

In the State of New York and wherever Onondaga Coarse Salt has been used for a period of years, its reputation is all that can be desired, and is fully equal to that of any of the best varieties of Foreign, not excepting the justly and universally esteemed Turk's Island. *It is established beyond controversy*, that in all instances in which this salt has been thoroughly and fairly tested, facts and experience have demonstrated its superior excellence; but there are yet points at which packing is carried on extensively, where prejudices, operating almost to exclusion of the article from the purposes to which it is so peculiarly adapted, still exist. It may be that nothing but experience in the use of the article will remove such prejudices; but the following facts, taken from the Report of the Superintendent of the Onondaga Salt Springs for 1858, ought to be sufficient to establish for it a reputation fully equal to that of the best packing salt known to consumers. To render it still more desirable for packing purposes, the Company now separate the smaller cubes from the larger, by screening, and put up, for Packers, the latter only. The former are converted, by grinding, into "Ground Solar Salt," and by a further process into "Solar Dairy."

Professor Cook's, from Supt's. Rep't, 1854.

ANALYSES OF COARSE SALT.

	Onondaga.	Turk's Island.
Chloride of Sodium.....	97.31	96.76
Sulphate of Lime.....	1.05	1.56
Sulphate of Magnesia and Soda.....	.00	.64
Chloride of Calcium.....	0.05	.00
Chloride of Magnesium.....	0.05	.14
Water.....	1.54	.90
	<hr/> 100.00	<hr/> 100.00

REPORT OF GOVERNMENT TESTS.

Results of certain trials^a of Onondaga solar salt and Turk's Island salt, instituted by the General Government during the years 1851, 1852, 1853 and 1854.

It is almost superfluous to say anything by way of further recommendation of the superior quality of Onondaga solar salt. Its character is fully established wherever it has been used, or can be employed, at prices corresponding with the best imported salt. The greatest pains are taken by the manufacturers to get in their crop in the best possible condition, and to have it packed without any admixture of dirt or inferior salt, and to have it thoroughly drained. In these respects, improvements have been effected within the last few years. The works are better put together, the salting process is better understood, and the store-houses where the crop is gathered in and packed (especially the new ones,) are models of neatness and care. The thorough system of carrying on their business adopted by the proprietors, generally, renders the duties of the inspection, on the part of the State, but little more than nominal.

For obvious reasons, at former periods, concerted efforts were made to prejudice the public against the character of New York solar salt. Especially was this the fact in the eastern cities, where the domestic product came into competition with the imported article. The general government threw the weight of its influence into the scale of the foreign manufacturer, by establishing a regulation that contract pork destined for the supply of the army and navy should be packed with imported salt.

Complaint having been made to the President, in 1851, that the regulations of the War Department in this respect

unjustly discriminated against the character of the solar salt of the State of New York, an order was issued by Secretary Conrad, directing that 300 barrels of pork should be packed in New York with salt of both descriptions, in equal quantities, for the purpose of testing, by actual and thorough experiment, the comparative merits of the two kinds. The agent of the Onondaga manufacturers, N. Randall, Esq., was apprised of this order, and the pork was put up in his presence, in New York, city, in November, 1851. The hogs were of the best quality, fattened in the river counties near the city; each hog was split in two, and one half packed with Onondaga and the other with Turk's Island salt. The barrels were distinguished by numbers; those containing Onondaga salt receiving the odd number, and those with Turk's Island the even number.

Six barrels of this pork were sent to each of the different military posts along the seaboard, and at the south and west; and in the year following a lot was shipped to California. Instructions were given to the commanding officers of the several posts to have two barrels of pork inspected in each of the three succeeding years, by a regularly organized board of survey,—the results to be reported to the department at Washington.

ABSTRACT OF REPORTS.

Trial made upon two barrels of Pork, (packed as above stated,) at Fort Trumbull, Connecticut, August 24, 1852.

No. 31 (Onondaga salt); *Color*—The fat portions of a clean white color, the lean, of a clean dark red; *Hardness*—The meat of both the fat and lean very hard and firm; *Sweetness*—Very sweet and very sound; *Loss in boiling*— $17\frac{1}{2}$ lbs. boiled $1\frac{1}{2}$ hours, weighed $13\frac{3}{4}$ lbs.; *Quality after boiling*—Was firm and hard, same color as before, and of good taste; *Weight* $201\frac{1}{2}$ lbs.

No. 32 (Turks Island,); *Color*—The fat portions of a clean, fine, white color; lean do. clear bright red color; *Hardness*—No. 32 not as hard and firm as that of No. 31; *Sweetness*—Very sweet and sound; *Loss in boiling*— $17\frac{1}{2}$ lbs. boiled as in No. 31, weighed $13\frac{1}{4}$ lbs.; *Quality after boiling*—Soft and liable to run, but had the same color and the taste was good; *Weight*— $198\frac{3}{4}$ lbs.

Conditions the same in both barrels.

Trial at Fort Mifflin, Pa., Aug. 24, 1852.

Pork all quite firm and solid ; No. 56 was the whitest ; No. 55 appeared to be the hardest. An offensive smell issued from 56 on opening the barrel, which was not the case in 55 ; throughout 55 the meat was sweetest in smell. The piece boiled from 55 was the sweetest and firmest and apparently the best preserved.

Trial at Fort Moultrie, S. C., Aug. 1852.

