

REPORT
OF THE
JOINT COMMITTEE

OF THE
FOURTEENTH GENERAL ASSEMBLY

APPOINTED
TO EXAMINE THE MATERIAL USED, AND THE WORK DONE
ON THE FOUNDATION OF THE
NEW CAPITOL BUILDING.

DES MOINES:
G. W. EDWARDS, STATE PRINTER.
1872.

CONCURRENT RESOLUTIONS.

WHEREAS, It is reported extensively throughout the State, that the quality of the material used and provided for the construction of the foundation walls of the new Capitol building, and the workmanship on said foundation are inferior, and unsuitable for a building of the character contemplated by the act authorizing the construction of a new Capitol building, and

WHEREAS, It is desirable that the people of the State, and the General Assembly should be fully informed as to the character and quality of the material used, or workmanship performed in and about the construction of, or materials furnished for said foundation walls of said building; therefore

Resolved, By the Senate, the House of Representatives concurring, that a Committee of five, two on the part of the Senate, and three on the part of the House of Representatives, be appointed, whose duty it shall be to inquire into the quality of the materials used and furnished for use for the foundation walls of the new Capitol building, and to inquire into the character and quality of the work done in, on and about said foundation walls, and to report to this General Assembly as soon as practicable the result of their investigations.

Resolved, That said Committee, when appointed, and organized, be and are hereby authorized and empowered to send for persons and papers, to assist and give them information of the matters hereinbefore referred to.

Passed Senate, February 27, A. D., 1872.

Passed House, March 1, A. D., 1872.

WHEREAS, The powers given the Special Committee to examine and report, with reference to the material and workmanship of the foundation of the new Capitol building, so far only as has been laid up; therefore be it

Resolved, By the Senate, the House concurring, that the said Committee is hereby empowered to examine and report with reference to all materials provided and on the ground, or being provided for the same, with full power to examine the journal of the proceedings of the Capitol Commissioners, specifications, contracts, specimens tested, and recommended as good; also, if any material has been used, or provided for use without any test; and be it further

Resolved, That the Committee have full power to send for persons and papers.

Passed Senate, March 12, 1872.

Passed House, March 13, 1872.

SENATE CHAMBER, }
 March 1, 1872. }

The President announced Senators Dysart and Gault as the Committee on the part of the Senate to investigate the quality of the material used and provided for the foundation of the new Capitol building.

HOUSE OF REPRESENTATIVES, }
 March 1, 1872. }

The Speaker announced as Committee of Investigation on part of the House, on the Capitol question, Messrs. Leahy, Davis, and Paul.

On Friday, March 16, 1872, Mr. Paul, from sickness, was excused from the Committee, and Mr. Maxwell appointed in his place.

REPORT OF COMMITTEE.

To the Fourteenth General Assembly:

Your Committee appointed to examine and report upon the subject-matter contained in the foregoing resolutions, respectfully submit the following report:

On the 8th of March, the Committee met and organized. Senator Dysart, was selected as Chairman, and Representative Leahy, as Secretary of the Committee. After providing for the issuance of a number of subpoenas, the Committee adjourned until March 12th, when the Committee met and proceeded to take the testimony of witnesses. We summoned to appear before us, the workmen who had been engaged in the construction of the work, mechanics, and builders of experience, experts, and architects, and most of the Board of Commissioners—persons whom we regarded as likely to have in their possession, such information as the General Assembly required in relation to the foundation of the new Capitol. The examination of witnesses was continued from day to day, until the 21st of March, when it was thought that sufficient evidence had been adduced, to elucidate the matters set forth in the foregoing resolutions.

Under the authority of a concurrent resolution, the Committee employed a short-hand reporter, who reduced to writing the testimony taken, which testimony, with such correspondence, matters of record, and other statements, as the Committee deemed pertinent to the subject referred to them for investigation, are herewith submitted:

The resolutions under which the Committee has been prosecuting its inquiries directs attention to the following items:

1. The quality of the materials used, and furnished for the foundation walls of the new Capitol.

2. The character and quality of the work done in, on and about said foundation.
3. The examination of the Journal of the proceedings of the Capitol Commissioners.
4. Specifications.
5. Contracts.
6. Specimens tested, and recommended as good.
7. Whether or not, material has been used, or provided for use, without any tests.

Quality of material used and furnished.

Of the stone used in the foundation of the new Capitol there appears to be nine varieties, obtained from six different quarries.

The granite rock to be used in the coping, and of which there are 1046 feet on the ground, was obtained from Buchanan county. The strength and durability of the rock speak for themselves, and require no comment. It is evident that neither time nor seasons exercise any influence upon it. Its cost is one dollar per cubic foot.

The first stone laid in the foundation, were brought from Bear Creek, in Dallas county. This appears to be the same variety as tested specimen No. 14, an account of which is found on page 16 of the Report of Commissioners of Building Stone. This was a new quarry, and although at first it promised to yield an abundance of stone sufficient in quality and dimension, yet after furnishing 380 yards, the interior of the quarry proved comparatively worthless, by reason of seams running in all directions through the rock, and the quarry was abandoned. That portion of this variety of rock used in the wall, is said to be of excellent quality.

After the abandonment of the Bear Creek quarry, the contractors found great difficulty in procuring rock of the dimensions demanded by their contract.

On the 20th of September, 1871, the Executive Committee, by order of the Board of Commissioners, informed them that they might furnish stone from Rock Creek, in Van Buren county, the stone so furnished, to be equal in quality to the specimen presented by Peter Tobie, and marked No. 1, in the office of the Secretary of the Board of Commissioners. In this quarry were found three varieties of rock.

The upper stratum furnished a brown, ferruginous, magnesian limestone—a strong, durable stone, and excellent building material. It is represented in the Commissioners' collection of specimens, by a sample marked "No. 1, Peter Tobie." Another variety is a blue limestone, with soapstone seams—a hard, fine looking stone, but breaking and disintegrating readily under the action of frost. For building purposes, in positions where it would be exposed to the influence of rain and frost, it is utterly worthless. The third variety, obtained from the Rock Creek quarry, is a yellow, argillaceous, magnesian limestone, a large portion of which is very soft, and more like clay than stone. Some of it is full of dry seams, and breaks into irregular masses under the influence of frost. We regard the soft blocks of this stone as worthless for building purposes, and they should find no place in the foundation of the new Capitol.

The Committee gather from the testimony of the workmen and experts, that many of these stone, which would be worthless in the exposed portion of a building, would answer every purpose if placed in the wall below the frost line, which is from three to four feet below the surface of the earth.

Excepting the blue and the yellow stone from Rock Creek quarry, the witnesses are quite unanimous in the opinion that the stone put in the foundation is of good quality, and that its strength and durability are such as to make it proper material for the foundation of such a structure. All seem to be agreed also, that the blue and the yellow stone referred to, should be removed, and a better quality of stone substituted in their place. These defective stone are found scattered throughout the entire wall. Where they appear on the inside of the wall, they may be readily recognized by the bursting, exfoliation, and disintegration which they have undergone since they were laid in the wall.

Your Committee made a careful inspection of the stone in the wall, in company with Mr. Guy Wells, a distinguished builder, who is familiar with the qualities, excellencies, and defects of Iowa building stone. Mr. Wells called the attention of the Committee to ninety-three stone in the face of the wall which ought to be removed and replaced with other stone. Some of these defective stone were split by freezing, others were softened and disintegrated from the

same cause. The two footing courses were to a great extent, covered with ice and earth, so that we were unable to examine critically that portion of the wall.

The highest estimate of the cost of the work of removing these worthless stone, and replacing them with stone of good quality, is six thousand dollars. The estimates vary from \$2,500.00 to \$6,000.00.

A portion of the rock was obtained from Earlham, Madison county. The qualities of this rock is the same as that from Bear Creek. The evidence shows that it is strong and durable. This stone was not subjected to the chemical and mechanical test.

A quantity of stone was procured from a quarry near Pella. This is a grey limestone, strong and durable, and excellent building material.

The concrete stone is a grey limestone from Earlham quarry. It is said to be excellent material for the purpose for which it was used.

The cement used in forming the concrete foundation and in constructing the wall, was the best quality of Louisville cement. About 3,000 bbls. of this material have already been used in the work. It was obtained at a cost of \$1.69 per bbl., of 265 lbs., which we learn is a reasonable price for cement of that quality.

The sand used, and that now on the ground, was brought from the Des Moines river, at a cost to the State, varying from 2½ cts. to 3 cts. per bushel of 130 lbs. Workmen pronounce this sand to be of good quality.

Character and Quality of the Work Done.

The workmanship displayed in the construction of the foundation appears to be very good. The attention of the Committee was called to a few joints that are too large. It was the opinion of the witnesses that the bond of the wall was sufficient to insure the requisite degree of strength for the support of such a building.

Materials Provided, and on the Ground.

Upon this branch of the resolution your Committee find that there

is now provided for the new Capitol, and on the ground accepted by the State, two hundred and fifty barrels of Louisville cement, two hundred cubic yards of stone *now dressed*, ready to be laid, and about two hundred cubic yards, *not yet dressed*—making four hundred cubic yards on hand, about one-third of which has been so injured by the frost, that it will not be suitable for putting in the wall. Also, there are about forty thousand bushels of sand now on the ground and paid for. There is a large quantity of stone now in the yard, which was rejected before the work ceased, or shipped there and unloaded, and not yet accepted.

Journal of Proceedings of the Capitol Commissioners.

Your Committee find that the Board of Capitol Commissioners employed a Secretary of the Board, and that the books, papers, and records of the Commissioners under his supervision, are very carefully prepared and kept, and are complete as respects the proceedings of the Board,—showing a full and accurate statement of all material received, disbursements made, contracts, correspondence, and other matters necessary to a full understanding of the proceedings of the Board; and herewith submit copies of such accounts, journals, and correspondence, as your Committee deemed of interest to the General Assembly.

Contracts and Specifications.

Your committee further report that the contract with Messrs. Tuttle & Robertson, including the schedule, notice, and proposal, which constitute the terms, conditions, and specifications under which the stone were furnished, are fully set out in the report of the Capitol Commissioners, on pages 66 to 72, inclusive, and show forth the liability of the proper parties, and the kind of stone contracted for by the Commissioners, and agreed to be delivered by the contractors.

