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Salt industry of the Kanawha Valley

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SALT INDUSTRY OF THE KANAWHA VALLEY

A Thesis Submitted to the Graduate Council of Marshall College
in Partial Fulfillment of the Requirements
for the Degree of Master of Arts

By

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Marshall College
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 Kanawha Salt Company - 1817.
 Terms of Trust.
 Original copy owned by Jo. N. Kenna,
 Charleston, West Virginia. Has
 never appeared in print.

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 Kanawha Salt Company - 1864.
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INTRODUCTION

The manufacture of salt became at an early date one of the most important industries in the State of West Virginia. The development of this industry increased the population in various localities and aided in the improvement of transportation. There were, as two authors¹ have pointed out, "salt springs in nearly every county of the state." However the two chief centers of this industry were in the counties of Kanawha and Mason. The remaining salt wells were at Bulltown in Braxton County, on New River in Mercer County, on the Monongahela River in Harrison County, and at the mouth of Otter Creek on Elk River.²

The small town of Bulltown, on the Little Kanawha River, with a population of approximately thirty-five, had several salt furnaces. In fact the brine had been used as early as 1792 by Adam O'Brien "...a noted backwoodsman."³ The furnaces were not used commercially however until

1 Fast, R. E., and Maxwell, Hu, History and Government of West Virginia, p. 232.

2 Hale, J. P., History of the Great Kanawha Valley, p. 275.

3 Hughes, Josiah, Pioneer West Virginia, p. 28.

1809⁴ by John Haymond. A large part of northwest Virginia was supplied with salt by these furnaces until the middle of the nineteenth century. Haymond brought in his supplies from Pittsburgh since there were no roads over which he could bring heavy loads by wagon. Therefore the heavy salt pans and other equipment were shipped by flat boats to the mouth of the Little Kanawha and then were carried by smaller boats and canoes to Bulltown.⁵

Other salt furnaces were built in 1810 by John J. Jackson near Clarksburg on the Monongahela River. Mr. Jackson was "Among the pioneers who established homes in the Pringle settlement"⁶ near Buckhannon. These furnaces existed until around 1840, and there was much deep drilling done.

The furnace near Birch on Elk River was of minor importance. It merely supplied salt for local use.⁷

The furnaces mentioned by historians as being in Mercer County were evidently of no state-wide importance. In fact the Official Blue Book of Mercer County, West Virginia⁸ does not mention the salt industry. Coal, limestone and clay⁹

4 West Virginia (A Guide to the Mountain State compiled by workers of the Writers Program of the Works Project Administration in the State of West Virginia), p. 396. (Gives this date as 1810.)

5 Ambler, C. H., West Virginia, The Mountain State, p. 223.

6 Hughes, Josiah, Op. Cit., p. 29.

7 Hale, J. P., Op. Cit., p. 2.

8 Hedrick, Charles B., Official Blue Book of Mercer County, West Virginia.

9 Maury, M. F., and Fontaine, Wm. M., Mineral Resources of West Virginia, p. 390.

are listed as important natural resources, so surely these salt furnaces were only used locally.

Thus it is evident that the Kanawha and Mason County industries were the most important, with the Kanawha definitely in the lead in production until the middle of the nineteenth century. It is with the Kanawha, then, that this paper deals. This industry is traced from the earliest beginning, when salt was produced only for home use, to the valuable chemical progress that has been made in recent years. There is, too, a chance that with the World War II there may be a greater demand for the product, and a spurt of new prosperity may be noted.

SALT INDUSTRY OF THE KANAWHA VALLEY

Just as man felt a need for clothing and early found a method to meet this need, and just as he needed a home and found a way by which it could be supplied, so did man when he felt a definite need for salt find a way to satisfy that need. Early in the history of Kanawha Valley he fulfilled his desire by boiling down water in various places or "salt licks" of the Kanawha Valley so that he might have salt. Thus by man's desire for salt and his ability to supply that need the salt industry of the Kanawha Valley had its beginning. "The early pioneer settlers in a wilderness without communication with other settlements, except by foot or bridle paths, depended upon the Kanawha 'licks' for their scanty supply of salt."¹⁰

As early as 1671 salt-making by Indians¹¹ was

¹⁰ Maury, M. F., and Fontaine, Wm. M., Resources of West Virginia, pp. 278-279

¹¹ Atkinson, George W., History of Kanawha County from its Organization in 1789 Until the Present Time, p. 187. (As told by Joel Ruffner, son of David Ruffner and grandson of Joseph Ruffner), "A short distance below the mouth of Campbell's Creek, and immediately upon the bank of the Kanawha River, was a large, oval-shaped stone, on which were engraved, or chiseled, representations of all the different classes of animals which inhabited this country, including even the fish and serpents... The old citizens claimed that it was done by the Indians, who encamped about the salt spring for the purpose of hunting and killing game."

reported by explorers. The Indians collected water in wooden troughs and boiled the water by putting hot stones in it. Joel Ruffner related that,

There seems to be a general understanding among the old settlers that the Indians made salt from the water obtained from this spring (Kanawha Salt Lick) and used it to cure the meat of the game which they killed in great quantities, by keeping their hunters stationed in the vicinity of the lick.¹²

Before many permanent settlements were made in this vicinity by the white people these buffalo licks¹³ (another name for the Kanawha Salt Lick) were visited daily by buffalo, deer and elk. The early settlers kept themselves well supplied with fresh meat by watching for game to come to this spring. Daniel Boone, famous pioneer explorer, built his cabin only a very short distance from the salt springs on the opposite side of the Kanawha River. The deer in order to obtain salt would thus come to him, so Boone did not have to leave his cabin very far in order to hunt.¹⁴ Boone lived on what is now known as the Donnally farm.¹⁵ Mr. John P. Hale, an important pioneer and writer, tells of talking to

12 Atkinson, George W., Ibid., p. 187 (as told by Joel Ruffner).

13 Ibid., p. 187.

14 Miller, Thomas Condit, and Maxwell, Hu., West Virginia and Its People, p. 207.

15 Maury, M. F., and Fontaine, Wm. M., Op. Cit., p. 281.

Mr. Paddy Huddlestone who told tales of hunting with Daniel Boone in this vicinity.¹⁶

In these very early days salt was extremely scarce. William Haymond, an early settler of Morgantown, paid one thousand dollars in depreciated Continental currency for a peck of salt. Too, one of the first murders recorded in West Virginia occurred when one white man killed another in a dispute over a measure of salt.¹⁷ Then, "It is related that at one time when there was an apprehended attack from Indians the few early settlers were posted at the mouth of Coal River for protection."¹⁸ They were out of salt and needed it so badly that they sent some of the bravest young men to the Kanawha "Salt Lick" to get some salt. They knew fully the chance they were taking with the Indians, but they were able to fill their canoes with the water and bring it back. The women then boiled the water down and made salt. Thus it becomes evident that salt and the Kanawha "licks" played an ever important role in the lives of the early settlers and Indians. Moreover it was important to the furtherance of settlement and industry in this region. In fact the availability of salt brine in the Kanawha Valley was one of the important reasons for such chemical industries as the

16 Boone still resided at this place in 1789-1790 when Kanawha County was formed, and in 1791 he served in the legislature at Richmond as a delegate from Kanawha County.

17 Conley, Phil, West Virginia, Yesterday and Today, p. 795.

18 Hale, J. P., Op. Cit., p. 213.

West Vaco Chlorine Products Corporation and the Carbide and Carbon Chemical Corporation locating their plants in the Kanawha Valley.¹⁹

The water that had the greatest salt content in the Kanawha Valley of which there is any record was at Campbell's Creek on the Kanawha River, near Charleston.

The "Salt Lick" or the "Great Buffalo Lick" as it was called was just at the river edge, 12 or 14 rods in extent on the north side, a few hundred yards above the mouth of Campbell's Creek and just in front of what is now (1876) known as the "Thoroughfare Gap,"²⁰ through which, from the North, as well as up and down the river the buffalo, elk and other animals ran.²¹

Here in 1755 on the eighth day of July,²² a group of Shawnee Indians, who had captured Mrs. Mary Ingles, her two small children and her sister-in-law, stopped. "While the Indians

19 Charleston Daily Mail (Kanawha Valley Progress Edition, 1939). Also see map "Location of Kanawha Valley Salt Industry" facing p. 9.

20 Malden in 1942.

21 Maury, M. F., and Fontaine, Wm. M., Op. Cit., p. 281.

22 In 1755 the Shawnee Indians who dwelt on the Scioto, in what is now Ohio, made a raid on the frontier settlements of Virginia (Draper's Meadows). These Indians took their prisoners (Mrs. Ingles, her two children and sister-in-law) down New River, Kanawha and Ohio to their homes. Mrs. Ingles later escaped with an Irish woman, leaving her infant child in the woods. She passed again the spring where she had made salt, on her return travel. Mrs. Ingles had to leave the Irish woman to keep her from killing her for food, and she never really was sure what happened to her. However, she did hear later that she had successfully reached a lumber camp.

J. P. Hale said that the Indians would probably have killed Mrs. Ingles, but that they figured perhaps they could get a handsome ransom for her. They had spared her when she proved invaluable to them because of her skill in making clothing.

hunted, rested and feasted themselves at the salt spring, they put the prisoners to boiling brine and making a supply of salt to take with them to their homes beyond the Ohio."²³ Mrs. Ingles boiled water in some of her own pots and kettles that had been brought along on the "pack horses." Thus Mrs. Ingles became not only the first white maker of salt in Kanawha County of which we have any record, but the first anywhere west of the Alleghanies. Atkinson,²⁴ in fact, says he has never seen any record anywhere of an earlier white salt maker.

About one hundred years later Crockett Ingles, a grandson of this same Mrs. Mary Ingles, became a salt manufacturer in this same locality, and one of her great grandsons, John P. Hale, manufactured salt for thirty-five years within a few hundred yards of where Mrs. Ingles had made salt for the Indians. It was in this same neighborhood, too, that the first commercial salt was made in 1797.