The examiners sum up their observations with the remark, that "the board is of opinion that for *immediate* use the difference between the two barrels is very slight ; but judging from the appearance and retentive firmness of the pork in the two barrels, they think No. 91 will retain its present state of preservation longer than No. 92." "The inside of the pieces in No. 92 were of a slightly greenish tinge."

Trial at Castle Pinckney, S. C., Aug. 1852.—"The smell and taste of No. 1 was decidedly the sweetest and best flavored ; that of No. 2 being strong and rank."

Trial at Fort Monroe, Va., Aug. 1852.—The board concluded their examination by saying : "There appears to be so little difference in the qualities of the two barrels of pork, that the board cannot express any decided opinion as to their comparative merits."

Trial at Key West, Florida, Aug. 1852.—To the statement of the examiners is appended the following by Capt. J. Vogdes :

"I concur with the board in the above report. I would in addition beg leave to state that the salt was much better dissolved in No. 26 than in No. 25. The salt in No. 26 tasted strongly of the pork, whilst that of No. 25 seemed as pure as when it had been packed. No. 25 was issued immediately, (Aug. 24,) No. 26 on the 10th of this month, (Sept.) The soldiers prefer No. 25 for eating meat to No. 26."

Trial at Ft. Adams, R. I., Sept. 1852.—Maj. Sherman concludes his report thus :

"It is the opinion of the board that at the present time no

essential difference can be found to exist between the two barrels of pork. They both appear to be good and sweet, and of sufficient hardness," &c.

Col. Gates adds a statement as follows: "I have carefully examined the said barrels of pork and tasted some of each, (cooked and uncooked,) and am of opinion that the pork contained in the barrel marked No. 25 is preferable, at this time, to that contained in No. 26, by reason of its more fine appearance and more agreeable taste upon the whole; and I should prefer for my own use the meat contained in barrel No. 25."

Trial at East Pascagoula, Miss., Aug. 1852.—"The board is of opinion that the pork examined is uncommonly good. Before it was boiled the board was of the opinion that No. 38 was better than No. 37. After boiling there was no perceptible difference between the two."

Trial at East Pascagoula, Miss., Sept. 7, 1853.—"The board is of opinion that the pork in both barrels is uncommonly good and very well preserved; so much so that it is difficult to say which is the best; in the hardness and color there is a slight difference which would lead the board at this time to decide in favor of the salt in No. 39."

Trial at Fort Sullivan, Eastport, Maine, August, 1853.—"Both pieces were found to be very good, but that from barrel No. 3 was a little the hardest, a little the sweetest, and a little the best. The color of both was the same and pretty white."

Trial at Fort Monroe, Va., Aug., 1853.—Col. Bankhead remarks: "The orderly sergeants of the companies report that they have used the entire contents of the two barrels, No. 81 and No. 82, and give a decided preference to the Pork in No. 81, being sweeter, more solid, and less loss on boiling, and less affected after the barrels were opened, by exposure to the air. The pork in No. 82 exhibited a slight taint by being kept a few days before boiling."

Trial at New York, Sept. 29, 1853.—The examination took place in the presence of the "principal pork packers and pork dealers," of the city.

"Barrels Nos. 51 and 52 were opened in the presence of these gentlemen, and the results given were the *unanimous* opinion. No. 51, before boiling. *Color*: yellow on the surface, looking as if rusted; scraping the surface it showed white and clean.

No. 52. *Color*: bright and clean, both lean and fat, looking as if just packed.

Both sweet and firm.

After boiling:

No. 51. *Color*: yellowish on the surface, white and clean within. *Hardness*: harder than 52, but attribute that to the hog being younger. *Loss in boiling*: 6 lbs. 3 ozs. *Quality*: very firm and sweet. *Weight*: 195 lbs.

No. 52. *Color*: fat, white; lean, pink; both bright; *Hardness*: firm but not equal to No. 51. *Loss on boiling*: 7 lbs. *Weight*: 199.

A number of barrels of each kind were then opened. The result in color was, in all, the same. The barrels unevenly numbered were uniformly stained yellowish, whilst the even-numbered barrels presented the pork white and clean.

The pork in the uneven numbered barrels was invariably better cured.

It was the unanimous opinion of the packers, that for sale in the New York market, the even numbered barrels would be preferred, because of the better color of the pork. But for long shipments, the preference would be given to the uneven numbered barrels, the pork being better cured.

All other differences, except the two last named, were deemed by them due to the age and feeding of the hog."

Trial at Fort Washington, N. H., Aug., 1853.—"Altogether the pork in 75 was superior to 76 in color, sweetness and firmness, and fewer pieces rusty."

Trial at Key West, Florida, Aug., 1853.—"Pork in No. 27 much superior to No. 28, and so preferred by the men."

Trial at Fort Mifflin, Pa., Aug., 1853.—"On opening barrel No. 57, I found that about six or eight inches of brine had leaked out, and that the pork was slightly rusted. Otherwise it was white, tolerably hard and perfectly sweet.

No. 58 was full of brine. The pork of quite a red color,

rather soft, and had an offensive odor. The salt had not penetrated or 'struck in' the pork, which is tainted and unfit for use."

Trial at Fort Trumbull, Conn., Aug., 1853.—"No. 34, after boiling, had flavor decidedly rusty. No. 33 not perfectly sweet, but much superior to 34."

Trial at Fort Van Couver, W. T., Aug. 1854.

"The board is of the opinion that the pork in barrel 61 is better preserved in every respect than that in No. 62."