The contracts and bonds entered into by the Board with other parties for stone and other material, also the contract and bond of the architects are fully set forth and printed in the report of the Capitol Commissioners, to which reference is here made,—it being considered unnecessary to print them a second time.

Specimens Tested and Recommended as Good.

Upon this question, your Committee report that a full and carefully prepared statement has been made and printed, as a report of the Committee on Building Stone to the Board of Capitol Commissioners, to which the Assembly is respectfully referred, it being thought unnecessary to print the report a second time.

Your Committee find from the evidence herewith submitted, that chemical tests alone do not establish a proper or reliable criterion for durability of building stone; that the test of actual experience and trial in places of exposure to atmospheric action furnish, a much better test, and the only true reliable test.

Material Used and Provided for Use, without any Test.

Upon this branch of the resolution, your committee find that the stone used in the foundation have been tested only to a slight extent by the test of experience and actual observation. None of the identical stone, from the identical locality, have been tested by chemical or mechanical tests. That the cement used was Louisville cement, and has been fully tested for over twenty years, and is considered second to none. The sand has been tested since the earliest settlements in Polk county, and was taken out of the Des Moines river, and is good. The water used was from the Des Moines river, is a good average article of Iowa water, and has been in constant use since the earliest white settlements made in Iowa, and is considered good.

Recommendation of Committee on the Wall.

How much of the foundation must be taken down and renovated, is a question which none of the witnesses fully answered. The conclusions of the architect, and the experts, were based on the inspection of the surface alone. Yet the testimony clearly develops the fact, that an equal, if not a greater proportion of the bad stone, was laid in the front and interior of the walls. Inasmuch as the mortar was green, and the stone full of sap when winter set in, the whole is now a solidly frozen mass. If then, it should be ascertained that

the action of the frost has been as damaging on the hidden material, as is plainly discernible on that which is exposed to the weather, it is but fair to infer that whole sections of the walls must be wholly removed and reset. As all the calculations of the cost of reconstructing so much of the stone work, as is now acknowledged and pronounced unfit to stand, are predicated on a partial examination of the exterior, the expense will necessarily be much heavier than estimated.

Your Committee therefore recommend that the persons, to whom may be committed the continuance of the work, be required to cause a thorough investigation to be made into each and every part of the wall, by competent and disinterested persons, and to direct that all the worthless material be taken out and rejected, regardless of the consequent loss to the State, or to the parties who may be found responsible for its introduction in the foundation.

Respectfully submitted,

JOSEPH DYSART,
EDWARD J. GAULT,

On part of the Senate.

M. A. LEAHY,
FRANK M. DAVIS,
WM. MAXWELL,

On part of the House of Representatives.

TESTIMONY.

COMMISSIONERS.

SAMUEL MERRILL, *being called and sworn, testified as follows:*

Residence, Des Moines; engaged in banking. Was connected with the Board of Capitol Commissioners as *ex officio* President of the Board. Observed the work on the foundation of the State House as it progressed, as much as I had time. Took a deep interest in the work, but had no official duties except as a member of the Board. The Board devoted the first year after the appropriation for the new Capitol, in advertising, and getting posted as to where the best material for building could be found. As the law required them to obtain said material in the State, it became a question of no small magnitude, as well as a most perplexing one. After various experiments and much tribulation, they made a contract with Messrs. Tuttle & Robertson, for a large quantity of valuable rock from a quarry some thirty miles west, called the "Bear Creek quarry." This quarry bid fair, from all we could see, to give us all the sizes, quantity and quality we might need at \$10.25 per cubic yard, and \$5.75 for block rubble. But as the quarry became developed, it was apparent that we could not depend upon this quarry for sizes, and hence we sent out a committee, with Messrs. Tuttle & Robertson, to visit various stone quarries, both in and out of the State.

Finally, the Board consented to accept stone from the Rock Creek quarry. [See Appendix G.] As the season was far spent ere this quarry was developed, and the great pressure for rock to keep our force at work, is the reason why some rock were put in there not so good as they ought to be. I believe the foundation walls, with the exception of those rock effected by the frost, because they were just quarried and green, is as good a foundation as I ever saw. I

had occasion to visit the foundation of the New York State House, now being built, and also the Illinois foundation to her State House, and I think our walls far better, in many respects, than the New York, and about equal to the Illinois.

I cannot doubt that by the removal of those frost-bursted rock, and by using the granite coping, the foundation walls will remain perfect for centuries. Indeed, I may state, that while I was disappointed in the cracking of those rock, still I think the State may congratulate itself on so small a loss with so large an expenditure.

The Board have been actuated by a desire to secure the best material and labor for the least expenditure. In this I believe they have been successful. The great body of work and material, in all their classifications have been of good character, and at reasonably low figures.

Q. What do you think of the stone from Rock Creek?

A. Some of them look well, but some of them appeared to me too soft. The universal testimony, as far as I ever heard, was in their favor. I don't believe any man can tell much about the weathering qualities of a rock, until it has had time to season, and time to be tested by cold and heat.

Q. Why was it that the Board did not stop these rock from going into the wall?

A. I do not think any of the members of the Board knew it was a bad quality. Some car loads were turned back, and they were unloaded on the flat below. The Local Superintendent had immediate charge of receiving and accepting stone, I should think. I do not hesitate to give as my opinion, that it is a good foundation, with the exception of the rock which have proven bad. I would say, all rock which have been affected by the frost should be taken out. My judgment is, the frost has done it all. I do not wish to give it as my opinion that all the rock were proper, which were put in the wall.

Q. State if you think any went in there which should not?

A. I was not quite satisfied with some of the rock. They seemed to be too soft.

Q. Do you think any members of the Board expressed any such opinion?

A. At times they did. At one time, the Executive Committee and myself went over the ground and examined the stone. We talked a good deal among ourselves, and with the Superintendent. Marked some rock to be rejected and sent back.

There was difference with the Board as to the competency of Mr. Appleyard, the Superintendent. The majority of the Board employed him. My opinion is, he is first-class. I voted for him every time, and I suppose I should again if I had opportunity.

Q. Do you know of any of the Commissioners who have been interested in the contracts ?

A. I do not.

Q. Have you seen the rock on the ground ?

A. I have examined some of the stone, which are lying around here from the Rock Creek quarry. There may be the same kind of rock in that foundation. They were delivering here very rapidly, during the last of the labor, and the Rock Creek stone were green, I suppose. The sand, lime, etc., I believe to be all very good.

Q. Why did the Commissioners reconsider the vote to accept Mr. Scott's bid ? [See Appendix B. C.]

A. Upon investigation they became satisfied, the rock were not what they had been represented to be.

Q. Do you mean to say that you lost confidence in the tests made by Prof. Hinrichs ?

A. In a measure ; I have great confidence in him as a chemist. I visited the Orford quarry. Three or four of the Board were there at one time, and while we regarded the quarry of great value to the county and State, we believed there was such an intermixture of poor and unsound rock, that it would not be safe to commence the foundation for the Capitol from that quarry. The Rock Creek quarry was opened nearly as much as the Orford quarry. The Orford quarry was very little developed. I consider the workmanship first-class. I visited the new State House at Albany, New York, and also at Springfield. The New York foundation I visited three times ; I stood upon the wall several hours ; the wall is some thicker than ours, but in my judgment not so well built ; the stone were not so well placed in the middle or centre of the wall. I think our Board

endeavored in every instance to get the best material for the least money.

JAMES DAWSON *being called and sworn, testified as follows :*

My name is James Dawson ; age 63 years ; occupation, banking, and formerly stone mason and stone cutter ; have been acting as one of the Commissioners since April 30, 1870 ; am familiar with the different stone used in the wall in the foundation of the new Capitol. First, that from Bear creek is a limestone. The next stone came from the Earham quarry, which stone was similar to the Winterset stone ; not a great deal received from that quarry. Then from Rock Creek, in Van Buren county, was the next stone used in the foundation ; also some stone were bought by the Executive Committee from the Pella quarry. That includes the variety of stone used in the foundation, except the granite, and that from Farmington Locks. Something over five hundred yards were from Bear Creek, I think.

Q. Was any of that rock received which you regard as unfit to be put in such a wall ?

A. Yes. Not much from Earham—but one or two blocks. I objected to some of the Bear Creek stone. They were deficient in dimension—and on account of seams. When taken apart would answer very well for filling. There were stone very seamy, and unfit to go into the wall. None were put in that would injure the wall. Can tell the stone, and from what quarry they came.

Q. How did the weather affect the Bear Creek rock ?

A. After the first severe freezing, I examined the stone carefully, and found no effect of frost on Bear Creek stone. Some were rejected by the Superintendent. We had the privilege of rejecting stone after unloading. There are a few rejected of the Bear Creek, but not many. Some were thrown out and received as rubble. We received some very good stone from the Rock Creek quarry, and a good many were not fit to go into the wall at all. The stone which were not fit to go in, were a clay colored stone. The worst of them have dry seams, and would break out in little chunks. A good many were in that condition, which were rejected and not put in the building, and some poor blocks of this kind are in the work.

Q. How did it happen that these blocks went into the work ?

A. There was a difference of opinion about the quality of stone in that quarry, between some of the Board and the Superintendent. I do not think the Superintendent was a good judge of Western stone. He was a good mechanic. It was in part his lack of judgment, and in part a difference of opinion expressed by the Board. I know that some of these poor, yellow stone have been placed in the wall.

Q. Did you know they were going into the wall at the time ?

A. None of the worst of them. I have, in one or two instances, where the stone was laid, gone to the Superintendent and requested him to take them out. He did so. And I have repeatedly written him letters charging him to be very strict in the selection of stone. I condemned some of the stone on sight. Some were good.

Q. Why did not Mr. Appleyard understand the properties of that stone ?

A. There was a difference of opinion as to the quality of the stone, with men generally. One man would condemn a stone, and another man would say it was a very good stone. I think so far as Mr. Appleyard was concerned, it was a fault of his judgment. Think he was disposed to do right.

The poorest stone put in the foundation was the last work that was done. The poorest part of the wall was laid in November. The quality of this stone was discussed by the Board, at different times.

Q. What led to the first resolution ?

A. That was entirely on the Bear Creek stone. They were sending stone here which were full of clay seams, and when the Board found them in this condition, they all agreed to the resolution passed there. [Witness refers to resolution, page 112 of the record. See Appendix H.]