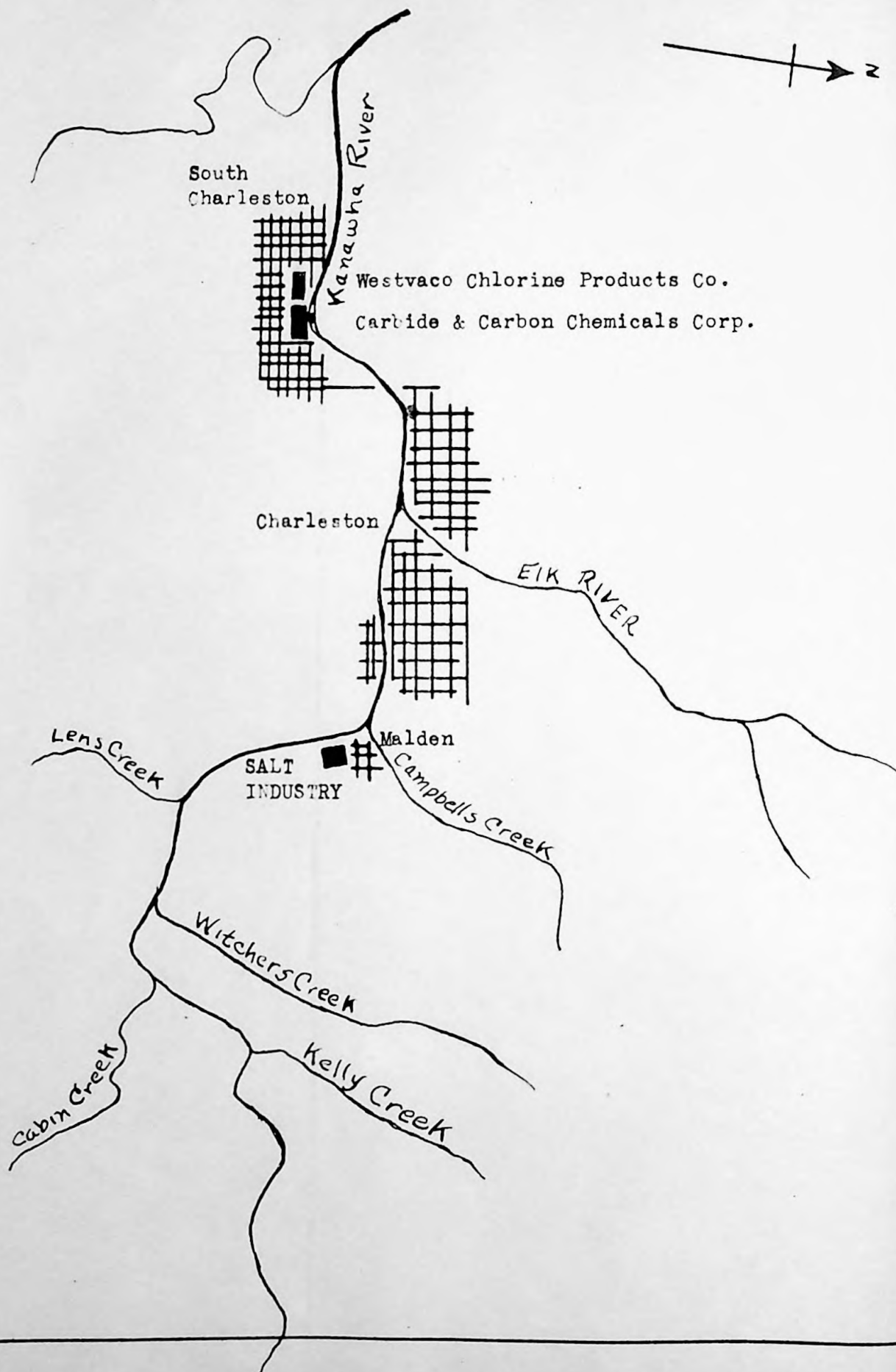
In the very earliest days of salt-making it seemed to be a part of the household duties to make salt by boiling down the water. It was considered a woman's job and the greatest economy was displayed in that day when everything must be made useful. Even

The women's wash kettles were put under requisition for a four fold duty, they boiled the daily hog and hominy, and other wholesome frugal fare; once

23 Hale, J. P., Trans Alleghany Pioneers, p. 38.

24 Atkinson, George W., Op. Cit., p. 225.

LOCATION OF KANAWHA VALLEY SALT INDUSTRY .



a week they boiled the clothes on wash day; semi-occasionally they boiled the salt water for a little of the precious salt, and every spring they went to the sugar camp to boil the annual supply of maple sugar and molasses.²⁵

Colonel J. Q. Dickinson bought the first land on Campbell's Creek in 1785 because of the availability of salt. He bought five hundred and two acres at the north of this creek, but he was not interested in developing the salt himself so he sold the entire acreage to Joseph Ruffner, a farmer in the Shenandoah Valley. Ruffner paid for the land without seeing it, but he was so profoundly impressed with Mr. Dickinson's description that seemingly he was unafraid of the venture. He paid five hundred pounds in sterling with the understanding that he would pay more, even to ten thousand pounds, if the quantity of salt permitted such a payment. It will be surmised from this that business transactions were then more or less on the nature of a gentleman's agreement. However, Ruffner bought nine hundred more acres when he came to the Kanawha Valley ".....extending from the mouth of Elk River up Kanawha."²⁶ He bought this extra acreage from George and William Clendenin ".....upon 40 acres of which the village of Charleston had been laid out and started the previous year."²⁷ Ruffner gave more attention to farming

25 Hale, J. P., Trans-Alleghany Pioneers, p. 212.

26 Atkinson, George W., Op. Cit., p. 226.

27 Maury, M. F., and Fontaine, Wm. M., Op. Cit., p. 280.

than to the development of salt. He died in 1803 with nothing but mere dreams of the salt industry. He had willed his property to his two sons, David and Joseph. During his lifetime he had tried to impress upon them his desire that some day the salt industry should be developed. It was not until three years after their father's death (1806) that these sons carried out their father's wishes.

Before his death the elder Ruffner had leased the use of the salt water to Elisha Brooks. To Brooks goes the honor of erecting the first salt furnace in Kanawha County or ".....in the Western Country."²⁸ He made one hundred fifty pounds a day and sold it at the kettles for eight to ten cents a pound.²⁹ No effort was made to purify the salt or alter the reddish tint. The people would take the salt from the kettles in their ".....pockets, handkerchiefs, tin buckets or pillow cases. Later it was taken in meal bags on pack horses and pack saddles."³⁰ The word "pack" was used so much in regard to salt being carried on pack horses by use of pack saddles that the public in this section used this word generally rather than the terms of fetch, bring, tote

28 Atkinson, George W., Op. Cit., p. 226.

29 Hale in telling of how Elisha Brooks made salt says ".....he sank two or three 'gums' some eight or ten feet each in length, into the mire and quicksand of the salt lick, and dipped the brine with a bucket and swape, as it oozed and seeped in through the sands below." (Hale, J. P., History of the Great Kanawha Valley, p. 213.)

30 Atkinson, George W., Op. Cit., p. 240.

and take, as used in Old Virginia.³¹

This first salt furnace, as built by Elisha Brooks, consisted of twenty-four iron kettles arranged in a double row. These kettles were held on a rock wall and were heated by a wood fire. The fire was at one end and a chimney was at the other end. This furnace resembled very much the furnaces of the "old-fashioned maple camps."³² The brine was poured into the kettles and was permitted to boil down until the salt crystallized. "The salt crystals were lifted from the kettles, drained for twenty-four hours on a perforated drain board, and then wheeled to the storage warehouse to be packed in barrels."³³ If the producers desired to increase the production they merely bought larger kettles or added more kettles.

In these earlier days the salt maker was altogether dependent on the use of wood in the manufacture of salt. All the equipment, including drilling rigs, pipes, barrels, and even the flat boats used for transportation, was made of wood. In fact so many trees were cut and used that the manufacturers exhausted the local supply. Even line trees³⁴ were cut in

31 Maury, M. F., and Fontaine, Wm. M., Op. Cit., p. 280.

32 Crawford, E. T., "Salt, Pioneer Chemical Industry of the Kanawha Valley," West Virginia Review, April 1936, p. 208.

33 Ibid., p. 208.

34 These line trees were used as a method of marking the edge of property. Any kind of tree or bush or sometimes line rocks were used. One notch indicated a line mark and three notches indicated the corner.

some cases, and this was directly the cause of some lawsuits in later years.³⁵ Even the pipes which carried the brine from the wells to the furnace were made of wood. These pipes were usually made of poplar. However, the Ruffner brothers began the use of tin tubing instead of the wood. A tinner in Charleston, who made cups, coffee pots, etc., made this tubing. Finally copper tubes were used and later iron tubes.³⁶ In fact the manufacturers of iron were very much interested in the development of the salt industry. When a higher tariff was imposed on salt in 1828, that was one argument used against the high tariff -- that the iron manufacturers would suffer too.

This important manufacture (iron) derives more support from the capital invested in salt making, than from the same amount devoted to any other pursuit. A salt furnace that will make one hundred bushels of salt per day, requires in its erection, in kettles, pans, grates, bars, etc., from eight to ten tons of cast iron, costing from Sixty to Seventy Dollars per ton, and half a ton of bar iron. In addition to this.....from one thousand five hundred to two thousand pounds of wrought iron are annually required by such a furnace in repairs, and to replace damaged articles.³⁷

It is therefore easily understood why the iron manufacturers were interested in the survival of the salt industry.

In 1806 David and Joseph Ruffner began to produce

35 Crawford, E. T., Op. Cit., p. 208.

36 Atkinson, George W., Op. Cit., p. 231.

37 "Domestic Salt," The Banner, October 8, 1830.

salt to meet the public demands.³⁸ They began to bore a well in search of stronger brine. Up until this time the water had been dipped from near the surface. By boring down through the rock to a depth of four hundred feet and piping the water to the surface they found that the brine was many times stronger.³⁹ In fact forty-five gallons would yield one bushel of salt. Before this it had required around eight hundred gallons to produce one bushel.⁴⁰ The Ruffner brothers worked eighteen months to achieve this success in deep boring. By 1831 Billy Morris had invented what is commonly called "Slips" or in the oil fields "Jars." This tool thereafter was used in deep boring. He never received any acclaim or honor for his contribution to the salt industry, and perhaps never received a dollar in financial reward,⁴¹ but the invention nevertheless was important. "It is a long double link, with jaws that fit closely but slide loosely up and down....."⁴² Wells were now drilled from five hundred to two thousand feet. The two-thousand-foot well was drilled by Charles Reynolds.