Trial at Fort Reading, Cal., Aug. 30, 1854.

"The flavor of No. 73 was better and more agreeable than No. 74, although No. 74 was not quite so salt. Both 73 and 74 were considered excellent in quality, but the preponderance in favor of No. 73." At a previous trial, same post, in February, the report says: "From the above experiments and tests, the board are of the opinion that No. 71 is a superior quality of pork, losing less in weight and generating less thirst, two very important points," &c.

Trial at Key West, Fla., Aug. 24, 1854.

"No. 29: *Hardness*—Firmer than usual contract pork; fat and lean no appearance of separation; *Color*—A little redder than usual contract pork; very healthy appearance; fat very white; *Sweetness*—Sweeter than usual contract pork; no offensive smell on opening barrel; *Loss in boiling*—20 lbs. reduced to 11½; *Quality after boiling*—firm, sweet, of a good color, much more acceptable to the men than the usual contract pork; by the men considered the best pork they have ever had at this post.

No. 30: *Hardness*—Rather soft; *Color*—Bright red; unhealthy; very offensive smell when barrel was opened; *Sweetness*—Sour before and after boiling; *Loss in boiling*—20 lbs. reduced to 7½; *Quality after boiling*—Soft, sour, greenish; and lean inclined to separate; not good pork; the fat had separated from the lean in the barrel; salt well dissolved. ▴

Trial at Fort Moultrie, S. C., Aug. 24, 1854.

"In regard to the color of the pork, the Board is of the opinion that the pork in barrel marked 95 is superior, it hav-

ing apparently changed its color but slightly since it was packed, whilst that in barrel No. 96 has changed to a dingy yellow. As to hardness, that in barrel No. 95 is superior, being quite hard, while that in 96 has become somewhat soft. As to sweetness, 95 is superior." Same after boiling.

GROUND SOLAR.

This variety, made by grinding Solar (coarse) Salt, is particularly adapted to the use of packers for rubbing meats and making pickles, and is, of course, of the same purity with the coarse packing salt.

SOLAR DAIRY.

The Solar Dairy Salt has been long known to the dairymen of this and the Western States, and esteemed, wherever used, as the best article of domestic production. It is prepared from the Solar Salt by grinding and by afterwards subjecting it to a sufficient degree of heat to expel the moisture which the salt retains in its natural state.

ONONDAGA FACTORY FILLED DAIRY SALT.

Until within a very brief period, the salt used by the better class of American dairymen has been of foreign production, and even up to the present time, it is probable that not over one tenth of the dairy salt used in the State of New York is the manufacture of this country. The Solar Dairy Salt of Onondaga is the only domestic article which had either attained or deserved a reputation with butter makers, until the variety which heads this article, was introduced to their notice by the Salt Company of Onondaga. Previous to its organization, the Dairy Salt of Onondaga was made by many different manufacturers, each of whom was of course interested in making an article that could be afforded at the least price and that would yield the largest profit. The brand or name of an article made by a manufacturer who intended to produce a really good one, and was ambitious of a reputation, was of no value so long as interested and less scrupulous competitors could put up an inferior article in the same style and sell it in market under the same general name.

It is well known to all experienced dairymen, that in most of the salt made in this country, and in much of the foreign,

there are ingredients which render it unfit for the use of preserving butter. These ingredients, the chlorides of calcium and magnesium, are found in a greater or less degree in the brines of all countries, and also in the salt produced from them, when great care and skill are not used for their removal. For any other purpose than preserving butter, the percentage of these deleterious substances which is retained, in the common Onondaga Salt, is so small as to be regarded of no importance; but to the cultivated taste of an experienced butter-buyer, the least trace of the chlorides existing in the salt used, betrays its presence. In the summer of 1860 the Salt Company of Onondaga adopted a process of manufacturing Dairy Salt, which *effectually* removes the chlorides of calcium and magnesium, and which may therefore be regarded as superior to that used by the manufacturers of the celebrated Ashton Salt, as in it, one or both of these substances is found to exist. Regarding as of the utmost importance that a perfectly pure salt should be furnished for the use of all engaged in making an article of such universal use as butter, and fully appreciating the necessity of such perfect uniformity in its quality as to command the confidence of dairymen, the Salt Company of Onondaga has placed the manufacture of its Factory-filled Dairy Salt under the superintendence of an accomplished chemist, who has for several years past made agricultural and manufacturing chemistry his specialty—Dr. C. A. Goessman, a graduate of, and for some years a teacher in the German University of Göttingen—and who has for more than a year past devoted his entire attention, in the employment of this Company, to the improvement of the processes of manufacturing salt.

The Company now claims to make *the best Dairy Salt known to the world*. It is put up with great care and sent to customers directly from the works, and is therefore not exposed to the liability of absorbing (as the foreign salt must be from long exposure in the holds of vessels) anything offensive either to the taste or smell, to be afterwards imparted to the butter.

For confirmation of what has been said, the following analysis, reports and testimony of practical butter-makers, based upon experience, are presented:

ANALYSES BY C. A. GOESSMAN, DR. PH.

	Ashton Salt.	Onondaga Factory-Filled.
Chloride of Sodium.....	97.65	98.28
Sulphate of Lime.....	1.43	.91
Sulphate of Magnesia.....	0.05	.06
Chloride of Magnesia.....	0.06	.00
Sulphate of Soda.....	.00	.03
Insoluble matter.....	.05	.12
Water.....	.76	.60
	<hr/> 100.00	<hr/> 100.00

PROF. COOK'S ANALYSIS.