Q. What led to that second resolution ?

A. Part of the Board visited the Bear Creek quarry, and were satisfied they could not get the stone there, and this resolution [Page 108 of the Record, passed August 16th, 1871. See Appendix G.] took rise from stone which had been coming for a week or two. It

was directed by the Board, by resolution so passed, that we would receive stone from Tuttle & Robertson from Rock Creek quarry. When this resolution was passed, I do not know that more than one or two had seen the quarry, but a sample was exhibited.

Q. State whether the stone were delivered according to that sample ?

A. Some were as good, some were inferior, and some were better.

Q. What means had the Board of knowing the quality of these stone previous to the passage of that resolution ?

A. That quarry had never been opened or developed. The first layer of stone showed every evidence of standing the weather—where the out-crop had been exposed probably, for ages.

Q. Then you judge of the weathering properties of a stone from the evidence you had there ?

A. Yes; where the stone was exposed. My opinion there was, that in the second layer they would get some stone which were not good.

I made the report on page 116 of the Record. [See Appendix K.] To my knowledge there is no resolution or other record, as to the quality of the Rock Creek stone, except the report on page 116. There was a good deal of talk about it, but this is the only thing on record in regard to it. I think the Lock stone was defective, both in quality and dimensions. As regards the quality, some gave evidence of disintegration and decomposition; some would scale off; some had seams the whole length of the stone, and were not within the dimensions. Of course there was a difference of opinion on that question.

We set out to make a dimension wall, and I was anxious it should be done, but we did not strictly carry it out, according to my idea of dimension work. My opinion is of these Lock stone, as a whole they were deficient in dimension, and that nearly half were deficient in quality. Mr. Dudley and I were appointed a committee to examine the Lock stone, and accept or reject, which we did. He reported in favor; I reported against, which report is on record, page 118, of Record. Mr. Scott was the owner of the Lock stone. Some one made a motion that Mr. Scott be called in, and

have him make a statement. He made his statement. The Board concluded they wanted stone very much, and must have work enough done to have the corner-stone laid; and that we must have that Lock stone, which I do not think was suitable to go into the building. The Board, however, agreed to take the stone. [See Record.]

I think there were no other poor stone, beside the Lock stone, and the soft, yellow stone. I think there were some blocks of poor stone, which went into the wall. I think the Earlham quarry and the Tuttle & Robertson quarry were subjected to the chemical test.

Q. To what extent were the Commissioners governed by the tests?

A. Some were of the opinion that they did not amount to anything.

Q. Why did you abandon the tested stone?

A. We differed in opinion about it. The judgment of a good practical man, and the natural tests, I would sooner rely upon, than to rely on the judgment of a chemist alone. The Board took no action at all on that report on the Rock Creek stone, except to receive it, and place it on file. The contractors were notified the classification was rescinded, the next day. The first shipment after that were nearly all rejected. Cochrane & Piquenard have served no notice, that Mr. Appleyard was not obeying their instructions about receiving rock.

Q. Did the Commissioners or Executive Committee ever take any action, or make any complaint in regard to the conduct of Mr. Appleyard, for putting this inferior material in the foundation?

A. There was no action—only the resolution passed. [See Appendix, H.] I talked with Mr. Cochrane, and told him he must see to it that the stone were strictly and carefully selected. Spoke to Mr. Appleyard at different times about stone which were not good, that were going into the wall. He replied, the men who laid it had not obeyed his orders. I preferred to do everything through him. I at one time called on Mr. Dudley to go with me to Appleyard, and speak to him about these poor rock going into

the wall. Said Mr. Dudley: "I will take no responsibility in the matter."

Mr. Dewey had charge of the chemical tests. He furnished the chemists the samples. He employed a stone cutter here, to cut out the sample dimensions of the several stones which were submitted to the tests. I cannot remember the day the samples were submitted to the chemist—I think in the fall of 1870. Think we did not receive his report until January 12th. The chemist made his report to Mr. Dewey. I only saw a part of the report when it first came.

Q. What have you been paid? Also state the price of labor and material.

A. I think in two years as member of the Board, and as chairman of the Executive Committee, my per diem amounted to about seven hundred dollars a year.

Every thing in the way of material, machinery, and tools was purchased with great care, and money carefully applied, and no money misapplied to my knowledge.

I think labor was commenced at one dollar and a half per day. We soon commenced to pay some men one dollar and seventy-five cents per day, for mixing concrete. Men acting as foremen of these gangs got about two dollars per day. There began to be more demand for work, and we raised all the men's wages. I think the men worked as well as any I know of. The cement cost \$1.69 per barrel. It was less than it could have been bought for soon afterward. I considered it good. The man made very little, if anything, on the contract. The sand was delivered for three cents a bushel for the highest, and two and three-fourths cents for that received last. A bushel was one hundred and thirty pounds. The water cost five cents per barrel. The entire cost for water was \$277 and some cents. I cannot give the amount for drainage and sewerage.

Q. Why did the Board abandon the tested rock?

A. The Board did not abandon all the tested rock. They allowed the contractors to go to the Rock Creek quarry for stone. All the first-class tested stone was not accessible by railroad. Perhaps a majority of the Board were of the opinion that they were not to

be confined to a chemical test. I would take the experience of a practical builder, and natural tests, in preference to a chemical test.

There never was any person appointed by the Board but the Superintendent to receive stone. All stone was received by Mr. Appleyard, except what Winkley received when Mr. Appleyard was away. In the contract between the Board and architect, it was made the duty of the architect to decide upon that material. It was generally known among the Commissioners that the yellow, soft rock was very poor. I thought so, and Mr. Appleyard agreed with me. There was soft stone laid in the wall, which I insisted should be taken out, and Mr. Appleyard ordered the men not to put it in. Most of the soft rock now in the foundation, is in the west wall of the north wing, and in the south front. They were put in the last week the work was carried on. I was not here that week; do not know whether the rest of the Board were here or not.

Q. Were the Executive Committee at any time ordered to examine charges against Mr. Appleyard?

A. Some time last fall, the Board submitted certain charges to the Executive Committee, which were preferred against the Superintendent by Mr. Winkley, a discharged employee. Mr. Winkley gave a number of names to the Board, referring to them for testimony, to prove the charges. The Executive Committee were all here—Stein, Dudley, and myself. As chairman of the Executive Committee, I asked Mr. Winkley for the list of names whom he wanted to prove this matter by. I told Dudley and Stein we would go and see these men, and investigate the matter privately. Mr. Dudley wanted to have the matter conducted in the form of a court, and refused to go with us. Mr. Stein and I preferred to go to the men, and inquire into the matter. We went to about a dozen of the leading men—men who were foremen of the mason work, and men who had charge of the gangs—all the men he had furnished the names of, to prove his charges by. They all laughed at the idea, and said that Mr. Appleyard had never acted in that way, and that the charges were entirely false. Mr. Stein and I made this investigation, Mr. Dudley refusing to go with us. He served notice on Mr. Appleyard that he would call witnesses.

He did not call any but Mr. Winkley. We investigated the matter as far as we thought necessary. We found the charges without foundation, and reported accordingly. About the 22d of July, Mr. Winkley was left in charge of receiving the stone, and acting as foreman. I came by, after Mr. Appleyard had left, and found Mr. Winkley receiving stone entirely contrary to the orders of the Superintendent and architect. They were full of seams, and not fit to go into the work. Some of the stone were broke on being lifted by the derrick—split in pieces; one was split in two; he had placed it together again, and piled it up as a good stone. He said he could work it into the wall. I ordered him to take it out of the stone pile. After Mr. Appleyard returned, Mr. Winkley was discharged for incompetency. From what I saw of his work, I was satisfied he was entirely incompetent to fill the position, either as foreman of stone-cutters or stone-masons.

CHARLES DUDLEY, *being called and sworn, testified as follows:*

My name is C. Dudley; age, 58 years; occupation recently farmer; reside in Wapello county; am one of the Commissioners of the new Capitol.

Q. Are you familiar with the quality of the stone used in that foundation?

A. I saw most all of it. Think there are four different kinds of rock used. First is the Bear Creek quarry, a limestone. When that failed we got some from the Earlham quarry; that is a magnesian limestone. The Bear Creek stone has never been tested. The other was from Rock Creek, Van Buren county. The other from Farmington Locks. There are really six different kinds, including the granite. Part of the Rock Creek quarry I regard as good, and part not good. The first ledge is very hard and very durable. The next below that was one that should not have been used. It varies in color from a light yellow, to a bluish cast. Some have tried them. They may be safe, but I think not. There is another ledge below that—the third ledge—it might have been the fourth. I should think that below the second ledge, with care in selecting, the sap being dried out, would be reliable. The class of yellow, and hard stone which comes from Rock Creek quarry was

from a different place. Mr. Tobie worked in one part, and Messrs Tuttle & Robertson, in another. The stone seemed to be perfectly reliable. I regard the Bear Creek and Earlham stone as reliable. They commenced sending from Earlham a limestone. Think it came from above or below the magnesian. Did not regard it as reliable. Think it was not safe; understood the Superintendent objected to it.

I was around when the wall was being built, about one-third of the time. It was the duty of the Local Superintendent to accept or reject this stone. The Superintendent inspected them. Saw some rock go into that wall which I thought were insufficient; objected to some of them; thought they would do to go in the back of the wall. The Superintendent was not disposed to hear any of my suggestions. He was employed by the Board of Commissioners. Think he did not receive his instruction from the Commissioners. Suppose the Local Superintendent is responsible for this stone being put in the wall. We make the architects responsible to us, in their contract.

Q. How did it come that you appointed him?

A. It was in the agreement that we should appoint him.

Whenever the Local Superintendent did not carry out the orders of the Superintendent, he should report to the Board immediately, and they would discharge him; and if any such report came from the Superintendent, and the Board did not discharge him, the Board became responsible for it. The architects were under fifty thousand dollar bonds. They were not to superintend the receipt of the material as it came on the ground; the Local Superintendent was to do that. One or both of Cochrane & Piquenard were here as often as once a month. Think we make them responsible for the acceptance of any materials; we make them responsible to us if the Local Superintendent fails to carry out any of their instructions.

Q. Did you call the attention of the Board to the fact that they were putting in poor material?

A. I named it to each individual of the Board, but they thought the Superintendent's opinion was worth more than mine. Do not think there was a full Board from the time the Superintendent was elected until he was discharged.