38 Atkinson, George W., Op. Cit., p. 230. The Ruffner brothers made their first salt on February 8, 1808, and sold it for four cents a pound.

39 These brothers found oil and gas mixed with the water at this time, but seemingly were not at all impressed.

40 Miller, Thomas Condit, and Maxwell, Hu, Op. Cit., p. 209.

41 Atkinson, George W., Op. Cit., p. 232 (as told by J. P. Hale).

42 Ibid., p. 232.

At first people had ridiculed the Ruffners very severely. However, after their experiment proved a success the neighbors were not long in building their own salt works so that they could use the Ruffners' method. Soon there were several salt works along the Kanawha River. These furnaces included those of William Whittaker, Tobias Ruffner, Andrew Donnally and others. It seems that Tobias Ruffner was the best known of these salt producers locally, and he was a very interesting character. He "...was a plain unlettered farmer, but a man of extraordinary genius. He cultivated a large farm, and was his own carpenter, cooper, blacksmith, agricultural instrument maker and artificer in other mechanical arts, and made all his own tools in each department."⁴³

By 1808 the Ruffner brothers were making twenty-three bushels of salt a day and selling it for two dollars a bushel.⁴⁴ In August, 1810, there were eleven furnaces on the Kanawha, each containing sixty kettles and making about four hundred bushels of salt a day.⁴⁵ By 1815 in this same region there were fifty-two furnaces, the total daily capacity of which was from two thousand five hundred to three thousand

43 Ibid., p. 180.

44 Miller, Thomas Condit, and Maxwell, Hu, Op. Cit., p. 209.

45 Lippincott, I., "The Early Salt Trade of the Ohio Valley," Journal of Political Economy, p. 1047 (quoting Cramer, p. 95).

bushels.⁴⁶ By 1817 there were thirty furnaces and fifteen or twenty wells which were making six hundred thousand to seven hundred thousand bushels of salt.⁴⁷ This gives some idea then of the amount of salt produced in the Kanawha Valley during the period of the war of 1812. However, by this time competition was becoming keen.⁴⁸

No doubt other sections were impressed with the advantages of the salt industry of the Kanawha Valley and made attempts to obtain a definite supply of their own. In a letter to the Governor of Virginia in 1814⁴⁹ it is indicated that the advantages had been definitely noticed, and a plan worked out by which the state government could obtain a supply east of the Alleghany Mountains. In fact Phil R. Thompson wrote,

I have determined without delay to trouble you with a few observations on the subject, supposing it possible you may consider the matter sufficiently important to call the attention of the Legislature to the consideration of some means by which the roads may be put in such a state as to admit supplies of Salt to be drawn from thence in wagons during the next year. The benefit which would result from opening an easy communication to an abundant store of such an indispensable necessity of life, is too obvious to require comment.⁵⁰

46 Niles, H., Op. Cit., p. 135.

47 Maury, M. F., and Fontaine, Wm. M., Op. Cit., p. 284.

48 Lippincott, I., Op. Cit., p. 1043.

49 Calendar of Virginia State Papers - Letter from Phil R. Thompson to the Governor, December 16, 1814, p. 408 (Richmond, State Library).

50 Ibid., p. 408.

Thompson went even further to show that any steady demand would cause other furnaces to start to work. The price, for three months past when the demand had been greater, was one dollar for a Kanawha bushel of fifty pounds. However, within the last three weeks, he pointed out, the price had fallen to eighty-five cents because the roads were impassable by wagons -- even though the demand was still high. He believed that if the furnaces had a steady demand the price could be brought down, because at one dollar a bushel the profit was enormous. Thus it is seen how necessary this salt was to the people during this period. It was estimated that if one sixth of the salt produced in the Kanawha Valley in 1814 was transported east in wagons it would require two thousand five hundred wagons ".....which paying a toll of one dollar giving and receiving would yield Five Thousand Dollars."⁵¹

This, of course, was only an estimate, but the importance of salt is still shown. In fact,

.....a few towns owed a considerable part of their early prosperity, and of course some addition to their population, to the salt trade originating in their locality. These places were Shawneetown, Ill., and a few of the towns along the Kanawha in the present West Virginia.⁵²

The Ruffner brothers were the first to use coal as

51 Ibid., p. 410. This would have been a valuable source of income to the Virginia State Government.

52 Lippincott, I., Op. Cit., p. 1037.

a fuel in the salt furnaces. By the use of cheap fuel they were able to produce salt more cheaply than it had been produced thus far. However, it took several months of experimenting before the use of coal was entirely successful. "A contract was given John Turner in 1817 to furnish all the coal needed for fuel at the Ruffner furnace. The other salt makers followed this example by using bituminous coal dug from their own property."⁵³ Here again the Ruffner brothers led in the development of the salt industry. However, in 1815 Captain James Wilson struck a flow of natural gas while drilling for salt water, and afterwards gas was used as fuel to some extent. Most of these salt wells contained petroleum, too. This was allowed to flow on top of the water and because of the "beautiful iridescent hues, and not very savory odor could be traced many miles down the stream."⁵⁴ Boatmen and others then nicknamed the river "old Greasy." The oil had no value at this time and the drillers wanted merely to be rid of it.

Along the Kanawha River near these salt furnaces were found small pools of stagnant water. The water seemingly was boiling as in a pot. By holding a lighted torch near, the gas, which caused the bubbling of the water, would immediately ignite.⁵⁵ "The gas escaping from the earth here is

53 Atkinson, George W., Op. Cit., p. 211.

54 Ibid., p. 233.

55 Hale tells the story of a college professor who didn't believe this, and consequently burned his clothes and body. He had been warned but wouldn't heed the warning.

doubtless from the same great laboratory of nature as that which flows up through the perforated rock, from the great saline reservoir beneath it."⁵⁶ Women quite often hung their wash kettles over the basins and heated water in this manner. These pools created a good deal of excitement among travelers, when in fact they were nothing but holes in the ground from which gas issued, even though filled with water when it rained. This gas made the water look as if it were boiling, and of course could be lighted. It is unusually interesting to note a part of George Washington's will⁵⁷ which read,

These tracts are situated on the Great Kanawha River, and the first four are bounded thereby for more than Forty Miles - It is acknowledged by all who have seen them that there is no richer, or more valuable land in all the Region. The ore conditionally sold for the sum mentioned in the Schedule - that is \$200,000 and if the terms of that Sale are not complied with they will command considerably more - The tract of which the 125 acres⁵⁸ is a moiety, was taken up by Gen. Andrew Lewis and myself, for and on account of, a bituminous spring, which contains of so inflammable a nature as to burn as freely as spirits, and is nearly as difficult to extinguish.⁵⁹

In 1841, William Tompkins, while boring a salt well a short distance above the burning spring (mentioned in Washington's will) struck a large flow of gas. He used this

56 Atkinson, George W., Op. Cit., p. 211.

57 Prussing, E. E., The Estate of George Washington Deceased, p. 77.

58 Washington deeded this to the public.

59 Prussing, E. E., Op. Cit., p. 77.

gas by "boiling his furnace"⁶⁰ with it, and making salt. This put in effect a great saving in fuel and a great reduction in the cost of salt.

In 1843 Messrs. Dickinson and Shrewsberry hit a great gush of gas and salt water. Hale says, "I heard it roughly estimated as being enough to light London and Paris, with perhaps enough left to supply a few such villages as New York and Philadelphia."⁶¹

The salt water and gas from this well were partially collected and conveyed through wooden pipes, to the nearest furnace where they were used in making salt. For many years this natural flow of gas lifted the salt water 1,000 feet from the bottom of the well, forced it a mile or more through pipes, to a salt furnace, raised it into a reservoir, boiled it in the furnace, and lighted the premises all around at night. About the only objection to the arrangement was, that it did not lift the salt and pack it in the barrels.⁶²

This of course encouraged other salt makers to dig deeper wells. However, the economical feature of using gas along with salt as they were found together was not present in any other salt work "on the continent."⁶³

The Kanawha River was the chief means of transportation for salt. The first shipment was made as early as

60 Maury, M. F., and Fontaine, Wm. M., Op. Cit., p. 288.

61 Hale, J. P., History of the Great Kanawha Valley, p. 289. (He tells the reader, however, to take this "cum grano salis.")

62 Atkinson, George W., Op. Cit., p. 236.

63 Debar, J. H., West Virginia Handbook and Immigrant Guide, p. 133.

1808. The salt was packed in tubs, boxes or hogsheads and put on rafts or canoes.⁶⁴ Later the salt was packed in barrels made from white oak wood and put on flat boats that were really "home-made." These flat boats carried the barrels down the Kanawha River, and down the Ohio River, and supplied the settlers of Ohio, Indiana, Kentucky and Illinois. Sometimes the flat boats sank with the salt. The boats were recovered, but the loss of the salt was (often) a very serious financial loss to the salt manufacturer. The Kanawha boatmen were known for their skill, but even they could not successfully deliver every load of salt. These flat boats were from fifty to seventy-five feet long, and ten to eighteen feet wide. They were run by hand. These boats were increased to one hundred sixty feet in length and to twenty-four or twenty-five feet in width. They could carry from one thousand eight hundred to two thousand two hundred barrels of salt. Two sizes of barrels were used, the two-hundred-and-eighty-pound barrel and the three-hundred-and-fifty-pound barrel. They were made of "white oak staves and

64 "The first salt shipped from the Kanawha Salines was in boats called 'juroques.' They were made from the largest sized poplar trees, dug out like a canoe and ranging in length from sixty to eighty feet. Afterwards a better class of boats was introduced, known as 'bitterheads.' They were made very much on the style of the common flat boat now used on our small rivers for carrying light freights." See Atkinson, George W., Op. Cit., p. 188, as told by Joel Ruffner. Ruffner believed that William Plummer who lived near Marietta, Ohio, was the first man to use the keel boat on the Kanawha River.

hickory hoops."⁶⁵

The introduction of the steamboat in 1824 on the Kanawha River increased the market area considerably. By "1825 the attitude of the western people in regard to the importance of their salt reserve began to change the Kanawha River was (now) able to supply a large part of the upper Mississippi Valley."⁶⁶ However, they were still using flat boats in 1857⁶⁷ and there was much criticism of the James River and Kanawha Company because nothing was done to improve the Kanawha River for the flat boats. The people of Kanawha County believed that the legislature should pass a law dividing the James River and Kanawha Company since there had been no meeting in Charleston for four years. It was too expensive for the directors to come to Charleston; therefore the Kanawha River was not improved for the coal and salt trade. "Kanawha River is so uncertain and dangerous for flat boats loaded with salt and coal."⁶⁸ The Salt Companies at this time (1857) included the Ruffner, Donnally & Company, The Ruffner Hale & Company, with Andrew P. Fry and Harry M. Orderdark as salt inspectors.⁶⁹ Then a letter to N. B. Coleman, Secretary of the Kanawha Salines, in August,

65 Atkinson, George W., Op. Cit., p. 240.

66 Lippincott, I., Op. Cit., p. 1034.

67 "James River and Kanawha Company," Kanawha Valley Star, November 24, 1857.