RUTGER'S COLLEGE,
New Brunswick, Jan. 11, 1861. }

J. W. BARKER, Esq., Secretary Salt Company, Onondaga:

Dear Sir:—Herewith I send you my analysis of the specimens of "Factory Filled" Salt, which were left with me by your agent, Mr. Belden.

ANALYSIS.

Chloride of Sodium, (salt,).....	97.600	per cent.
Sulphate of Lime, (combined,).....	1.124	do.
do. do. (free,).....	.227	do.
Sulphate of Magnesia.....	.077	do.
Carbonate of Lime.....	.162	do.
Chloride of Calcium.....	none	do.
Chloride of Magnesium.....	none	do.
Water.....	.810	do.
	<hr/> 100.000	

This is a remarkably pure specimen of Salt. It contains no chloride of calcium or magnesium.

These chlorides cause salt to absorb and retain moisture, and are by far the most active in their properties of any of the foreign substances usually found in common salt.

A satisfactory evidence of the purity of salt is its dryness. I have had this specimen in a wooden salt box for four months, and still it loses less than one per cent. of water by heating it to melting. This is far less than in any other specimen of Onondaga Salt that I have ever tried.

By the following analysis of a good specimen of "Ashton Salt," you will be able to compare the purity of the two kinds:

ANALYSIS.

Chloride of Sodium, (salt,).....	97.660	per cent.
Sulphate of Lime, (combined,).....	1.381	do.
Chloride of Calcium.....	.000	do.
Chloride of Magnesium.....	.059	do.
Water.....	.900	do.
	<hr/> 100.000	

It is extremely gratifying to see that your efforts to produce an article of salt fully equal to the best imported are so successful. Your "Factory Filled" possesses no deliquescent properties, and contains no active substance except pure salt. I think it must be adequate to the wants of the most fastidious dairyman.

Respectfully yours,

GEORGE H. COOK.

SYRACUSE FRANKLIN INSTITUTE.

Report of Committee on Salt.

The Salt Company of Onondaga presented four samples of Salt: Dairy, Table, Coarse Solar and Common Fine.

After personal inspection of these samples, and a careful examination of the evidence submitted, showing the analysis which have been made by scientific chemists, and of thorough practical tests which have been made by some of the best dairymen in the State; and also of reports from some of the most experienced and careful butter-buyers, of the comparative value of butter, in the making of which different kinds of salt had been used, your committee are forced to believe that "Factory Filled Dairy Salt" of the Salt Company of Onondaga, is the very best for dairy purposes which can now be obtained in this or any other country.

We are satisfied that the butter made with it has a better flavor and will keep longer than that in which the celebrated "Ashton," or any other variety of foreign salt has been used.

The chlorides of calcium and magnesium are the substances in salt which affect the taste and injure the quality of butter, however carefully otherwise it has been made.

The Salt Company's "Factory Filled" is perfectly free from either of these deleterious substances, while the best samples of "Ashton" show enough of the chloride of magnesium to make it objectionable if a pure article can be obtained.

Much of that which has found its way into our dairy districts, branded and sold as "Ashton Salt" within the last few years, has shown such deterioration in quality, by adulteration or otherwise, that these chlorides are found to exist in it in as large quantities as in the Onondaga Common Fine.

Hence the growing dissatisfaction which the "Ashton Salt" is so generally producing among dairymen who desire to maintain the reputation they have acquired for making superior butter.

The Samples of *Table Salt*, made entirely from Solar, are superior to any that have ever come under our observation. The pulverized, dry, and perfectly disintegrated condition of its particles, give it a great preference over most of the table salt in use, which becomes damp and solidified by standing exposed to even an ordinary atmosphere.

The Coarse Solar and Common Fine Salt exhibited were each, in appearance, very pure specimens of these staple varieties, and if fair samples of the products of our manufactories, as we believe them to be, they show an improvement in this controlling branch of business here, as gratifying to the public as it is commendable to those engaged in it.

The Committee award silver medals to the Salt Company of Onondaga for their Factory Filled Dairy and Table Salt, and a diploma for the very excellent samples of the other varieties exhibited.

GEORGE GEDDES,	E. W. LEAVENWORTH,
J. F. BOYNTON,	A. P. GRANGER,
GEO. C. ANDREWS,	JOHN M. WIETING.

Report of Prof. Porter, Chemist of the New York State Agricultural Society, on the Onondaga Factory-filled Salt.

STATE FAIR, WATERTOWN, }
September 20th, 1861. }

To the Executive Committee of the New York State Agricultural Society:—

In the latter part of the month of August last, I received notice from the Secretary of the Society, B. P. Johnson, Esq., that I was appointed a committee on behalf of the Society to report upon the Onondaga Factory-filled Dairy Salt, manufactured by the Salt Company of Onondaga. The nature of the duty to be performed was not specifically mentioned, but I presumed it to include a general report upon the manufacture of the salt; the advantages arising, if any, from new methods lately introduced, together with analyses of the salt, and a comparison of it with the best commercial articles used for a similar purpose.

The good or bad quality of the salt produced at the Onondaga works, is not a matter merely of Company or private interests; it is of great importance to the State at large, and especially are agriculturists and dairymen interested in it. The magnitude of the interests involved cannot indeed be well over estimated, nor can the manufacture be subjected to a too careful scrutiny, nor the product be too carefully examined. I regret that limited time and that oth-

er duties have prevented me from giving that attention to the subject which its importance deserves. I hope that my investigations hereafter may be rendered more complete and that at another time a more full report may be made.