Think the yellow rock was first put in about the first of September; think in the north-west corner. Cochrane & Piquenard were on the work after September. I think I called their attention to the rock going into the wall, but am not sure—think to Mr. Piquenard. Named some which were being accepted that I thought were not good. Do not think he made a definite reply. Do not think it was the practice to put the poorest stone in the back of the wall; for he regarded them as reliable. At first, I think he used the Lock stone for the back of the wall.

Mr. Dawson, Stein, and myself were appointed Executive Committee. Mr. Dawson knows more about the work than either of us.

I regard the wall as very well laid, with the exception of a few heavy joints.

Do not know much about the mortar. My opinion is, there was a little too much sand in some of it.

Tuttle & Robertson furnished the rock from Rock Creek, Bear Creek, and Earlham. The Board furnished the mortar. Think there was a difference in judgment in regard to this mortar.

Q. Did the architects reserve any right to compel the Commissioners to notify them immediately of any departure from the right course?

A. I think not.

I have not any experience with these yellow stone. Regard some as sufficient, and very many insufficient. Can readily point out those I regard insufficient. The Board, as a Board, never agreed that anything insufficient should go into the wall. Cochrane & Piquenard were furnished with a copy of the contract with Tuttle & Robertson. Mr. Appleyard went to Rock Creek before they opened that quarry.

The matter of the quality of this stone was never brought before the Board at a regular session. Some members objected to it, but I don't recollect any resolution being drawn up, or presented in shape for action. Do not know why such a resolution was never introduced. Know the Board did not agree on these questions, sometimes; for my part, I did not present notice to the Board, as there seemed to be a disposition to reject what I presented. Usually

at the meetings there were Messrs. Dawson, Stein, Crosby, and myself, and part of the time were all that were here. Think once Mr. Dewey was here. When the five only were here, Mr. Crosby and myself were in the minority. I called the attention of the Local Superintendent to the quality of these stone. He claimed that the class of yellow stone were the best they were receiving, and that he was competent to receive them himself.

I think there were thirty-four different qualities of rock tested. Think none of them are in the wall, except the granite. There was a rock tested, from the Pella quarry, but it is not that which we have in the wall.

Q. Did you consider the test insufficient, that you did not use rock tested, or could you not obtain them?

A. I did not consider the test reliable. A class as low as No. 5, to my certain knowledge, has stood the weather for thirty years.

Q. Did the Board take any action in that matter?

A. I think they did, in the preamble to the first contract. They say: "Whereas, certain stone is cheapest, and proven to be reliable by the test, etc."

That was the Orford quarry. By an examination of that quarry by a majority of the Board, the quarry was thought to be irregular and hard to work.

We first worked on these chemical tests, and regarded them reliable, but afterward did not rely upon them.

Q. Why was this specification in the contract with Tuttle & Robertson not adhered to, to-wit:

"Said stone to be of good quality, fully equal in every respect to the specimen accompanying this proposal; each piece to be free from dry seams, or any weak parts, either in the vertical, horizontal or angular direction, and to be free from all sap, slaty, or perishable material on the exterior or interior of the stone?"

A. First we accepted some from the Bear Creek quarry, a few of which were seamy, thinking we could use them, (a little less than the dimensions.) Think as late as July—perhaps as late as August—we confined them strictly to their contract. [See Appendix F. A. A.]

There were no workmen who complained of the rock going into the wall. Mr. Winkley complained after he was dismissed, and asked an investigation. The Board appointed the Executive Committee to investigate that. The members of the Executive Committee refused to take any action, but said they would go among the men and make inquiry, which I think they did. I was not satisfied with that way of investigating, and proposed to take the sworn evidence of the men. I took the sworn evidence of Mr. Winkley, and submitted it as a minority report, to the Board, and the Board refused to do anything with it. The reason they did not act on it was, the Executive Committee thought there was no foundation for the charges.

Q. What kind of stone did they refer to, in this contract, by the term, "the specimen accompanying this proposal?"

A. The stone numbered "3," from Bear Creek.

By resolution, they gave them permission to go to Rock Creek for stone, to be equal to sample furnished by Mr. Tobie, "No. 1." [See Appendix G.]

Q. Were the stone afterward furnished, according to the sample?

A. Some considered them so; I think not.

We paid common laborers one dollar and a half a day; stone cutters three dollars per day, with the understanding that we would make different arrangements with regard to the price. We paid the foreman, for the first four weeks, two dollars and a half per day. He had oversight of the hands; that not being enough, we paid him three dollars per day. The cement cost \$1.69 per barrel. There was one hundred and thirty pounds in a bushel of sand. It takes about sixteen bushels to make a ton. We paid three cents a bushel. We got the last for 2 $\frac{3}{4}$ cents. We paid for water five cents per barrel, of thirty-three gallons. They would haul about ten barrels, which would make about fifty cents per load of water. I think there is about two hundred and fifty barrels of Louisville cement now on hand. I presume we have used three thousand barrels of cement. I do not know how many cubic yards of rubble there are in the concrete. I think Messrs. Dawson, Joy, Crosby, Stein, and the Governor, went to Columbus,

Wis., and Albany, New York. I think the Commissioners were paid five dollars per day and traveling expenses. Messrs. Cochran & Piquenard recommended Mr. Appleyard. Before he was employed, the Board had a meeting, and the question came before us; we voted two days, Mr. Appleyard receiving four votes, to four against him. At the next meeting of the Board, but six were present. Four were in favor of Mr. Appleyard, and he was elected. [See Appendix L.] The chemical tests were returned to Mr. Dewey, I suppose, as he submitted them to the Board.

J. N. DEWEY, being called and sworn, testified as follows:

My name is J. N. Dewey; age, 53 years. Formerly followed the profession of civil engineer. At this time am one of the Commissioners of the new Capitol. Think I have some knowledge of the stone delivered for the foundation. Could not say how many kinds. There was the Bear Creek quarry; one near Earlham; the Pella quarry; one near Summit Station, on the Valley Road, called the Rock Creek quarry; some from the Farmington Locks; some from Buchanan county. I noticed some defects in the stone delivered here. The Bear Creek quarry was seamy,—more or less—dry-seams. These seams run generally, horizontally; sometimes vertically.

Q. Was anything done to inform the contractor of these defective stone, that you know of?

A. Do not know that anything officially was done. I think they regarded them as better than anything else.

Q. Did you yourself have anything to say about that stone?

A. My recollection is, that I did, to Mr. Robertson. I would say I did not feel myself called upon to go to the contractor in this matter; I considered it properly the business of the Executive Committee, of which I was not a member. What communications I had to make, I made to the Board, or some member of the Board, or the Superintendent.

Q. What objection have you to the Rock Creek stone?

A. I must say I never had a very favorable opinion of them. In the examination, which I was called upon to make in relation to the different stone in this State, a similar stone, reported to come

from this quarry was submitted to a mechanical and chemical test, and it did not stand very high. In these examinations, generally the poorest stone were condemned; that is my judgment. Regard the stone from Earlham, as a very good stone. The stone from Farmington Locks I believe to be the best stone in the foundation. The stone from Bear Creek, and from near Earlham, were delivered, I understand, under a contract with Tuttle & Robertson; also, the stone from Rock Creek. The stone from Farmington Locks, were delivered under a contract with Colonel Scott; those from Pella, under a contract with certain parties from Pella. I think the foundation was started in a good, substantial manner. The excavation was carried to a sufficient depth; did not often notice the construction of the wall; was not on the work frequently; called the attention of Mr. Appleyard, Local Superintendent, once or twice to imperfect joints; he differed with me in the matter of opinion, I did not think there was sufficient bearing, some stone not well bedded, the joints were not broken; think there was too much mortar, and too little stone in some places; the joints were not sufficiently close, the effect of which would be, the walls would be liable to crack as the building went up. In laying the wall all headers, or all stretchers would not do; if all headers, the wall would not be well bound, and might separate at the opening. Mr. Appleyard used both headers and stretchers on the work.

I saw some of these yellow stone from Rock Creek; think some of them were worthless; thought so at the time of delivery, and said so. Have not visited the wall since last November.

Q. Why was it that all these stone, which stood these tests were rejected?

A. You will have to ask some other member of the Board. Cannot answer the question.

I consider these tests reliable to a certain extent, as to the character and quality of the stone. I found them generally confirmed by the local reputation which they represent. When these tests represented the stones were good, and my experience confirmed it, I should consider them good.

The architect was to describe the dimensions to be furnished.

J. G. STEIN, *being called and sworn, testified as follows :*

My name is S. G. Stein ; age, 55 ; occupation, lumbering and banker. Reside at Muscatine. Am one of the Commissioners for building the new Capitol. Was appointed to that position in March, 1870. Became a member of the Executive Committee, March 30, 1871. Was present on the grounds only at stated meetings of the Commissioners. The Board elected a Local Superintendent outside the State, because they considered him the most competent they could find. The Board elected Mr. Appleyard because they were led to believe him competent, both from the recommendation of the architects, and other evidence. The election of Mr. Appleyard was entirely satisfactory to the architects. Was present at the meeting on the 21st of September, when Mr. Dawson made a report as to the quality of stone delivered for the foundation of the new Capitol. There was some difference of opinion as to the quality of the stone. The superintendent might not have understood the difference of the quality of the stone, not being accustomed to Iowa stone. Had a conversation in October, with Mr. Appleyard, as to the quality of the stone, and he rather favored the yellow stone. He said he thought either the blue or yellow stone were fit to put in the wall. I had not sufficient knowledge of that kind of stone, to judge of its quality, nor to say which of those two kinds were best. I had reason to believe Mr. Appleyard intended to put only good stone in the wall, and that if he made any mistake, it was the fault of judgment as to the quality of the stone. At the request of Mr. Dawson, I wrote to Mr. Appleyard not to use any stone which were not strictly according to the contract.

Q. Why did you set aside the award for Orford stone ?

A. One reason for abandoning that contract was a number of affidavits, setting forth that these stone were not good. Another was, we went and examined, and we concluded it was not reliable. The quarry the stone was said to come from, had not been sufficiently opened to see it. Another quarry, a half mile from there, was opened, in which was some good stone, and some not good. Sometimes, in the same block, some were good and some bad.

CONTRACTORS.