68 Ibid.

69 "The Kanawha Directory," Kanawha Valley Star, March 10, 1857.

1863,⁷⁰ indicated the Kanawha Valley industries were still experiencing difficulty in navigating the Kanawha River. In fact, Mr. T. L. Jefferson⁷¹ wrote that he had experienced much difficulty in reaching Louisville, Kentucky, by steamboat. Then too he was unable to sell his ten thousand four hundred eighty-seven small barrels of salt. He wrote, "I find it very hard to compete with my competitors, in having old weather beaten bbls. to sell alongside of their new cooperage. I have been trying hard to sell what salt I have already stored in open lots, but find it hard to get off."⁷² It is easy to see that the Kanawha manufacturers were at a distinct disadvantage.

Salt (by 1876) was shipped eastward by rail, to the nearer western markets by daily and weekly steamboat packets, and to the more distant markets by tow boats and barges. A tow boat will now take 8,000 to 15,000 barrels at one trip, landing them at Louisville, Evansville, Nashville, Memphis, St. Louis or elsewhere.⁷³

Besides the problems of transportation there were difficulties in production. With the expensive kettle furnace the salt industry of West Virginia increased so much that it caused a decline in the price of salt and to improve

70 Notice this is during the Civil War, and just after West Virginia had become a state.

71 Letters of N. B. Coleman, T. L. Jefferson letter from Louisville, Kentucky, 1863.

72 Ibid.

73 Atkinson, George W., Op. Cit., p. 240.

this situation sixteen salt makers from Kanawha Valley met November 10, 1817, and were able to reach a trade agreement by which they could control the making of salt and would be able to regulate the price. This was the first trust to be organized in the United States.⁷⁴ This trust was known as the Kanawha Salt Company.⁷⁵ It began its operations January 1, 1818. The following men signed the agreement and became members of the company: Daniel Ruffner, Tobias Ruffner, David Ruffner, William Steele of Kentucky, Stephen Radcliff, Aaron Stockton, John Reynolds, Leonard Morris, Charles Morris, William Steel and Company, Charles Brown, Andrew Donnally, Isaac Noyes, Bradford Noyes, John I. Cabell and Joseph Lowell.

The articles of agreement⁷⁶ stated that the company would dissolve on December 31, 1822. There was to be a Board of Directors of five members, who selected a president from their own body. By a two-thirds majority vote new directors could be chosen. The price of salt was to be regulated. The salt had to be of good quality and "nailed in good and sufficient barrels."⁷⁷ The salt had to be packed ten days before delivery and the weight marked on the head of the

74 A good article on this trust by W. Hilton Higgins is in the West Virginia Review, September 1924, "First Trust in the United States."

75 Articles of Agreement Association and Copartnership. See Appendix A. Jo. N. Kenna of Charleston has original. This is the first time this paper has been printed.

76 See Appendix A for a copy of the original paper.

77 Original papers of trust, Appendix A.

barrel along with the name of the manufacturer. No manufacturer was allowed to lease his furnace without first guaranteeing that all the salt manufactured should meet the requirements of the agreement. It was recommended that certain ingredients not be used in the manufacture of salt by any of the subscribers during the continuance of the company in order to maintain a good quality. If it were discovered that something had been added the president and directors were to make a deduction.⁷⁸ The quantity produced was limited to four hundred fifty thousand bushels a year, and it was specified how many bushels each manufacturer might produce. The majority of the subscribers might change the salaries of the president, directors or clerks at any time. If any salt remained on hand at the end of the year, the salt was not to be sold at a cheaper price.

This company then really acted as sales agent for all the manufacturers of salt. The only time the fixed sale price was not adhered to was when importations from England or the West Indies caused a reduction in prices. However this trust injured its financial conditions by dead-renting⁷⁹ all of the furnaces to a New York concern which paid six months' rent and then refused to pay any more. Thus the salt makers had to go back to work in their old furnaces that had

78 See Art. 7 of original agreement, Appendix A.

79 Crawford, E. T., Op. Cit.; this dead-renting meant shutting down the salt industries and not producing any salt and because of this receiving rent.

been badly damaged in almost every case. This company dissolved January 1, 1822. Its operations then covered only four years.

The Kanawha County manufacturers of Virginia were against the repeal of the salt duty as discussed in Congress in 1828. This duty had permitted the Kanawha Salt Companies to operate and receive a small profit on their investment. Therefore a committee prepared a "Memorial of the Manufacturers of Salt in Kanawha Co. Virginia Praying for a restoration of the duty on the Imported Salt."⁸⁰ This article as given to the Twentieth Congress on January 21, 1830, traced the different taxes as imposed on salt and tried to show that the industry could not exist if this duty was not continued. In part it read,

..... The removal of the burdensome restriction from the English salt makers, and the consequent enlargement of their works, so increased the exports from that country that in defiance of protections and duties at home we received from the 1st of October, 1828, to the 30th of September in the following year, 5,945,547 bushels of foreign salt; and from an official statement received from the Treasury department (Appendix F) it will be found that so great was the importation in the last quarter of the year 1829, amounted to the enormous quantity of 6,494,370 bushels..... It is thus seen that the protection heretofore given to domestic salt, so far from diminishing our foreign trade in that article, has been attended with a regular increase..... If it is deemed important that the revenue laws should be modified, with a view to increase the employment of American tonnage engaged in foreign trade, it is humbly submitted, whether the experiment can, with justice and

80 Memorial of Manufacturers presented to Twentieth Congress. (West Virginia State Library has original copy.)

propriety be confined to a single article of home production?.....⁸¹

In general it seemed that the people of the Kanawha Valley were also opposed to the repeal of the salt duty.⁸² Of course this attitude could be expected because it was to the advantage of the people in this section to have the manufacturing of salt increased and protected. Some of their reasons are found in an editorial,⁸³ which reads, in part,

..... The home supply (of salt) now equals one half of the national consumption, and in a few years would have rendered us independent of foreign powers, for this article of primary necessity. But the light newly discovered by the school of politicians who have succeeded the framers of the constitution and the founders of our national prosperity seems to lead to the conclusion that the American people ought to be reduced to a dependence on British salt makers for their future supplies. When the American Manufactories shall be broken up, the British government will have only to impose an export duty on salt to tax the citizens of the United States for every bushel of salt which they shall receive from Liverpool or Lymington.....⁸⁴

Indeed this argument seems a very logical one.

81 Ibid.

82 "The duty on salt was urged because salt was being brought at that time to New Orleans as ballast for ships and distributed along the Mississippi and the Ohio by the numerous steamboats....." See Ambler, C. H., A History of West Virginia, p. 208.

83 "Duty on Salt," The Banner, September 24, 1830. Kanawha County, Virginia.

84 Ibid.

Too, the people felt that the salt industry helped other industries such as the iron manufacture,⁸⁵ therefore in hurting the salt industry by lack of a tariff the closely allied industries would of necessity be ruined.

Evidently there had been much criticism of the trust formed in the Kanawha Valley. This trust had been referred to as a monopoly and people objected to a few persons controlling the prices and production of salt. During the debate over the salt duty in Congress, Senator Thomas H. Benton favored the repeal of the duty on salt. He said that there had been criticism to the effect that the salt works had in some cases been centered in the hands of one individual. Mr. Benton believed Congressmen were referring to the Kanawha manufacturers.⁸⁶ However The Banner maintained that the consumer was allowed to be supplied more cheaply, and this was helpful to the country at large.⁸⁷ So it seems that this trust formed in 1817 in the Kanawha Valley might have been somewhat responsible for the repeal of the salt tariff. Certainly this conclusion is reasonable, or why would Mr. Benton have referred to this trust? On November 22d the manufacturers of salt in the Kanawha Valley had a meeting at Terra Salis. At this meeting a memorial written to Congress asking for a restoration of foreign duty on salt at twenty

85 This is shown earlier in this paper.

86 "Summary of Mr. Benton's Speech," The Banner, November 26, 1830.

87 Ibid.

cents per bushel was read. They also adopted a resolution at this meeting:

..... That the chairman communicate to the Hon. Lewis Maxwell, our representative to Congress, the thanks of this meeting for his uniform and efficient support of the interests of American manufacturers, and particularly for his steady effort to save our infant establishments for the production of salt from the overwhelming force of foreign competition.....⁸⁸

Joseph Friend and son built the largest kettle furnace in the valley in 1830. This furnace had the capacity to produce one hundred thousand bushels per year. The production of salt by the kettle furnace required an enormous amount of labor,⁸⁹ and was highly expensive. The salt production of one kettle required one pound of iron for every one hundred forty pounds of salt manufactured.⁹⁰

In 1833 plans for a new patent steam furnace were brought to Kanawha Salines (now Malden, West Virginia) by George H. Patrick of Onondaga, New York, to improve the production of salt. In this same year the Kanawha Banner carried an editorial about this furnace, and indeed seemed very enthusiastic over the future prospects of the industry.⁹¹

88 Shrewsbury, J., Benton's Speech (gives his complete speech to Congress), Kanawha Banner, November 26, 1830.

89 Lippincott, I., Op. Cit., p. 1046. "Those in Western Virginia had the opportunity of employing slaves." He came to this conclusion from an article in a Virginia paper which said that out of five hundred laborers, one half were slaves.