The total amount of dairy salt annually used in this State, is probably about one million bushels. How much of this has been produced on the Onondaga Reservation? From the most reliable data I can obtain I believe that not more than ten per cent. of New York salt is used in the New York dairies. This mortifying fact well deserves to be considered, the causes of it need to be ascertained, and if possible, removed.

There is no doubt but that more or less dairy salt of the first quality has been made on the Onondaga Reservation for many years, but there having been numerous manufacturers, employing various methods and exercising various degrees of care and skill, they have produced a great variety and a want of uniformity in the article; the same effect has also been increased from the competition, necessarily arising among the manufacturers, inducing in the desire for cheapness, carelessness and a want of thoroughness in the manufacture. The brand of the Inspector was no certain criterion of excellence, and hence of necessity the public confidence was not gained; the majority of consumers preferring to pay a higher price for a reliable article, than to purchase at a low rate, that which might at one time be good and at another bad. Another cause that must be mentioned is the prejudice that exists against the Onondaga salt. Many dairymen believe it to be impossible to make good butter with it. To those unprejudiced who have taken pains to inform themselves in the matter, it is not necessary to say that the idea is fallacious. Many can testify to the fact of having made the best butter with the salt of which we are speaking. It must also be stated that this prejudice has been fostered, if it has not arisen, to a considerable extent, from dealers in dairy products, who furnishing foreign salt, will only contract with those who use the article they deem the best and can supply, as the Ashton or Marshall salt.

The consolidation of the manufacturers, on the reservation two years since, into "The Salt Company of Onondaga," has placed it in the power of the latter to remove the prejudices (from whatever cause produced) that existed against the salt. There is no doubt but that the best of salt can be made from the New York brine, and it is for the company to decide whether they have the will and will employ the skill necessary to produce a good article of uniform quality, which the dairyman may rely upon the next month and the next year as well as this.

Deeming it desirable to make a personal inspection of the man-

ufacture and processes adopted, before reporting on this committee, I visited Syracuse and spent considerable time in critically examining the "works." The gentlemen connected with the various departments afforded me every facility to gain information concerning the manufacture and the precise means employed in treating the brine, preparing the salt and purifying it from those ingredients found in many varieties of commercial salt, and which are deemed injurious.

It will not be necessary, nor have I the time, to describe at length the general manufacture of the salt. There are, however, certain points which particularly deserve attention, and

1st. Is the separation from the brine of the oxyd of iron which it contains, in small proportions. The means now adopted are such that the oxyd is rapidly and perfectly precipitated, and without the brine becoming contaminated by foreign matters, prejudicial to the salt, as often happens when lime and certain other substance are used for the same purpose.

2d. The general treatment of the brine after passing into the kettles, is that adopted for a considerable time in the works, and which experience has shown to be best fitted for securing the removal of the larger proportion of the sulphate of lime, &c., and the formation of the salt in a moderately fine, firm grain.

3d. The chief point which engaged my attention in the manufacture of the "Factory-filled Dairy Salt," was the means used for purifying and removing from it certain deleterious ingredients, especially the chlorid of calcium and the chlorid of magnesium.

The presence of these substances in salt causes it to absorb and retain moisture, and are considered by most practical men to exert a deleterious effect upon articles preserved by it, especially butter.—Hence, other things being equal, it is generally considered that the absence of these impurities is of great importance in dairy salt. I am pleased to say that the process lately adopted at the Onondaga Salt Works, by which these noxious chlorids are attempted to be removed, is a most happy application of well known chemical principles, and completely effects the purpose for which it was intended. A careful analysis of different specimens of this salt has satisfied me that they do not contain any of either the chlorid of calcium or the chlorid of magnesium.

It is advisable to consider in this connection the question, How far are the means adopted likely to secure a uniform article? It is evident that this question is of the greatest importance, and that unless it can be answered in the affirmative, the public confidence can not be gained, or if gained is not likely to be long continued.—It appears to me that the process is of such a character that with ordinary care a uniform article must be produced, for depending as

it does upon unchangable chemical laws, the conditions being always the same, it may be reduced, as indeed it already has been, to a routine which ordinary workmen after a little experience may perfectly and readily perform.

4th. There is another point to be referred to, to which, in my opinion, sufficient attention is not generally paid, i. e., the mechanical condition of salt. By a mere chemical analysis, one cannot certainly judge of the value of a given specimen of salt, for a specific purpose; much depends upon its state of aggregation, as the size of its crystals or particles, their degrees of compactness and hardness. This point is so evident that it is not necessary to dwell upon it.—Common observation and experience have shown that the larger crystals are most proper for use in packing meats, &c., which, gradually dissolving as the fluids of the meat are poured out, keep the brine fully saturated.

These considerations are evidence that a chemical analysis alone may not unlikely mislead us in determining the value of a salt, and at least, partially account for the fact, that salts having the same or nearly the same chemical composition, but differing in the condition and appearance of their particles, are not equally esteemed by practical men of good judgment and large experience. A chalky or a very fine grained or pulverulent salt, is not the best for dairy purposes, and would at once be rejected, I believe, by experienced dairymen. A good dairy salt, ought, I imagine, besides being of proper chemical composition, to be of moderately fine grain, crystalline and transparent, and when seen in mass, of a pure white color, it ought to be free from odor and possess that sharp and pungent taste characteristic of pure salt. Its solution ought to be colorless and free from either scum or sediment. The "Onondaga Factory-filled Dairy Salt" possesses in a high degree nearly all of these properties, and all of them so far as I have been able to judge as fully as the most esteemed varieties of foreign salt found in our markets.