COL. O. H. P. SCOTT, *being called and sworn, testified as follows :*

My name is O. H. P. Scott ; age, 57 years ; occupation, contractor ; reside in Van Buren county, Iowa ; was connected with foundation of the new Capitol building ; am familiar with the different classes of stone used in the building ; there are some five or six classes, I think—one class from the Bear Creek quarry ; Earham, in Madison county ; Rock Creek, in Van Buren county ; and Farmington. The quarry from which this [Farmington] stone came, was Potter's Creek. The Rock Creek quarry is near the summit above Bentonsport, and the stone from Pella, Marion county, I believe is all, but the granite from Buchanan county. I have been working with them most of the time for twenty years—am acquainted with them all. There is some, in my opinion, from Rock Creek, in the Capitol foundation, unfit to go in there. There is a few from Bear Creek quarry that are not fit to go in that wall. There are a few good stone from the Rock Creek quarry, but, I think, as a rule, they are not fit for that work. Some are unsafe for that wall. My objection, is that will not stand the action of the frost. I know this from practical experience. I worked with these stones in 1855-6-7.

Q. What effect does the elements have on the stone ?

A. Some chip and crack in various directions ; others fall down into rubbish, and separate entirely.

Q. Are these rock of which you speak obtained from the same quarry ?

A. Yes, they are the same class of stone. A little different—some have not been affected by the frost as much as the green stone. I think a little better class than these could have been obtained about half a mile distant. There seems to be more iron in the composition. The poorest of the rock was whitish yellow—more porous than any of the others. Has a light shade, and by the color, I should think a better stone. Another class—a good stone, has more iron in its composition. All came from the same

quarry. There was a different species of the same ledge. I was not present when any of these stones were quarried. Went to the quarry at the solicitation of Tuttle & Robertson to give them my opinion of the stone. I gave the same opinion I give you now. They differed with me then, as they do now.

Q. Were there any other rock you thought were of inferior quality for such a work?

A. They have tried to make thin stone fill thick courses. They will answer very well, but I think we have better stone. Have had some experience in foundations—more particularly in locks.

In the main, I think the work is very well done. There are some defects about it; some joints larger than I would have them. The cement is good—is all right. I noticed some joints there that were perhaps an inch; did not notice any two-inch joints; if they are there they are too heavy. Should want my joints to be about one-half inch, and no larger—only in some cases. If they were much exposed to the weather, should not want them much larger; but if the cement and sand are good, one-half, three-fourths, or one inch would not be objectionable for that foundation; because I believe the cement of this material will last.

Q. Do you think it will be necessary to take down any of the wall?

A. Yes; I have been looking at it. Think somewhere from one-third to one-half will have to come down from their places, to get the imperfect stone out. There may be bad stone away down, and in order to get at them it may be necessary to take down most of the stone around them.

I did not examine the mortar; it was not a good time to examine mortar.

Q. Will it be injured by the action of the weather?

A. Yes; it is likely to disintegrate; that is why none are placed in the position where they will be exposed to the action of the weather.

Q. Is it not true that rock on the outside must absorb more or less dampness?

A. I think it could not be seriously affected; they will remain about as they were in the quarry.

Q. You state that you think from one-third to one-half will have to be removed. Do you think it will be necessary to take all these stone out which you speak of?

A. Where they are not already checked, or nicked—that is, those below the frost-line, in the work—I would not take them out. Those which are scaling, and cracked, I would remove. Below where they are subject to action of the frost, they absorb moisture; but I would not advise you to take them out. I was acquainted with the rock before they came here. I think it will retain its resistance if not exposed to the atmosphere. I would recommend that all the soft stone be taken out. I was acquainted with the Rock Creek rock at the time Tuttle & Robertson went to examine it. Told them the yellow stone were not fit for this purpose. Have seen the stone they have been shipping, on the yard; some with seams through them; some of the clay seams; some flinty. These rock came from the bottom part of that quarry. They are defective. There is one stratum in that quarry about three feet thick. When they first commenced stripping off, we found what they thought to be a good class of stone. They soon came to what I call a magnesian limestone. That stone is not much used.

Q. You said the people did not use that particular kind of rock. Did they have any chance to get it?

A. There was lots of rock—from fifteen to twenty feet—that was exposed, which had never been worked. I know the Des Moines Valley Railroad would not use these rock to build culverts; I think the actual cost of getting stone out of that quarry is worth \$10.25 per yard. The royalty in a quarry like this, is worth twenty-five cents; I do not know what they paid—think twenty-five cents, the same as if it were good. I got \$13.50 for the stone which I delivered, but they were better stone; they were from Potter's creek near Bonaparte.

I leased the Oxford quarry; my bid for rock rubble was \$9.00 per yard; for stone from 8 to 14 inches, \$17.55 per yard; 14 to 18 inches, \$19.95; from 16 to 24 inches, \$21.45. When they came to consult the bids, there was a discrimination as to classification. Mr. Dawson and Mr. Cochrane, the architect, came to me and

said if I would make the two classes into one—the 14 by 18, and the 16 by 24, and make the price \$19.25, they would give me the work. I told Mr. Dawson I would take until night to think about the matter. Told him to come to my room, 41, at the Savery House before he went into the evening session and I would give him an answer. I went to my room and waited until after the time for the evening session. He did not call at my room. I went up to the room, and they were just coming in, but had not been called to order. I called Mr. Dawson to the door, and told him I would accede to that proposition. He said very well, and I heard no more about it till I was informed the award had been made to me. In about two hours after that—about ten o'clock, I think—I went up to the room; some were still there. I told the members who were there, that I would accept, and was ready to execute the contract. I did not see the Governor that day. The next day I called on him, and said I was ready to execute the contract. He wished to have me draw the contract. I had the contract drawn up, and submitted it to my attorney. It was all right. It was approved by me, and presented to the Governor for his signature, and he declined to sign it. I asked him when he would be ready to sign it. He remarked to me to “let the matter float along two or three weeks, that there had been some stories about the stone.” I consented to let it “float it along two or three weeks.” I went to him again; he then utterly refused to execute the contract, at all.

Q. Did he give any reason, only that stories had been raised against the stone?

A. I claimed I had furnished samples and bids, and was ready to secure the State against any loss. I went and made a formal demand for the execution of the contract, and he utterly refused to execute it.

The Orford quarry I believe is the best stone for the purpose that we have in the State of Iowa. There was no one interested with me in my bid, except the men who were on my bend. Not in the least were any of the Commissioners connected with me in the contract. There were charges made, but there was not a bit of truth in them.

One of the reasons given for refusing to execute the contract was, that Col. Dewey was the man who was in the ring. The charges were utterly false, and without foundation.

The Governor asked me if there was any truth in them. I told him, no.

There was no affidavit, to my knowledge, that was derogatory to the Orford stone, but what were made by parties directly or indirectly interested in some rival quarry.

When the Governor refused to execute the contract, I set about to get an injunction from the courts, by mandamus. I sued out an injunction. There was a good deal of sensation about it here. There was a meeting of the Board called in Chicago. I was informed they were going to take some action on it there. I prepared my injunction, and had a writ ready to be served upon the Board on their return here; and so the matter rested for some little time. They became very much alarmed about the Capitol building, and I was persuaded to withdraw my injunction. The matter was stopped. I was not right, and did the State great injustice by withdrawing my injunction. I withdrew the injunction of my own motion. They never gave me any other reason for reconsidering their action on the Orford stone, except what I have already stated. I was at the Orford quarry with some of the Commissioners. Stein, Dawson, and Dewey were there at the time I was there. Mr. Dawson said the quarry was sufficient. He said there was stone enough there to make half a dozen State Houses. We were there alone at that time. It was a common rumor that the Board were going to annul my contract. The evidence I had they were going to do it, was the Governor's refusal to execute the contract. I called with Mr. Withrow, and made a formal demand for an execution of the contract. When I went to Gov. Merrill, I do not remember anything else said at that time, except with reference to the stone. At another time he said some of the Commissioners were connected with the bids. He asked whether Col. Dewey was not in the ring?

I cannot say he ever told me he had positive proof of a ring.

Q. How did you find out when the Commissioners were coming back from Chicago?

I had a friend there in town who, told me when they were coming back.

There was a place in the Orford quarry where a fire had been built against the stone, which caused the stone to break off. I believe what is in this vial, is the stone which had been burned. The vial was furnished from Marshalitown by a rival quarry.

Q. Did you receive any pecuniary consideration for withdrawing that injunction suit?

A. I never received a dime for withdrawing that suit.

MARTIN TUTTLE, *being called and sworn, testified as follows:*

My name is Martin Tuttle; age, 47; business, contractor. Am connected with the building of the foundation of the new Capitol. Am of the firm of Tuttle & Robertson, who have the contract for stone for the foundation. Think we first made the contract in April; cannot give the exact date. We commenced furnishing stone the very last day the time allowed. Had a great deal of work to do in opening our quarry. Had two and a half miles of railroad to build. Can not say from memory how much we got from Bear Creek. We got the next stone from a quarry known as the Earlham quarry. We next went to Rock Creek. Went to a dozen other places, in the State of Iowa, and elsewhere, before we went there. We had reason to believe the Rock Creek stone would fill the contract. Page 70, of the Report of the Board of Commissioners, is a copy of the contract between Tuttle & Robertson and the Board of Capitol Commissioners. This contract was modified during the summer, as to the place where the stone might be had. There was no change made as to the quality of the stone. They were to accept or reject it when delivered. Sometimes the Superintendent, and sometimes the Executive Committee, would accept it—usually accepted by the Superintendent, I believe. I think there was never any stone delivered or received here, but at the time was supposed to fill that contract; there was some fault found at the time of delivery, as to the quality of the stone. Mr. Cochrane and Mr. Appleyard at one time made a good deal of objection. Said those horizontal seams in the Bear Creek stone were a damage, and consequently could not receive them. Some of the

Rock Creek stone were being rejected all the time. Sometimes were rejected on account of their shape. We thought some were rejected which should have been received, and some received which should have been rejected; this on account of great haste. All the stone rejected were not removed from the ground; some were left here. Some were rejected for shape, and were used as rubble stone. Think the Commissioners, as a body, never found fault with the Rock Creek stone. Think the Executive Committee did not call attention to these defective stone. No individual called attention to them that I know of, personally. I understood some objected to a portion of them. We had been most everywhere for stone, and were losing money. This kind of stone was in the "Lock" and under the court-house in Keosauqua. There is not a man can tell the difference; we found they had stood a test of the very best kind. I cannot tell the difference between the Rock Creek stone and the stone under the court house there. We hoped to get into a new quarry; the only quarry we could get was the Sonora quarry; we could not get this out for less than eighteen dollars and a half per yard. Having lost about thirty thousand dollars, that would make about eighty thousand more.