90 Crawford, E. T., Op. Cit., p. 209.

91 Crawford quoted this editorial in his article, Op. Cit., p. 224.

With these simple fixtures, the proprietors are now making not less than two hundred bushels of salt per day with much less labor and a consumption of a smaller quantity of coal than is required by an ordinary kettle furnace which produces much less salt. In the process all the foreign matter is excluded; and the salt produced is, both in appearance and quality, the equal to any in the world. With the means of production almost unlimited, the salt from this region would have supplied nearly the whole territory on the Mississippi and its tributaries, had not alum salt been deemed indispensable in putting up provisions for commercial purposes, distant shipments and the like. This led to the introduction of alum salt from the West Indies, which to the extent, excluded the domestic salt from the market. The alum salt now manufactured here being in no respect inferior to the imported, and furnished at a lower price, will ere long, entirely exclude or supersede the use of the foreign articles, or all the western markets.

Other salt makers began using the Patrick furnace in 1834, and have continued using it with only minor changes having been made. This system was later adopted by the Ohio River manufacturers.⁹²

The production increased greatly after this invention was widely used. Atkinson's furnace in one month made forty-one thousand bushels by use of one of these furnaces.

The salt crystals from the furnace were white and not like the red crystals of earlier days. The salt from this type of furnace was exhibited and won prizes at the first World's Fair in London in 1851. Three grades were manufactured, "Common, Fine and Dairy."⁹³ Specimens of this last grade attracted notice at the Paris Universal Exposition

92 Atkinson, George W., Op. Cit., p. 239.

93 Debar, J. H., Op. Cit., p. 133.

in 1868.

There were several characteristics of this grade or variety of salt, four of them being very outstanding:⁹⁴ (1) it is more lively, pungent, and has a pleasant taste as a table salt; (2) it is the only commercial salt free from sulphate of lime; (3) it does not cake on the outside of meat but penetrates; (4) a lesser quantity is needed because of its penetrating qualities.

The Civil War period is an interesting one in the development of the salt industry in the Kanawha Valley. However, this period has not been as yet adequately discussed by any writer. Debar tells us that casualties of the Civil War "bore heavily upon the Kanawha Valley,"⁹⁵ but within the next few years (around 1870) conditions of the salt industry began to improve again. Much of the property was offered for sale after the Civil War. In fact the only remaining salt industry today, J. Q. Dickinson Salt Company, had to shut down during the Civil War, the only cessation in its operations since 1832. However, by a "Constitution of the Kanawha Salt Co.," of 1864⁹⁶ it is proved that the following

94 Atkinson, George W., Op. Cit., p. 248.

Higgins, W. H., West Virginia Review, September 1924, says that the Kanawha salt is purest except that from Turks Island. Both are free from calcium sulphate.

95 Debar, J. H., Op. Cit., p. 133.

96 See Appendix B for this Constitution.

men and companies were operating furnaces: Morrison and Oakes, A. P. Fry, Lewis and Son, Walker and Shrewsbury, H. W. Reynolds, H. H. Wood, F. A. Laidley, James H. Fry, L. Ruffner, Jr., and J. E. Thayer and Company. Mr. John P. Hale was President and Office Agent. Gen. L. Ruffner was General Advisory Agent, and J. D. Lewis and A. P. Fry were Consulting and Shipping Agents. These signers pledged themselves to unite all their salt and sell it through this one company after January 1st. It took a two-thirds vote to dissolve the company and the net proceeds were to be divided according to the salt delivered. "Each member shall be entitled to one vote for every thousand bushels of salt, and fractions exceeding five hundred bushels, made and delivered by him during the preceding month."⁹⁷ Thus this company seemed to be formed very much as the salt company or trust was in 1817. Agents of the company were elected annually by a two-thirds majority. If any member leased his furnace, the purchaser had to fulfil the same obligations. One third of the salt produced must be put in two-hundred-eighty-pound barrels, and this was to be of the best quality. The remainder was to be put in uniform packages. The salt had to be put in well seasoned barrels, with at least ten hickory hoops, and then "it shall lie on the yard not less than five days after packing before being weighed."⁹⁸ Then at any time it

97 Ibid., Sec. 7.

98 Ibid., Sec. 9.

seemed necessary the company could require the subscribers to suspend operations. Surely then the salt industry was not "dead" during the Civil War. An interesting part of this Constitution is Section 15:⁹⁹ "All furnaces and engines shall be blown out at daylight Sunday mornings, and fire shall not be put in the engines before dark, and in the furnaces before twelve o'clock Sunday night."

Nevertheless it is noted that earlier in the Civil War period some of the furnaces had to be closed. In fact "By Sept. 1862,¹⁰⁰ the Kanawha works were producing but little salt owing to the lack of coal to run the furnaces. This lack of fuel was due in turn to the absence of blasting powder."¹⁰¹

This fact was presented to Secretary of War Randolph of that year,¹⁰² and the Confederacy feeling the need of the salt from the Kanawha Valley formed a Joint Committee¹⁰³ from the Senate on the Salt supply in September of 1862. Two resolutions were given to this committee. One from Joseph A. Alderson, a delegate from Braxton and Nicholas Counties, to

99 Ibid., Sec. 15.

100 The year before this there was the "highest known flood in the valley." (See Crawford, E. T., Op. Cit., p. 248.)

101 Lonn, E., Op. Cit., p. 235.

102 Ibid.

103 Joint Committee on Salt Supply (original papers).
Virginia State Library.

the Senate¹⁰⁴ read:

Resolved by the General Assembly that the Governor of this commonwealth be requested to send an agent to the Kanawha salt works in the County of Kanawha and that said agent be required to report to this body without delay, what quantity of salt is on hand there, the facilities for making salt - how many furnaces are in operation, and how much salt can probably be produced per month and such other facts as said agent may deem proper.

Another resolution was presented to the "Committee of Salt Supply" by William D. Quesenberry, a member of the Senate from Caroline County. This read "Resolved that the joint committee on salt be instructed to inquire into the practicability of obtaining a supply of salt from the Kanawha Salines now in possession of our army."¹⁰⁵ Thus a clear idea is received of how important they felt this salt was to the Confederacy. In fact an Ex-Confederate officer in making a lecture in Syracuse, New York, asked his audience if they knew why they whipped the Southerners. When they said no, he answered "because you had salt."¹⁰⁶ These resolutions of Alderson and Quesenberry were filed by the Joint Committee, but the committee does not say when they were acted on or what disposition was made of them.

The Kanawha Valley manufacturers too were shipping

104 Letter of Joseph A. Alderson (original). Virginia State Library.

105 Letter of William D. Quesenberry (original). Virginia State Library.

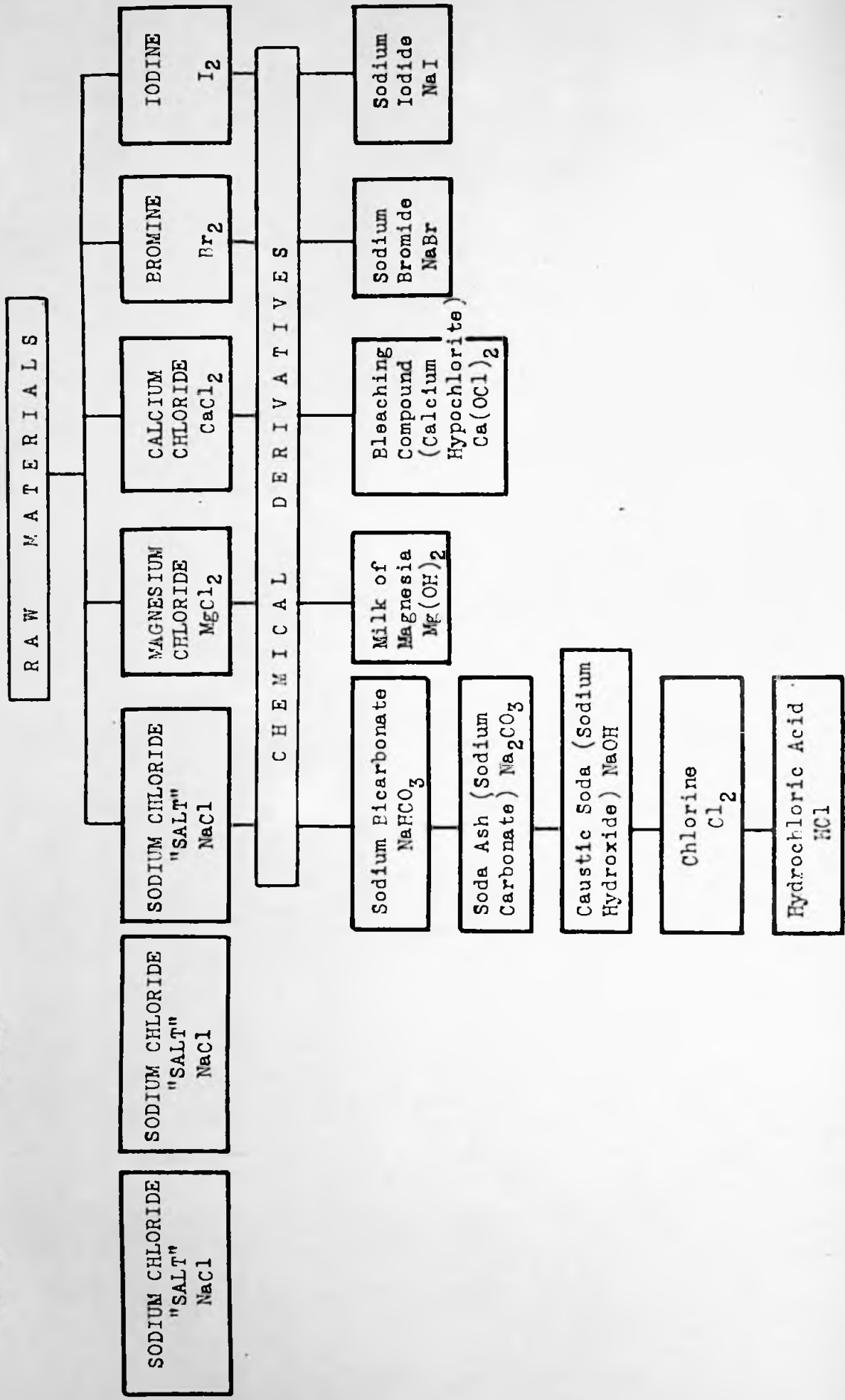
106 Lonn, E., Op. Cit., p. 1.