5th. The chemical composition of the salt next demands our attention. In order that the specimens examined might as perfectly as possible represent the salt as used by consumers, I took specimens from the bins and bags of the factory, and procured others from that on sale by the agent in Albany. The following are the results obtained:

ANALYSIS OF ONONDAGA FACTORY-FILLED DAIRY SALT.

	No. 1.	No. 2.
Chloride of Sodium.....	97.7603 p. c.	97.6715 p. c.
Sulphate of Lime.....	1.2952 p. c.	1.2350 p. c.
Sulphate of Magnesia.....	0.0657 p. c.	0.0822 p. c.
Sulphate of Soda.....	0.0257 p. c.	0.0084 p. c.
Insoluble matter.....	0.1295 p. c.	0.1235 p. c.
Water.....	0.7236 p. c.	0.8694 p. c.
	<hr/> 100.000	<hr/> 100.000

[No. 1 is a specimen obtained from the factory. No. 2 is a specimen obtained from the agent in Albany.]

ANALYSIS OF ASHTON SALT.

	A.	B.
Chloride of Sodium.....	97.59 p. c.	97.660 p. c.
Sulphate of Lime.....	1.67 p. c.	1.381 p. c.
Chloride of Calcium.....	0.01 p. c.	
Chloride of Magnesia.....	0.03 p. c.	0.059 p. c.
Water.....	0.70 p. c.	0.900 p. c.
	<hr/> 100.00	<hr/> 100.00

[The analyses of the Ashton salt were made by Prof. Cook; that of A. is given in the Report of the Superintendent of the Onondaga Salt Springs, 1854, p. 10. The second, B., was made later, and was regarded as "a good specimen."]

The Ashton salt was selected for comparison because of its high reputation among dairymen. From the analyses just given, the comparative purity of the two varieties of salt may be judged.

6th. As regards the absorption of water, by salt, an erroneous impression is prevalent. Pure salt, it is generally believed, will not absorb moisture, even in a damp atmosphere. Such is not the fact. When the atmosphere is moderately dry, pure salt will remain unaffected, but when the air contains much moisture it will deliquesce, becoming damp in proportion to the moisture in the air.—The water in the specimen of Onondaga Factory-filled Dairy Salt, taken in Albany, (No. 2,) probably does not fairly represent, but is greater, than the amount of water ordinarily contained in it.—The specimen was taken from the storehouse on a damp day, and was conveyed to my laboratory in a bag. My limited time did not allow me to make other experiments upon this subject. It may be mentioned here, as illustrating the point under consideration, that the Ashton salt varies considerably as regards the moisture it contains, (as indeed must every salt,) thus the same specimen was found to contain in different states of the atmosphere, as regards dryness, from 0.71 to 0.06 p. c. of water. To obtain a just estimate of the character of different salts in this respect, so that correct comparison may be made, the examination ought to be conducted at the same time, upon specimens subject to the same conditions.

7th. Hardly less important than the manufacture is the manner of storing and shipping salt; great care exercised in the first, may be to a great extent neutralized by carelessness in the second. The manner of conducting the manufacture and treating of the salt at the Onondaga works, was apparently that best fitted to remove impurities and to prevent the introduction of foreign matters. The salt seemed to be carefully stored and protected from dust and dirt. The barrels in which the salt was packed, at the time of my

examination, were clean and dry, as were also the bags; all were accurately filled with their proper weight of salt, each being separately weighed, and when filled, placed under cover till shipped. The yards were graveled, dry and clean. Nothing seemed wanting to preserve the purity and good condition of the salt, so long as it remained at the works.

8th. The conclusions I would draw from my examination are that the "Onondaga Factory-filled Dairy Salt," as now presented to consumers, is a most excellent article, being, so far as I can judge, equal in purity to any of the foreign salts, and better than most; that its mechanical condition is that which is regarded as most desirable in an article designed for dairy purposes, while the care exercised in the storing and packing of the salt, are all that could be desired, and in my opinion it well deserves the approbation of this Society.

If the quality of this salt is kept up to its present standard, I see no reason why it will not meet with favor from the dairymen of the country, and every reason why it should, being furnished at a much lower rate than the best imported varieties. The public confidence in any article is not rapidly gained, nor are consumers quick to change from a good article they have long been accustomed to, to another brought to their notice, and claiming excellence.

Numerous chemical and other examinations, at various times, ought to be made by a disinterested party, of the salt as purchased by consumers or on sale, and the results published, together with the opinions of reliable dairymen as to its value from their experience, in order that it may be determined whether a uniformly excellent article is produced. In this way I believe much good may be done.

The importance of the subject demands a most thorough investigation, and such I am sure it will receive from the New York State Agricultural Society.

In conclusion, I may congratulate the Society upon the excellent article which is presented for their approval, and the Salt Company of Onondaga, upon the success which has attended their labors for the improvement of the dairy salt manufactured by them.

I cannot close this report without alluding to the Solar Salt manufactured by the Salt Company of Onondaga, and now on exhibition. By a recently adopted process of screening, the salt is separated into large and small crystals, the former of which is preferred to the unscreened by many packers, being better suited for continuing the saturation of the brine as the meats throw out their juices.