The Sonora quarry is owned by Patterson & Timbermann.

S. A. ROBERTSON, *being called and sworn, testified as follows:*

My name is S. A. Robertson; age, 38 years; residence, Des Moines, Iowa. I am one of the firm of Tuttle & Robertson. We have a contract for furnishing the stone for the new Capitol foundation. We did not put in a bid last June, at the first letting. We were talking of it at that time. I saw Col. Dewey about that time. I tried to have a conversation with him, but he did not seem willing to talk; said he was busy, and he would not give much light on the subject.

The first I saw of the report of the chemical tests was after the first letting.

Q. Did you know of any one giving information of the standing of the rock, by the chemical tests?

A. Only what I heard persons say. Col. Scott intimated to

me, that he was posted on what quarry would take the contract, before the first letting.

Q. Did he tell you how he became posted?

A. He was very reticent about that.

We made an estimate of what it would cost to furnish rock from Bear Creek quarry. I think it was eight dollars per yard before we took the contract.

Q. When you commenced furnishing rock, what would it cost, aside from the improvements which you put on, which would be permanent on the quarry?

A. It would be impossible to answer, owing to the failure of the quarry to produce such stone as we had anticipated.

Q. How much money did you expend in getting it opened, and building the railroad to Bear Creek quarry.

A. I think it would reach something like thirty or thirty-five thousand dollars.

We delivered three hundred and eighty yards. That is all the money we got out of the Bear Creek quarry. We let the Rock Island Railroad Company have some stone.

Q. Are the rock according to the Peter Tobie sample, No. 1?

A. I believe they will average with that sample; some better, and a few not so good.

Q. Was the contract to average as good as that, or was it that none should be worse than that?

A. It would be a hard matter to find any quarry that would produce stone all of one kind, in the opinion of judges.

Q. Did Mr. Appleyard complain to you?

A. Yes; quite a number of times.

He rejected a large amount of stone. All that were accepted and put in the foundation, were accepted by Mr. Appleyard, with a few exceptions.

Mr. Appleyard said several times, in my presence, they were good stone.

Q. Have you seen any which have burst, in the foundation?

A. Yes; some. A great many that are injured would have stood, had they not been used when green. Some of the stone burst

by the frost, were got out from the 15th to the 20th of November. It is not an unusual thing for stone to burst, by frost when green.

Q. What proportion did Mr. Appleyard reject?

A. He rejected more from Bear Creek than Rock Creek quarry. I should think about eighteen per cent. from the Bear Creek quarry, and about five per cent. from the Rock Creek quarry.

Q. Did Mr. Appleyard propose to reject any more rock?

A. Yes; if we did not send all good stone.

Q. Did they work the stone as fast as you sent it?

A. Until late in the season; we then began to catch up with them. I think we had got ahead of the laying about four hundred yards when work stopped, which I think was on the 22d of November. Have delivered about eight car-loads since that time.

We lost money on the job.

Q. Do you desire to be relieved from the contract?

A. If we could do so honorably. I think no one has heard any complaint from us.

Q. Can you tell the cost price of Rock Creek stone delivered here?

A. It will run considerably more than we get.

Q. Will it run three dollars over on the yard?

A. I think that much, or more on what we have delivered from Rock Creek. I think they could be delivered for fourteen dollars.

It is my opinion the stone burst in the foundation, would not have burst, had they been properly seasoned before they were put in.

The Rock Creek quarry is in litigation. We think we own it if the title can be made good.

Some Commissioners took more interest in the work than others. Mr. Dawson was at the quarry six or eight times, and he once or twice pointed out stone which we thought of sending up. He did not want them sent. He was really very severe in his requirements, so far as regarded the shape and quality of stone. Mr. Dudley never made any complaints. Mr. Stein was there once or twice.

Mr. Dudley came there and took away some pieces of stone, and

said he was going to test them. He afterward said they stood the test better than he supposed they would.

There is one item, so far as the dimension of the stone for this foundation is concerned: when the first quarry failed, I contended the foundation could be built with smaller stone—that is, stone of less dimension could have been used to good advantage. By using small stone of good quality, you would get something sure. I have seen buildings which cost as much as this, and probably more, built on a foundation wall in which the stone did not average over five inches in thickness.

Q. On what did you base your opinion that the Rock Creek stone was a good, durable stone?

A. When I first went to see the Rock Creek quarry it was undeveloped. My attention was attracted to hundreds of yards of rock lying in the creek at the base of the bluff, in blocks containing from one-fourth of a yard to forty yards in a block, most of them lying in the water, in a perfect state of preservation. These stone looked as though they had lain there for thousands of years. The weather and elements seemed to have no more effect on them, than it would have on the best of granite. I saw those stone lying distributed along in the creek for a distance of two miles from its mouth.

Those blocks had fallen off from the different ledges in the quarry. They were the same quality of rock that you see bursted in the wall, which satisfies me that had the stone been seasoned, they would have stood as well as any stone in the State.

I never in all my experience in looking up quarries, saw such good evidence of durability, as there is to be seen at Rock Creek. This was why I was so favorably impressed with the stone. No man can go and look at this Rock Creek quarry without having the same impression.

EXPERTS.

GUY WELLS, *being called and sworn, testified as follows:*

My name is Guy Wells; age, 58 years. Business Civil Engineer. Reside in Keokuk, Iowa. Have been in the business for thirty-two years. Have examined the foundation for the new Capitol. We furnished the stone for the Capitol foundation at Springfield, Illinois, and for the bridge at Keokuk. Have built a great many bridges, locks, and aqueducts.

There is some good stone there, and some poor. I would take out every stone which is bad. I should judge about one-third the wall would have to be taken up to get out the defective stone. Then, from one-half to one-third of those taken out ought to be rejected entirely. As regards the structure of the wall, it is sufficient to bear any weight you can place upon it. The cement and most of the stone are very good.

The deep yellow stone is not much better than yellow clay. There is not enough lime or sand in it. This you will find is the case in most all magnesian limestone quarries. The effect of the frost upon it is to burst it. The soft stone will absorb water, freeze and burst.

Q. Would the stone that you saw there, answer to go in that wall, if placed out of the reach of frost?

A. Some of them would not. Some there, you will notice, will receive moisture from the ground, which will cause them to disintegrate. Some of the soft stone, if kept from the frost, are good. The dark brown yellow stone, looked very well. It will not be necessary to take them out. I did not notice any scaling on those. Think if away from the action of frost, it will not be necessary to take them out. I recommend the worst be taken out. After the frost gets out, dig down, and ascertain where the poor ones are. I would not take out any below the frost line.

I examined the manner in which the wall was built. The wall, so far as structure is concerned, is a fine piece of work. That wall would answer every purpose, if those defective stone had not been put in.

Some of the joints are larger than I would make, but the cement is good.

I would not take up the wall, or remove the stone, on account of one and a half inches of mortar.

Q. Did you examine the method by which they effected the bonding of the wall, whether by stretchers or headers?

A. Not very particularly, yet I saw there headers and stretchers both, and that they had a very good bond.

I examined the different specimens of stone. The yellow rock are not much used. The Des Moines Valley Railroad Company used some of them for bridges and culverts. Some of them stand well.

Q. Have you had any experience as a stone contractor?

A. Yes.

Q. What is it worth to deliver these Bear Creek stone here, free of all expenses?

A. About thirteen to thirteen dollars and a half per yard.

Q. What quarry do you represent?

A. The Sonora quarry.

Q. What does it cost to deliver that stone here?

A. About sixteen dollars.

I have no doubt these stone cost fully thirteen dollars delivered here, just as they are.

Re-called.

The specimen presented by Peter Tobie, (No. 1) is exceptionally good, as compared with the rest of the stone delivered from that quarry. The stone delivered will not average as good as the specimen on exhibition, but are much inferior. The specimen is a very good quality of magnesian limestone.

I am familiar with this kind of work, but cannot tell exactly. Do not believe that the stone could be brought from the Rock Creek quarry and put in the wall for less than twenty-three dollars per cubic yard. If the stone came from Bear Creek, the work would cost as much less as the difference in freight would be between those points.

I have examined the facing of the wall, except the footing course

and a part of the second course, which was so covered with ice and clay that I could not make a satisfactory examination of those two courses. I have marked some of the stone which I think should be removed. All I have marked ought to be removed, and such others as may be found of a similar quality, when the weather admits of a more careful examination. There are in the face of the wall, I should estimate, seventy cubic yards of the poor stone. It would require the removal and resetting of 150 yards to get at the marked stone, making in all, 225 yards.

I estimate the cost of labor of resetting the whole at about one thousand dollars, in addition to the cost of the stone. If the footing course is defective, it would cost three times as much per cubic yard to replace such as are defective, as it would to replace those which I have marked. I have marked those stone, many of them because they are in the face of the wall. Such stone, or at least many of them, if in the body of the wall below the line where they would not be effected by frost, either by being covered with earth, or other rock, I consider would be sufficient, and need not be removed, there being no danger in any crushing force destroying or affecting the stone.

I estimate, from such observations as I have been able to make, the entire cost of replacing the stone I have marked, including everything, at about two thousand five hundred dollars. If there is the same proportion of defective stone in the footing course as in the other parts of the wall, the entire expense would not probably exceed five thousand dollars, all things estimated.

JAMES B. LOCKE, *being called and sworn, testified as follows:*

My name is James B. Locke; age, 43 years; occupation, stone mason; have been in the business about thirty-two years; have been in Iowa a little over eighteen years; have examined the foundation of the new Capitol as it now lays; some portions are good, and some are not; the yellow rock I consider not good, and also the blue rock, with soap-stone seams through them. The trouble with the yellow rock is, they will not stand the weather. Looking at them, leads me to suppose so. The frost will shake them apart, and cause them to slough off.

Take any rock with the sap in it and they are more apt to freeze than after they are once dry. These blue stone will always be affected by the frost. It will break them all in pieces. Have known it to be the case ; saw some here which did the same.