PRODUCTS FROM SALT BRINES IN THE KANAWHA VALLEY

1797

1918

1939



salt by steamboat to Louisville in 1863¹⁰⁷ -- indicating, of course, that transportation was not at a standstill. Too, an income statement in 1862 shows that considerable capital was invested in the salt industry, despite the fact some furnaces had to stop producing. This income statement for Morrison and Oakes showed "For one half of Salt manufactured and sold, \$32,464.79."¹⁰⁸ However from this total were deducted expenses for one half lease on the salt property, one mule stolen, one half of tax on salt, and five valuable negroes.¹⁰⁹ The fact remains however that regardless of the capital invested or the number of furnaces shown in Kanawha Valley during the Civil War, production decreased constantly. In fact the production had begun to decline in 1850. The peak had been reached in 1846.¹¹⁰ In speaking of the salt industry at Malden, Hughes said "This place became famous for its salt production, reaching its acme between 1842 and 1855."¹¹¹ Nor has the production of any of the plants in West Virginia increased since the World War of 1917.¹¹² Atkinson's figures show that in the Kanawha Valley

107 Refer to footnote No. 71.

108 Statement of Income in 1862 (one of the Nelson Coleman letters, which are to be found in the West Virginia State Library).

109 Ibid.

110 See Graph "Products From Salt Brines in the Kanawha Valley" facing this page.

111 Hughes, Josiah, Op. Cit., p. 101.

112 Conley, Phil, Op. Cit., p. 222.

between the years of 1797 and 1875, ten furnaces produced twenty-five hundred thousand bushels of salt.¹¹³

The J. Q. Dickinson Salt Company was established in what is now Malden, West Virginia, in 1832 as the Dickinson and Shrewsbury Salt Furnace. Malden has been called both Terra Salis and Kanawha Salines. So important was salt to this town around 1830 that a hotel there was called the Saline Hotel. A hack was advertised as running twice a day from this house to Charleston and back, and the bar and table were supplied with the best the country afforded.¹¹⁴ Even today this small town is very proud of the fact that it was the early center of the salt industry. A plaque may be found in the town reading "Early center of salt-making industry. In 1755 Mary Ingles and Betty Draper made salt for Indian captors here. Col. John Dickinson bought the Buffalo Salt Licks in 1785."

However in reality this company has just a small part of its former capacity. At times in the eighteen hundreds the salt industry of Malden employed three thousand men; today only forty-five are employed,¹¹⁵ and in the year 1938 two less were employed. They produce now from one hundred fifty to one hundred eighty barrels of salt per month. This is close to thirty tons. However, their by-products

113 Atkinson, George W., Op. Cit., p. 248. (He gives a complete table.)

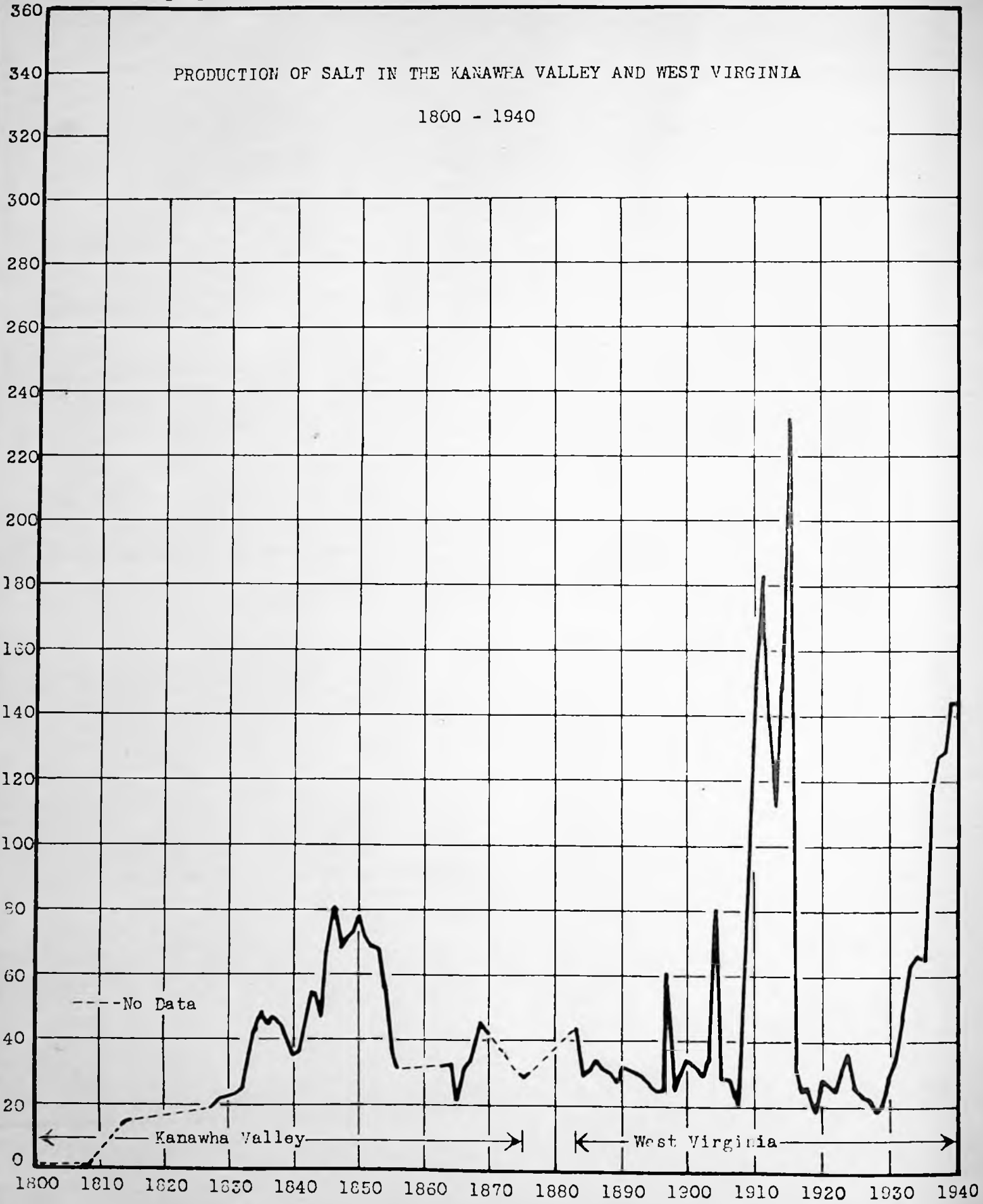
114 The Banner, October 22, 1830.

115 This is information gathered from a personal visit to the furnaces.

Thousands of Tons

PRODUCTION OF SALT IN THE KANAWHA VALLEY AND WEST VIRGINIA

1800 - 1940



have been increased. Bromine, calcium, magnesia, chloride, bromide and salt brick are now made. The bromide is used for medicinal and photographic purposes. This product is sold almost entirely to Squibbs and Company, and the Ansco Film Company. Their products are shipped to points all over West Virginia, Virginia, Kentucky and Tennessee.

Salt is shipped in barrels. Some barrels contain seven bushels, others contain two hundred eighty pounds. Then too some one-hundred-pound bags are used, and in very recent months some shipments are made in fifty and twenty-five-pound bags.

Shipping is done by both rail and truck -- over half of the shipments being made by truck.

This salt company has been owned and operated by the same family since 1832. Until 1850 it was Dickinson and Shrewsbury. This company uses the same heading on letters as it did fifty years ago, with the exception of letters sent to companies interested in the by-products and not in the salt alone. This company advertises as makers of genuine salt, and claims the same qualities, as shown earlier in the paper, of Kanawha Valley salt.¹¹⁶

Little progress has been made as far as the mechanics of the factory are concerned since the nineteenth century. One author¹¹⁷ sums up the situation very well in saying that

116 See footnote No. 94.

117 Maury, M. F., and Fontaine, Wm. M., Op. Cit., p. 291.

after the introduction of steam power and use of coal for fuel no striking changes were made, but

..... Wells were bored deeper, the holes were bored larger, the tubing was better, the pumps and rigging simpler. The furnaces were larger, better constructed, and more effectively operated, the quality of the salt improved but still they were kettle furnaces of the original type.¹¹⁸

The development of the salt industry on the Ohio River definitely hurt the Kanawha manufacturers.¹¹⁹ The brine there was stronger and they had better means of transportation.

At present, the principal sources of the supply of domestic salt are in Michigan, New York, Kansas, Ohio and California, these states ranking in the order named. But before 1860 the supply came chiefly from New York, ranking first, from Virginia, the present West Virginia, with Kanawha County the largest and at times the only producer ranking second.¹²⁰

Thus it is evident that the Kanawha Valley has declined in the production of salt while some of the neighboring states have taken her place as a leader in the production of this commodity.

118 Ibid.

119 "The salt industry on the Ohio River, in Mason County, opened about 1854, and developed very rapidly. In time these furnaces produced more per month than the Malden salt works. Finally, competing manufacturers from the Mason County salt region 'dead-rented' all the Kanawha works, with one exception, and caused the industry on the Kanawha to stagnate. Thus practically ended the first great industry of the Kanawha Valley, which for three quarters of a century gave impetus to the growth of Charleston and community." See Hughes, Josiah, Op. Cit., p. 10.