As to the quality of this salt I cannot speak from a personal chemical examination, but merely from the inspection I made of its preparation and mode of storing and packing at Syracuse. They

seemed excellent, and the appearance of the salt was such as might be expected in the best.

As to the chemical composition of the salt, the analyses of Prof. Cook and others show it to be remarkably good, which testimony is supported by the experiments made under the direction of the U. S. Government, during the years 1854-7, and in the report of which it is stated to be equal to the best imported salts used for similar purposes, as Turk's Island and St. Ubes, and in consequence is allowed to be used by contractors in the packing of pork and beef for the army and navy. The same salt, ground, is also exhibited to be used for various purposes. It undoubtedly possesses the same properties as are found in the unground salt.

All of which is respectfully submitted.

CHARLES H. PORTER,

Chemist to N. Y. State Agricultural Society.

The above report was read and approved by the Executive Committee, and ordered to be published.

B. P. JOHNSON, Corresponding Sect'y.

LETTER FROM HON. A. B. DICKINSON.

From the Country Gentleman and Cultivator.

MESSRS. EDITORS :—I have lately received a letter from our mutual friend and your long-time correspondent, the Hon. A. B. Dickinson, now Minister resident from the United States to Nicaragua, Central America, of sufficient interest to bear transcribing in part for your columns. It is mostly for the testimony he gives in favor of our Salt, which the Major long persisted in condemning when used especially in the curing of butter for winter consumption or shipment, that I am induced to ask for its publication, although the hints he furnishes as to the proper conditions for good butter making will not be overlooked by a certain portion of your readers.

The particular description of salt to which Major D. refers, as having been used in the butter forwarded to him at Leon, is that known at the works and in the market as "factory filled"—not a good name, by the way, but perhaps sufficiently distinctive till a better shall be invented. There is no question that this is the purest salt ever made in this country, and that for those who undertake to furnish butter of the highest quality, for long keeping or for shipment, no other should be employed. It is every way equal to the finest quality of "Ashton," (Liverpool,) and more uniformly good than that. No doubt the Major's prejudices against Onondaga, which have been conquered by our "factory filled," were honestly enough derived and entertained. They arose probably from the failure of the common article of Onondaga kettle salt to keep a superior quality of butter in a sweet, unaltered condition for

any great length of time. The salt itself was not formerly so well made as at present. The ingredient in common salt so fatal to the flavor of what was intended for choice butter, is the chloride of calcium, which has an extremely bitter taste, that is imparted to any butter that it remains long in contact with. Thousands of the country people, and many in the towns, eat butter seasoned with this kind of salt, without knowing the difference; but no first quality of table butter, for family use, and to bring the highest price, can be made from it. The ground Solar Salt made here, especially if it has been "medicated," as a peculiar process in its preparation is called, comes nearer to the English salt, and is quite unexceptionable unless extraordinary efforts are not to be applied to the butter made. But for a description of salt to be recommended without reservation, as every way equal if not superior to the best quality of English, the "Factory Filled" employed in the test described in the letter below, is beyond question a kind that may be relied on with the fullest confidence by all the producers of Orange (or any other) county butter. It is manufactured by a new process, involving scientific principles, and can be separated entirely from the deleterious compounds which affect the flavor of butter under ordinary circumstances. The operations of the Onondaga Salt Company in producing this description of salt were on a somewhat limited scale, last year, but entirely successful so far as it could be introduced. The ensuing season enough will be made to supply any reasonable demand, and as it can be furnished at a price made lower than that which butter makers have been paying for English salt, it will be found deserving the attention of consumers. In addition to its merits on this score, it affords the finest quality of table salt known in this country.

Syracuse, March 20, 1862.

S.

MR. DICKINSON'S LETTER.

LEON, Feb, 14, 1862.

"I am here in the most delightful country that man ever beheld, [though the climate is rather warm,] and where he can live with less labor than anywhere else in the world. He can purchase provisions, ready cooked, in the market enough to keep him eating a week, for less money than it would require to buy a sufficient quantity of liquor to get drunk on once. The Plainain [Banana ?] here is the staff of life, and it is blooming and maturing its fruit every day in the year, though not like the orange on the same tree. By a bountiful provision of nature, when one stalk is cut down for its fruit, a dozen sprouts start from the crown of the root to take its place, which also ripen their fruit in eight, ten or twelve months. This fruit is eaten in every shape—raw, roasted, boiled, fried, and dried in the sun. It makes very good preserves, equal for imme-

diate use to the fig. It is really one of the wonders of the vegetable world; bearing fruit but no seed, it is only propagated from the roots. A sprout will come up, and in twelve months, if well cared for, will grow to the enormous size of fifteen to eighteen inches at the base. Only one leaf shoots forth at a time, and that from the centre of the trunk. I have seen them put out one after another, and in six or eight days after the shoot makes its appearance, not larger than your finger, it grows to its full size, which is from two to three feet in width, and from ten to twelve in length, with a stem from two to three inches in diameter at the base. You can lie in your hammocks and see them grow.

I will now leave the Tropics and talk about *Salt*, fearing if I relate too much you will not believe any part of my story.