Q. Did you notice any other rock which you consider defective ?

A. There are two kinds which I noticed, which I call poor, and not fit to put in a foundation.

Q. Suppose the soft rock were below the action of the frost, would they stand in a wall of that kind ?

A. There is one kind of yellow rock, which if the frost did not touch, I do not think would break. There is one kind not fit for any purpose ; it is a light yellow. Some of them are not fit to be put in the back part of the wall. It will decay from the effect of moisture.

I think it would be advisable to take the poor rock out. I do not care where found.

Q. About what portion have you an idea it will be necessary to take out ?

A. I think in order to take out the poor stone, you will have to take out nearly one-third. You will discover that about one-fourth of the one-third—that is about one-twelfth of the stone—are worthless. One section of the north-west corner is very poor.

Q. What do you think of the workmanship ?

A. In some places they have set a little heavier stone ; some are raised with mortar, where they should have placed a heavier stone. I think most of the stone is well bound on the face. Would not generally use over one-half inch of mortar to make a good joint. One and one-half inch is not so good. There are a few on the north side, which will have to be removed for that reason. Mortar will settle more than stone. The more mortar there is in the building, the more apt it will be to settle.

It should be well grouted. The grout should be very hard. The bonds should be well tried out and in as well as endwise. I did not notice any heading-stone running through the wall.

Q. What makes a strong bond—what length of bearing ?

A. The bond should be more than the height of the stone.

I was engaged in the State Blind Asylum. Had charge of the mason work until that building was completed.

Re-called :

I have just been counting the rock which I think will have to come out. There are one hundred and twenty-five in the footing course, and three hundred and forty in the wall, in addition to the one hundred and twenty-five in the footing course. The cost of taking them out, and rebuilding will be five or six thousand dollars—it may be six thousand. If many together, below the action of the frost, I would take them out ; if occasionally one, I do not think it would affect the building.

I found some places where the bonds were not good. The edges of the stone at the end of the wall should be regular ; I found some irregular. It is impossible to properly bind a wall, while the stone are left in that shape.

J. C. COCHRANE, *being called and sworn, testified as follows :*

My name is J. C. Cochrane ; age, 39 years ; residence, Chicago ; occupation, architect ; have been in the business seventeen years.

Q. State, if you please, all you know in relation to the building of the new Capitol foundation from the time of the commencement.

A. First, the Board of Commissioners appointed a Stone Committee, to receive samples of stone from the different quarries in the State and elsewhere. Mr. Dewey was chairman of that committee, I think. They received a large number of samples and submitted them to Prof. Hinrichs, for a chemical analysis, and after receiving his report, made their report to the Commissioners.

The Commissioners met on the 11th day of January, and on the following day the award was made to Mr. O. H. P. Scott, for the stone taken from the Orford quarry—the oolitic limestone. After the award was made, there was considerable said about the stone not being suitable for the purpose, and the Governor requested me to visit the quarry, which I did.

Q. Did the Governor express any opinion in regard to the stone ?

A. No, sir ; he said there had been considerable said against

the stone in the papers throughout the State, that he felt anxious about it, and would like to have me visit the quarry.

I came from the quarries here, and attended the next meeting of the Board. At that meeting, I think it was, they reconsidered the award. They came from Chicago, and about the time they were going to take action, there was an injunction served upon them.

I then went to Orford quarry. After that, they rescinded this award. The Orford quarry was entirely undeveloped, with the exception of a small hole in the hill. I thought it a great risk to undertake to get stone for the Capitol from there, for fear the quantity would not be sufficient to guarantee the taking of them. The foundation was to be large, and we should know what stone we were getting before we commenced.

I also, at the request of the Governor, visited Independence, to examine the granite boulders there. He had seen the stone, and was somewhat familiar with them. I visited Independence and examined the foundation of the Asylum, and went about enough to satisfy myself there were plenty of the boulders there to get enough for this foundation. I thought if we should use this stone—this granite—every one would feel we had material in the foundation, which could not be disputed. The question was a matter of expense. I devised a plan by which we could make it cost no more than the contract with Scott, and make it equal, or superior to any foundation in the country. My plan was this: To put in courses of granite, perhaps twelve-inch bed. I found we could get good ashlar that made good twelve-inch bed. Lay these on the second base of the wall (as headers) then above them stretchers, and fill in with rubble limestone; then carefully get the headers in their position, on these, and go on as before, then cap the walls with headers, and you have a wall which will be as durable as any in the country.

I found I was defeated in that, altogether, and great was my disappointment. The Commissioners decided against me—thought it would be an experiment. I do not know why they were against it.

I was uncertain of the quality of the Orford rock. Mr. Piquenard and I both objected to it; it was something new in this section. We found it very hard, but thought the Commissioners were of the opinion to have it, and we yielded our position (after the first award

was rescinded). They then advertised again, receiving bids from different places, and received a bid from the granite quarry again. I wished we might have the granite yet, but I found I was not sustained by the Commissioners. The question was: "What shall we use?" Tuttle & Robertson's bid was accepted.

The Commissioners wished me to examine the quarry, which I did, with some of them. So far as I could see, the outcroppings looked very well; seemed to stand the weather well. The responsibility of the parties was such I supposed if they undertook the contract they would carry it through. Supposed it might be as well to let them try it. I felt that the parties were responsible, and believed they would fill the contract, if they had to get the stone somewhere else. The season was late, and it was very necessary that we should do something. They commenced to furnish stone for the wall from that quarry. I found they did not furnish stone in accordance with their contract, and on the 19th of July, we wrote them a letter informing them the stone was not in accordance with their contract. After delivering several car-loads, we found them not in accordance with the contract, and I notified them that we could not receive them, because they were not in shape—that is, they were not scabbled according to contract. By request of the contractors, Messrs. Tuttle & Robertson, we entered into this agreement: we should have men scabble them, and charge back to them the cost of it, and take it out of the price of the stone. We thereafter received about one hundred and seventy cubic yards in that way. On the first of July, at a meeting of the Commissioners we informed them of the fact that none of the stone had been delivered according to contract, and of the arrangement we had entered into with Messrs. Tuttle & Robertson, and refused to do so longer, unless ordered to do so by the Commissioners. They passed a resolution instructing us how to receive the stone. After that we received them according to a resolution which is here on record. In a short time we found the quarry was giving out. Then the contractors offered to purchase the stone elsewhere, or let the Commissioners purchase, and charge to them. The Commissioners met. I was not present at the meeting. They appointed a Committee, of Dodge, Dawson, and Appleyard, the Superintendent, to visit the quarries at Earlham and Bear Creek, and one in Nebraska.

The Board authorized the Executive Committee on the 4th of August, to accept stone from the Rock Creek quarry, (which quarry we have never seen) on the Des Moines Valley Railroad, and since that time, they have furnished stone from the Earlham, Pella, and Rock Creek quarries. I find the Bear Creek stone has stood very well. I only discovered two that have cracked by the frost, and I believe them to be a very good limestone. Before giving my consent to use them, I met Mr. Johnson, (Chief Engineer of the C. R. I. & P. R. R.) He said to me, they were the best limestone in the State of Iowa. He has had experience in using them. I think they have proven to be so.

It has been our duty, as architects, to consider the action of the Committee in making purchases, to receive stone in accordance with the contracts, from the different quarries. We have endeavored to carry out the orders of the Commissioners, as architects. They have furnished their own Superintendent. We have given our instructions to him.

Q. Some of them complain that they furnished a Superintendent at your suggestion, and that you are responsible for his actions.

A. We are, if we gave any instructions to him, I suppose. And if he did not carry out our orders, we were expected to notify the Board, although he was not in our employ.

I would say, in regard to limestone, that I have no confidence in any limestone resisting the frost, unless it becomes thoroughly seasoned before cold weather; and any stone quarried after the 15th of September, is very liable to burst from frost. I would not quarry stone after that time until spring. Stone requires seasoning as well as lumber. I believe to-day, if the stone in this foundation had been quarried in the summer, there would not be a stone burst. The occasion of it is caused by the stone being full of sap. We have never had anything to do with such stone after that time of the year, but what it was affected in the same way. The corner stone in the Illinois State House was quarried before the 15th of August, and broke in pieces, so from the frost—we had to take it up. That was the Nauvoo stone.

We were architects for the Bloomington Court House, which cost \$400,000. Some of the stone which was quarried before the 1st of

October burst all in pieces in one night. So it is not any one's fault if any limestone burst. All limestone, especially magnesian limestone, will do it. My recommendation was to cover up the walls, for I feared many of the stone would burst. My plan was, to take plank, and stand about four feet from the wall, and cover with tar paper or straw; and if done, I do not believe any stone would have burst. I am surprised that no more are burst than there are.

At the laying of the corner-stone I observed several stone in there, which will have to come out. Our work was stopped then, and we found we had no one to take them out, so we thought we would let them stand until we resumed work.

I consider the only danger from this limestone is, of their yielding to the frost; but once covered up, the wall will be entirely protected, and the frost will never get to them again.

Q. Do you consider the stone on the outside of the wall, below the action of the frost, to be sufficient for that foundation?

A. So far as superstructure is concerned, there is a pressure to the square inch on the outside wall, of forty to fifty pounds; then for the dome, from seventy to ninety pounds per square inch. There is not a stone in that building but will actually sustain four thousand pounds to the square inch. It is all folly to say it is not sufficient to carry all that is necessary there. A common brick will carry one thousand pounds to the square inch.

Any man will say the concrete is of the best quality. I consider the stability of the building depends upon it. I consider the whole thing is sufficient to carry the wall of the building properly, except the stone which burst before seasoning.

I will say, where a dry seam runs horizontally in a stone, and is surrounded by sound stone well bedded, it cannot do harm to the structure, as it forms a perfect bed, and the stone are in the same position as in the quarry: and also an occasional vertical dry seam in a stone which is between very sound stone, would do no damage to the wall—it would not weaken the wall, unless in such a position as to destroy the bond.