120 Lippincott, I., Op. Cit., p. 1030.

APPENDIX A

KANAWHA SALT COMPANY

Articles of Agreement

Association and Copartnership

1817

Articles of Agreement Association and Copartnership made and entered into this thirteenth day of November in the year of our Lord one thousand eight hundred and seventeen by and between the undersigned subscribers, to wit, Danl. Ruffner, Tobias Ruffner, David Ruffner, Wm. Steele of Ky., Stephen Radcliff, Aron Stockton, John Reynolds, John Shrewsbury, Saml. Shrewsbury, John D. Shrewsbury, Joel Shrewsbury, Leonard Morris, Charles Morris, Wm. Steele & Co., Charles Brown, Andrew Donnally, Isaac Noyes, Bradford Noyes, John J. Cabell, Joseph Lovell who are owners of salt works, salt interests and appurtenances thereunto in the county of Kanawha and State of Virginia, do for the purpose of manufacturing & disposing of salt on a general & uniform plan and method, form themselves into a company under the name and state of the Kanawha Salt Company, who for the government and management of their affairs, do adopt the following articles.

Article 1st. This company shall commence and go into operation on the first day of January one thousand eight hundred and eighteen and shall cease & expire on the thirty-first day of December one thousand eight hundred and twenty-two.

2nd. On the first Mondays in January and July in each year or so soon thereafter as convenient the subscribers or a majority of them shall by ballot elect five Directors out of the Subscribers, who shall continue in office and manage the affairs of the company the following six months or

until there shall be a new election. It shall also be the duty of the directors to appoint a President out of their own Body, who with the Directors or a majority of them shall superintend and manage the affairs of the company, during the term of their service, and shall have power at any time to call a general meeting of the subscribers whenever they may think the interest of the company requires such meeting.

3rd. If at any time two thirds of the subscribers shall think it necessary to have a new election, they have power to meet and choose a new set of Directors, two thirds of the subscribers agreeing, who shall continue in office until the stated time for holding elections.

4th. It shall be the duty of the President and Directors to receive all the salt manufactured by the subscribers, or under or through them or any of them, to regulate and fix the price from time to time, and the terms on which the same shall be sold, make sale thereof, and if necessary, to transport the same to distant markets, to make and close all and any contracts relative thereto, receive the money, notes, or other proceeds of said salt, keep regular books and accounts of all transactions of the company, and make a fair dividend of the net proceeds of all sales of salt (after deducting all proper and necessary expenses & losses if any shall have occurred) among the Subscribers agreeable to their respective Interests and proportions hereafter allotted and assigned to each of them, provided, however, that no Subscriber shall at any time receive a greater

dividend than he may be entitled to for the quantity of salt which he shall actually have delivered. It shall be the duty of the President and Directors to declare dividends monthly, on such day or days as they may think Proper, if necessary and required by any of the Subscribers, and to enable the President and Directors to Discharge their duties, they are hereby authorized to employ from time to time the proper clerks, agents, etc., and form all necessary correspondence.

5th. It shall be the duty of the President and directors and they are hereby authorized from time to time to borrow as much money from Banks or other persons as may be necessary for the discharge of any Debt, contracts, or purchases, heretofore made or which may be hereafter made for the use and benefit of said company or for any other purpose deemed advisable and necessary by the President & Directors, and also to detain from the dividend of each Subscriber his necessary proportion which may be required for the discharge of all and any Debts, contracts or purchases made, or to be made for the benefit of said Company.

6th. All salt made by the Subscribers or through or under them and each of them shall be of good quality, and by them well packed and nailed in good and sufficient Barrels, and deposited in some convenient situation, under cover on the bank of Kanawha River, which Salt shall have been packed at least ten days before delivered to the proper agent of the company, whose duty it shall be to weigh the same, and mark

on the head of each Barrel the name of the manufacturer, and the gross weight of each Barrel and give a Receipt therefor to the owner, who upon returning said Receipt to the proper clerk of the company, shall be entitled to a credit for the amount thereof, on the books of the company, and it shall be the duty of each manufacturer of salt to deliver over to the proper agent of the company, once a month at least, all salt he may have on hand, and it shall also be the duty of the President and Directors to receive the same or cause it to be received if required, and no Subscriber shall be at liberty to lease or transfer his furnace or furnaces to any person or persons, during the existence of this company, without giving the President & Directors, for the time being, a sufficient guaranty that all Salt manufactured or to be manufactured at said furnaces shall be punctually delivered as specified in this Article.

7th. It shall be the duty of the President and Directors, and they are hereby required to ascertain by actual Inspection or other means the quality of all Salt manufactured, before, or at the time it shall be delivered, and also to attend to the quality and situation of the Barrels, and make the necessary deduction if necessary, from the price, as may be just and necessary, in consequence of its bad quality or deficiency in Barrels, and whereas many Salt manufacturers make use of Tallow in the manufacture of Salt, which is found by experience to injure its quality, it is therefore recommended that no tallow be used in the manufacture of Salt by

any of the Subscribers during the continuance of this company, and if it should be discovered to have been used, it shall be the duty of the President and directors to cause a sufficient and just deduction to be made in the price of such Salt.

8th. The quantity of Salt to be manufactured by all the Subscribers in the year one thousand eight hundred & eighteen shall not exceed four hundred & fifty thousand Bushels and the proportional quantity of Salt to be manufactured by each subscriber, or any person or persons manufacturing, for or under them or any of them shall not exceed the following quantities, (to wit)

Danl. Ruffner nine thousand Bushels, Joseph Lovell twenty-five thousand Bushels, Tobias Ruffner twenty thousand Bushels, David Ruffner forty thousand Bushels, Wm. Steele of Kentucky twenty thousand Bushels, Aron Stockton twenty thousand Bushels, John Reynolds twelve thousand Bushels, Stephen Radcliff ten thousand Bushels, John Shrewsbury, Saml. Shrewsbury and Jno. D. Shrewsbury thirty-two thousand Bushels, Joel Shrewsbury thirty thousand Bushels, Leonard & Charles Morris thirty-three thousand Bushels, Wm. Steele & Co. fifty-three thousand Bushels, Charles Brown sixteen thousand Bushels, Andrew Donnally forty thousand Bushels, Isaac & Bradford Noyes thirty thousand Bushels, John J. Cabell twenty thousand Bushels.

And if any of the subscribers should at any time think that the quantity of Salt assigned and allotted him to manufacture is too small, it shall be determined by the Balance of the Subscribers or a majority of them who are disinterested in the property for which the quantity is limited, and should the Subscribers or a majority of them at any time think, during the continuance of this company that the quantity of Salt described for any one Subscriber to manufacture too great or more than he is entitled to make, taking into consideration his situation and quantity of wood and water, the balance of the Subscribers or a majority of them Shall ascertain and fix the quantity which he shall manufacture, which decision shall be binding.

9th. The following Property and Salt Interests already purchased, (to wit) Saml. Slack's L. Joseph Alderson Land & Salt interest, Wm. Grant's & John Alderson's Land & Salt interest, Robt. Lewis' Alexd. Warth & Martin Warth's Land & Salt interest, Levi Patrick Lott & Salt interest and John Fields Lott and Salt interest, shall be paid for by the company and be and remain their joint Property, according to their respective proportional quantities of salt described for each to manufacture, and if the following property can at any time be purchased or leased by the President & Directors or any Subscriber hereto, at fair and reasonable price, the same shall be done, in like manner to be paid for by the company and for their benefit as before described, (to wit) Eli Jarrett's Land and Salt interest, James Jarrett's Land

and Salt interest, Jno. Wilson's Salt interest, Reuben Slaughters & Partners Land & Salt interest and Jno. Anderson's and the heirs of Silas Reynolds Decd. Land & Salt interest and any other Lands and Salt interests in the county of Kanawha aforesaid, that the President and Directors (with the advice of the Subscribers hereto) shall purchase or direct to be purchased or leased or otherwise procured, and shall, if Procured be under the control of the President and Directors for the time being.

10th. It is understood that there are several of the Subscribers to this Agreement, who have their furnaces leased for some time to come. It is therefore agreed and understood that any Subscriber so situated shall not be responsible for the delivery of more Salt than actually belongs to him or comes under his control until the expiration of such lease.

11th. The Subscribers hereto or a majority of them Shall from time to time fix and ascertain the Salaries to be allowed and given the President and Directors as a compensation for their trouble and attention in attending to the affairs of the company and the President and Directors Shall fix the Salaries of the respective clerks, agents, etc., who shall be paid by the company.

12th. As it is suggested that there is too great a quantity of Salt manufactured for the demand of the present year, the Subscribers hereto engage, to take all legal and proper means in their power to lessen the quantity to be

manufactured by themselves and others from this time until the first day of January next, And as Messrs. Steele Donnally & Steele were the purchasers of the Salt made in the County of Kanawha afd. the present year, the members of that Company, Subscribers hereto, on their part Pledge themselves that should any of the Salt of the present year remain on hand unsold after the first day of January next that they will not sell or dispose of the Same at any lower price than shall be established by the President & Directors of the Present Company.

13th. And for the True and faithful performance of all and each of the articles & provisions herein contained the Subscriber or Subscribers delinquent or not observing on his or their part, bind themselves, their heirs & assigns to the Subscriber or Subscribers Observing & performing on his or their part in the penal sum of Fifty Thousand Dollars.

In Testimony whereof they have hereunto respectively Subscribed their names, and Set their Seals the day and year first before mentioned -

Sealed & Delivered	JOHN SHREWSBURY	(SEAL)
in the presence of	ISAAC NOYES	(SEAL)
R. E. PUTNEY (SEAL)	BRADFORD NOYES	(SEAL)
	A. DONNALLY	(SEAL)
	JOHN D. SHREWSBURY	(SEAL)
	JOHN REYNOLDS	(SEAL)
	A. STOCKTON	(SEAL)
	T. RUFFNER	(SEAL)

CHARLES MORRIS	(SEAL)
DAVID RUFFNER	(SEAL)
LEONARD MORRIS	(SEAL)
DANL. RUFFNER	(SEAL)
JOSEPH LOVELL	(SEAL)
W. STEELE & CO.	(SEAL)
JOHN J. CABELL	(SEAL)
SAM SHREWSBURY	(SEAL)
STEPHEN RADCLIFF	(SEAL)

MEMORANDUM: It is agreed by the subscribers to the above agreement that the land and salt interest of John Warth heretofore purchased of him by Messrs. Steele Donnally & Steele, for the benefit of the subscribers and accidentally omitted in the 9th article of the above agreement, shall be taken and paid for by the subscribers on the terms agreed on by said Steele Donnally & Steele with said Warth & in the same manner as the other properties mentioned in the said 9th article.