I am happy to inform you that my prejudices against Onondaga Salt have been all overcome; and I want you to say to our mutual friend, who sent me the sample to test in 1860, and who was so extremely anxious about the result as to become nervous when I frankly informed him that the butter cured with it would not retain its flavor equally with butter seasoned with Liverpool salt, and who again furnished me with three or four hundred pounds for distribution among the butter makers of Steuben county, that nothing in the world affords me greater pleasure than to inform him and yourself, that having subjected it to the most thorough trial that the case admits of, I am able to state without reserve, that Onondaga salt can be so manufactured as to be equal to the best quality I have ever seen used for butter. And now that you have raised the standard of your salt, I beg of you not to permit it to recede. It is for the interest of the manufacturers to produce an article equal to the best rock salt from the choicest mines worked in the most thorough manner. It may be well perhaps to give you the details of the test.

A firkin of butter, seasoned with Onondaga salt, left Steuben county, New York, in October last, and reached this place in January. It passed the ordeal of a voyage of more than one thousand miles in the tropics—was shipped and reshipped—was sent across the Isthmus of Panama—remained at Punta Arenas three days in the scorching sand, when the thermometer stood at 120 degs. in the sun—was put on board of an open bongo to Barquito, thence to Leon in an open cart, protected all this while by only packing the firkin in the middle of a barrel of salt, where it still remains, (what has not been used,) the surface being carefully covered with salt every time enough is taken out to last the family six or eight days. It stands in a room where the thermometer ranges from 78 to 90 degrees. This butter I pronounce of better quality after this long journey, than any which the people of Syracuse

or Albany are eating, and equal to one half of the butter that is put on the tables of the best hotels in Albany at this season of the year. The secret of all this is, that this butter was made by a woman who understands her business; it is the product of good cows, kept on the best feed, at a time when the pastures were fresh and nutritious, and not too wet. In fact there is no excuse for any man's having poor butter on his table, if he is able and willing to take the pains to make it right. I must not be understood as saying that common, or what is sometimes *called* good butter, can be shipped to such a climate as this without deterioration; none but the first quality will stand the voyage. Even with the best of care on the trip, it must be of the best quality in every respect. There must be no mistake in the cow, in the food she eats, nor in the process of manufacturing, nor in the quality of the salt used for seasoning. It will neither do to leave any milk in the butter, nor to work it so as to break the grain. The failure in any of these requisites in the least degree, is likely to be fatal to your butter, and the nearer home it is sold, and the sooner it is eaten, the better it will be for the credit of the manufacturer, or the health of the subject who is destined to eat and digest it.

LETTER FROM JOHN SHATTUCK.

An interesting communication upon the subject of butter making appears in the last number of the *Chenango Union*, with some experience in the use of salt, giving the preference to the article known as the "Factory Filled Dairy Salt," made in this city. For the benefit of Dairymen everywhere, we quote the article from the *Chenango Union*:

MR. EDITOR:—I will give you the following statement of the amount of butter made the past season from 23 cows. Considering it a fair yield I thought with your permission I would publish it in your paper.

Total amount of Butter made.....	5,130 lbs
Amount sold.....	4,846 lbs
Used, and on hand.....	284 lbs
Amount of sales for Butter.....	\$1,078 86
Used in family.....	65 32
Calves and Deacon skins sold.....	42 00
Amount of Pork from Dairy.....	100 00

Total..... \$1,286 18

Average in pounds to each cow, 223 pounds.

Average in value per cow, \$55.92.

I would state, for the benefit of the incredulous and the unbeliever, that the above statement is correct; that the butter was all made from 23 cows; and all weighed; NOT A POUND OF IT BOUGHT

NOR BORROWED. Two of the cows were sold on November 1st.—No allowance is made for milk and cream used in the family.

I would make the following statement in relation to salt. I salted one firkin of butter the fore part of June, with the Factory Filled Dairy Salt, made at Syracuse. The balance of our dairy was salted with the Ashton Salt. Mr. John VanCott, an extensive butter buyer, tried firkins Nos. 11 and 12, not knowing which was salted with Ashton, and decided that No. 11 was the best, and that was my opinion. No. 11 was salted with the Syracuse salt.—With this experiment and other tests that I have made together with the analysis that has been made by different chemists, and all the information I can get, I consider it fully equal to the Ashton salt.

JOHN SHATTUCK.

SALT FOR COOKING AND TABLE USE.

For all culinary purposes the Factory Filled Dairy Salt, on account of its entire freedom from any ingredient which can impart a bitter or disagreeable flavor, is undoubtedly preferable to any other. The Company are now preparing an article for Table use, from the F. F. Dairy, which, on account of its purity and its perfectly disintegrated condition, cannot fail to command the admiration of all consumers.

The various kinds of salt are put up for market in the following manner, viz:

Fine Salt in Bbls.	of 280 pounds.
Coarse Salt “	“ 280 and 320 pounds.
“ “ in Bags	“ 56 lbs.
“ “ (screened) in bbls.	of 280, 300 and 320 lbs.
Ground Solar in bbls.	of 280 lbs. and bags of 56 lbs.
Solar Dairy Salt “	“ 280 and 320 lbs.
“ “	“ 320, incl'g twenty-five empty 14 lb. bags.
	in 1-2 bbls. of 140 lbs.
	“ bags of 56 and 14 lbs.
Factory Filled Dairy in bags	of 240, 168, 140, 56 and 14 lbs.
	“ bbls. “ 280 lbs.
	“ 1-2 “ 140 lbs.

Orders addressed to J. W. Barker, Secretary Salt Co. of Onondaga, Syracuse, N. Y., will receive prompt attention.

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