In testimony whereof we have hereunto set our hands & affixed our seals on the 26th day of January in the year 1818.

	SAML. SHREWSBURY	(SEAL)	
DANL. RUFFNER	(SEAL)	JOSEPH LOVELL	(SEAL)
W. STEELE & CO.	(SEAL)	ANDREW DONNALLY	(SEAL)
A. STOCKTON	(SEAL)	JOHN D. SHREWSBURY	(SEAL)
JOHN SHREWSBURY	(SEAL)	LEONARD MORRIS	(SEAL)

JOHN REYNOLDS	(SEAL)	CHARLES MORRIS	(SEAL)
LEONARD MORRIS	(SEAL)	ISAAC NOYES	(SEAL)
R. E. PUTNEY	(SEAL)	BRADFORD NOYES	(SEAL)
		T. RUFFNER	(SEAL)
			(SEAL)
			(SEAL)

APPENDIX B

KANAWHA SALT COMPANY

1864

KANAWHA SALT COMPANY

.....

Dr. J. P. Hale
President and Office Agent

...

Gen. L. Ruffner
General Advisory Agent

...

J. D. Lewis
A. P. Fry
Consulting and Shipping Agents

...

Morrison & Oakes	H. H. Wood
A. P. Fry	F. A. Laidley
Lewis & Son	James H. Fry
Walker & Shrewsbury	L. Ruffner, Jr.
H. W. Reynolds	J. E. Thayer & Co.

Directors

.....

Cincinnati
Moore, Wilstach & Baldwin, Printers
25 West Fourth Street

CONSTITUTION
OF THE
KANAWHA SALT COMPANY

1864

Article I

We, the undersigned, manufacturers of salt, and owners and renters of salt property, hereby pledge and bind ourselves, upon the terms and conditions hereinafter named, to unite all the salt which we may make or which may come into our ownership or control from and after the first of January, 1864, as common stock; to be shipped and marked on joint account, by agents of our own selection.

Article II

The name and style of the association under which we act shall be "The Kanawha Salt Company."

Article III

This association shall continue and be in force until it is dissolved by a vote of two-thirds of the association furnaces, unless dissolved by the starting of a new furnace by a person not a member of this Company, who shall

refuse to sign and be governed by this constitution.

Article IV

No payments in advance will be made for salt in cash or otherwise, but orders may be filed at the office during the month and paid in their respective (respective) turns.

Article V

All the operations of the Company shall be conducted, as far as expedient, on a system of cash sales and cash payments, and no indebtedness or liability shall be incurred by the Company for an amount exceeding twenty-five thousand dollars without the consent of at least two-thirds in interest.

Article VI

The salt of this Company shall first be liable for all expenses and losses incident to or growing out of the legitimate operations of the Company, and the net proceeds of the salt shall be divided among the members in proportions equal to the salt made and delivered by them respectively.

Article VII

All cash, bills receivable, or other proceeds of sales or advances on salt shall be divided once each month in proportion as aforesaid.

Article VIII

The books and papers of the company, with all accounts of members, agents, and others, shall be accessible and open at all proper hours to the inspection of members, and to none others.

Article IX

Agents of the Company shall be elected annually, in the first instance by unanimous vote, in all subsequent elections, by two-thirds of all the members voting by furnaces; the voting shall be by ballot.

Article X

Any new furnace, or any furnace which may be leased under decree of court, or the leases of any furnace leased under decree of court, may be admitted into this Company and to all its privileges and benefits, by signing the constitution and other necessary papers; but any new furnace starting, and the owner or proper representative failing or refusing to sign the papers and become a member of the Company shall work a dissolution thereof -

Article XI

The death of any member shall not work a dissolution of the Company, but his interest shall be continued in the name of the legal representative of such deceased member.

Article XII

If any member should sell or lease his property during the continuance of this Company, he shall require such purchaser or lessee to sign these papers and fulfill all his duties and obligations to the Company -

Article XIII

The manufacturers, as a body, shall constitute a general Board of Management, having full control, management, and direction of all the affairs of the Company; they shall vote in proportion to the quantity of salt made and delivered by each, respectively, except as herein otherwise provided.

Article XIV

No member or agent shall have authority to bind the Company by vote or otherwise without express delegation by the Company in writing, signed by all the members, or by resolution adopted and recorded at a general meeting.

Article XV

The general board may delegate to the President, and to such other agent or agents as may be found necessary, the power to sign and endorse the name of the Company in its legitimate transactions, and such signature or endorsement, when so made, shall be binding upon each and every member of the Company.

Article XVI

There shall be a set of by-laws to help systematize, regulate, and control the operations of the Company -

Article XVII

The members of this Company, deeply impressed with and fully admitting the mutual advantages and pecuniary benefits that must accrue to them severally by that uniting of action which the stipulations and provisions of this contract of association must secure to them: in consideration whereof, and the further consideration that each member doth hereby bind himself to all the others to strictly observe and keep all the terms, stipulations, and conditions, and each of them herein contained, and especially the provisions of this section; they, the said members, do hereby severally further agree, with all the others, that the salt made by them respectively after the first day of January, 1864, and during the continuance of this association, shall be and is hereby absolutely vested in the "Kanawha Salt Company" hereby created, the moment it is granulated in the cistern or other vessel in which it is made, and from that time to be carefully and vigilantly held and kept at the risk of the Company by each manufacturer as bailee of the association; and for the considerations aforesaid each manufacturer doth hereby bind himself to the others to lift, pack in barrels, and have said salt inspected and weighed in the manner required by the association, and at his own expense, and

return inspection and weights to the association, which shall be a final evidence of quantity between the manufacturer and the association for all purposes where quantity is material.

Article XVIII

This contract and all its provisions shall be faithfully observed while in force, and it shall not be changed unless by unanimous vote. It shall be binding when signed by the proper representatives of all the active properties.

Morrison & Oakes,

by J. P. Hale.

J. P. Hale,

A. P. Fry,

Lewis & Son,

Walker & Shrewsbury,

Wm. D. Shrewsbury,

Stuart Robinson,

by H. W. Reynolds.

H. H. Wood,

F. A. Laidley,

James H. Fry,

for the Estate of James H.
Fry, Dec.

L. Ruffner,

L. Ruffner, Jr.,

J. E. Thayer & Co.

Kanawha Salines, January 21, 1864.

Kanawha Salines, January 23, 1864

At a fnll (full) meetiug (meeting) of the members of the Kanawha Salt Company on the 21st inst., it was

Resolved, That Dr. John P. Hale, President of the Kanawha Salt Company, be authorized to sign the name of said Company in its legitimate transactions, in accordance with the provisions of their constitution.

J. P. Hale, President

N. B. Coleman, Secretary

B Y - L A W S

Section 1 - The regular meetings of the Company shall be held at ten o'clock A. M., on the first and third Tuesdays of every month until changed by action of the Company.

Section 2 - Any member not in attendance within twenty minutes of the appointed time, at regular or called meetings, or who shall absent himself before adjournment, shall be fined \$5.00, unless excused for reasons satisfactory to the Company.

Section 3 - Special meetings may be called at any time by the President of the Company, at his own instance or at the written request of any three members.

Section 4 - A record of the proceedings of each meeting shall be kept by the Secretary, which, after having been read and approved by the meeting, shall be signed by the President and Secretary.

Section 5 - Proxies shall only be allowable under special action of the Board, and all proxies shall be in writing and filed at the office.

Section 6 - It shall require two-thirds of all the voters in interest to form a quorum for business at any meeting of the Company, and a majority to decide any question before them, except in questions of election, organization, or dissolution.

Section 7 - Each member shall be entitled to one vote for every thousand bushels of salt, and fractions exceeding five hundred bushels, made and delivered by him during the preceding running month.

Section 8 - Each manufacturer, until otherwise ordered by the Board, shall put up at least one-third of the salt made by him (and that of his best quality) in 280 lb barrels, and the remainder in uniform packages, when it shall be so ordered by the General Board.

Section 9 - Salt shall be put up in well seasoned barrels, with not less than ten hickory hoops of good size, and it shall lie on the yard not less than five days after packing before being weighed.

Section 10 - The Company may appoint a retailer of salt at each furnace for packers and neighborhood use, returns of all such sales to be made to the office once each month, and properly entered.

Section 11 - Annual elections for officers shall be held at the first general meeting of February of each year after 1864, those elected to enter upon their respective duties immediately thereafter. All agents shall hold office until their successors are duly elected.

Section 12 - In case of a vacancy by death, resignation, or otherwise, it shall be filled by an election at the next meeting of the Company.

Section 13 - Each and every furnace shall be required to suspend the manufacture of salt whenever, and for such time as may be deemed for the interest of the Company, and it shall be so ordered by the General Board.

Section 14 - These by-laws may be repealed, altered, or amended at any time by a unanimous vote, or upon thirty days notice of such intention to change by a two-third vote.

Section 15 - All furnaces and engines shall be blown out at day-light Sunday mornings, and fire shall not be put in the engines before dark, and in the furnaces before twelve o'clock Sunday nights.

Section 16 - The Company shall appoint a receiver of salt, fixing his powers and duties. It being the purpose of the Company to secure the best practicable quality of salt and cooperage, and uniformity therein.

Morrison & Oakes,

J. P. Hale,

Lewis & Son,

A. P. Fry,

F. A. Laidley,

James H. Fry,

for the Estate of James
H. Fry, dec.

H. H. Wood,

L. Ruffner,

L. Ruffner, Jr.,

Walker & Shrewsbury,

Stuart Robinson

by H. W. Reynolds,

J. E. Thayer & Co.,

Wm. D. Shrewsbury.

Jan. 21, 1864.

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