The stone which I have marked to-day, I consider unfit. They have burst. I could not get at the footing very well. But my impression is, the footing is all right. I think they have not suffered

from the action of the frost. I made a record of the stone which must come out. I find there are seventy-four stone which must be taken from the wall, I find sixty-four sound stone must be removed to take them out. These stone by measurement will average one-half a yard each; and those also must be replaced, which will make thirty-seven yards. The cost of replacing those stone will be six hundred and twenty seven dollars and sixty-two cents. For taking out the poor stone, seventy-five dollars. For the thirty-two yards to be removed and replaced, one hundred and twenty-eight dollars. The laying includes mortar and all. This would be the cost. I I would add fifteen per cent. to that for contingencies. We have six hundred yards in the yard which is not laid. I calculate one-sixth will be burst. That has cost ten hundred and twenty-five dollars. We have two hundred yards not laid, which is cut. I calculate twenty-five yards of this will be burst. This has cost one hundred and forty-three dollars and seventy-five cents for cutting; making in all nineteen hundred and ninety-nine dollars and twenty-seven cents, not including the fifteen per cent. My estimate is twenty-five hundred dollars, allowing for contingencies.

I believe if these stone are taken out and sound ones put in their places, the wall will be entirely substantial.

I estimated the difference in the cost of this wall from what it would have been had we taken the original contract for the Orford stone. I have figured it very carefully. The estimates are only for the amount of wall actually laid. There would have been $677\frac{1}{4}$ yards of this stone, at \$17.55 per yard, amounting to \$11,894.51; also, $2033\frac{1}{4}$ yards, at \$19.95 per yard, amounting to \$40,603.34; making a total of \$52,497.85; and 2,700 yards of the stone which we have used, at \$10.25 per yard, amounts to \$27,787.75,—making a difference in cost of \$24,710.10. Deducting therefrom, the cost to replace the burst stone, \$2,500, it would leave a balance in favor of the stone used of \$22,210.10.

Q. You speak of the difference in the cost of this wall. Was that really why the contract was reconsidered?

A. I do not think it was, at that time. I do not think any one had any idea at what price we could get the stone at that time.

I considered the stone from Rock Creek good, if properly seasoned, except a few of the yellowest, which I think too soft.

I do not believe any of the Lock stone will have to come out.

I think there are six stone in the footing which I would take out. There are some at the south side, or in this [south] end.

The Pella stone looks very well, indeed.

I was here a great deal of the time; have been here two weeks at a time.

I consider the workmanship very good. The wall is very strong; I consider it sufficiently bonded. I will say, the bond with the Lock stone is not so large as I would like it. In the way it is laid, we have to put in more headers than if the stone had been larger and wider. We had to put them across, diagonally, and concealed many of them in the wall.

The mason work in that wall is good; there is none superior in this country.

The stone should have mortar enough to bed it. I would not use, only occasionally, two inches. For instance, to bring a stone to level, I would not object to two inches of mortar, although it is more than I would use ordinarily. Some mortar, I must say, is as hard as stone; it is harder than any rock in the State of Iowa. Here is a sample.

That mortar which is soft in the wall, will harden. I do not like Louisville cement so well as Utica, and we recommended the Utica cement.

As a rule, I would say a two-inch mortar joint was too large.

Take a certain class of stone from the same quarry, and it is impossible to tell the good from the bad sometimes. I would exclude the soft, yellow rock. When I came, I told Mr. Appleyard they were unfit to be put in. We have not worked any since.

Mr. Appleyard accepted the stone as Local Superintendent. Under the Architect's orders, he was working for the Commissioners. The Commissioners furnished the stone, and dictated what stone.

B. Was not you to be judge as to the whole class?

A. We were to discriminate, and decide if any were not in accordance with the contract.

I never saw any sample of the stone from Peter Tobie's quarry, that I know of.

Q. What do you think of the chemical and mechanical tests?

A. I had a sample of stone sent me a short time ago, which I sent to Prof. Blaney, who made a chemical analysis of the stone. This analysis I sent to Col. J. G. Foster, the eminent geologist, for his opinion. The answer was, he was unable to give any opinion as to the weathering properties of the stone, until he had seen it where exposed to nature.

I do not know that I have seen a chemical analysis of a stone which I can tell is correct or not. It takes about fifteen or twenty years to test a stone. I know that the new Houses of Parliament, in London, was tested and pronounced good, and is now crumbling to pieces. It was oolite limestone.

We did not consider the stone used, first-class; would not use it where exposed to continued freezing. It will be protected here, in this building.

Q. How much will it cost to re-set the entire foundation?

A. About thirty-five thousand (\$35,000) dollars.

Q. Do you think it will be necessary?

A. I know it would not.

Q. State whether or not, under the contract with this Board, it became your duty to receive or reject stone?

A. I do not think we are responsible for a class of stone they bought. Our contract was to obey instructions. We were not responsible for what the Capitol Commissioners did. We could not have rejected the Rock Creek stone. It was our duty to reject poor stone, which we did.

We are not responsible for the class, but we are responsible for defective stone in a class. It was the duty of the Local Superintendent to reject any stone the Commissioners thought unfit. And I considered it their privilege, if they saw stone going in there unfit to be used, to not have them go in.

HON. J. G. VALE, *being called, was affirmed, and testified as follows:*

My name is J. G. Vale; age, 50 years; reside in Van Buren

county, Iowa; occupation, a farmer; know something about the stone used in the foundation for the new State Capitol; have been on the ground and examined the rock some three times, I believe, since I have been here; am somewhat familiar with the rock used; know where some of them were obtained. The grey rock were for Lawrence Locks, in Van Buren county, and obtained from Potter's Branch quarry, a short distance below Bonaparte. The stone from Potter's Branch are grey magnesian limestone; they have been extensively used in locks in Des Moines river; were used in locks at Bonaparte, and also at Bentonsport. A very similar quality were used in a lock at Keosauqua. The clear magnesian limestone have stood the test in the river and elements, and never suffered, that I could see, from freezing. I think the test they have been subjected to has been a very severe one indeed. Some of the classes of stone that have come here will scale off, but the grey magnesian limestone will stand most any test. Have seen chisel marks on some of them which have been in the water thirty years. The grey magnesian rock is the good rock of which I spoke.

They have used a few of the yellow order of magnesian limestone. It will burn into lime, therefore it is called limestone. Some were used in the locks that I spoke of, and they crumbled out and gave away. I have seen them in other locations; have them on my place. Think they are not generally used for building purposes. We sometimes got those half way between the grey and yellow, that we could use. Freezing and thawing will break these yellow stone, but I think they will stand a heavy pressure. If placed in the wall below the action of the frost, I think the dampness would injure them, and age would crumble them. In the quarries where exposed to water, they will crumble, and turn to a bad shape, and round corners. This yellow rock comes from a quarry known as "Rock Creek" quarry. It has recently been opened and developed. Has never been used extensively. I consider them poor. Have not yet found the man but said he would not have the foundation of a stable built with them. They may be better as they get into the quarry. It has never been developed. They have proven a failure wherever they have been used. These are similar rock which I saw here. There are three distinct ledges of rock; one makes an excellent quality of lime, it is

a bluer grey than these; there is a yellow magnesian rock below the the blue limestone; but we regard the grey magnesian as a better building stone, and more reliable. The blue is not regarded as reliable. There was no difficulty in finding any quantity of good rock. One particular defect of the blue stone is that you cannot get them of the proper dimension. This yellow magnesian limestone has two particular defects. One class of this stone seems to be of clayey formation, full of pores, and very light; it is not really worthy of the name of "rock." Some of the poorest quality of it is now in the wall. There is another quality of it, full of seams and crevices; it scales badly, and breaks in pieces. There is some of that in the building. There is some there that ought not to be there. The building rock known as the grey rock in our (Van Buren) county, has been thoroughly tested, and has stood the test as well as any other rock in the State, as far as I have any knowledge.

A. R. FULTON, *being called and sworn, testified as follows:*

My age is 47; residence, Des Moines. Have been connected with the new Capitol, as Secretary of the Board. Assumed the duties at the organization, 25th of May, 1870. Am still in that position. It was my duty to be present when stone was received, and to take account of the measurement.

Q. Did you ever hear any of the Commissioners, or the Executive Committee, protest against the stone on account of defective qualities?

A. Yes; I heard several of the Commissioners protest against the quality of the stone.

Messrs. Dewey, Dawson, and Wilson—those I remember distinctly. Mr. Dawson, particularly, protested very earnestly against the stone, at different times. The protest was made to Mr. Appleyard, in my presence. I heard these objections from Mr. Dawson frequently. Think the Superintendent rejected stone at the suggestion of Mr. Dawson. At times, I think he accepted stone, which Mr. Dawson objected to.

Mr. Appleyard expressed as his opinion, that the yellow stone was a good stone. I heard him say they were the best stone. I do not know that he referred to the very soft, yellow stone.

I have seen him reject a stone because it was too soft. I remember one time of his rejecting stone in consequence of its being too soft. This was about the last stone received, before the work was stopped.

I do not think the soft, yellow rock were good. Do not think the blue rock were good. Think the hard, brown stone were the best.

Q. Tell why the Board rejected Mr. Scott's bid of the Orford quarry.

A. I think in consequence of the evidence offered against it.

The affidavits in evidence against this quarry, were mostly from Marshall county. I received the bids. Do not remember when. O. H. P. Scott's bid on the Orford quarry was handed in. Nearly all were handed in on the day the bids were opened. The bids are all filed in the office of the Secretary of State. Think all the bids of Scott were handed in on the day the bids were opened—I think only a few minutes before they were opened.

Q. Who had control of the chemical tests of the rock?

A. Mr. Dewey was the man appointed by the Board. The report was made by Prof. Hinrichs to the Committee, of which he was the Chairman. They were made known to the Board, I think not until the meeting, when the award was made to Mr. Scott. I knew nothing about the result of that test before. Do not know that any other person did.

The laborers on the new Capitol, at first, received one dollar and a half per day, and that was raised to one dollar and seventy-five cents. The foremen of those who worked on concrete received two dollars per day. Some men, who worked with the derricks, were paid one dollar and ninety cents. Mr. Appleyard said the place was a little harder than others, and while some were getting one dollar and seventy-five cents, they were getting one dollar and ninety during the last of the work. The foreman of the masons, I believe received three dollars; at last they were raised to four dollars and twenty-five cents. Mr. Smith, foreman of the roustabouts and general work, four dollars and twenty-five cents, at the last. The foreman of the stone-cutters received five dollars per day. That I think was the most paid to any man, except Mr. Appleyard. He was paid at the rate of thirty-five hundred dollars per year—two hundred

and ninety-one dollars and sixty-six cents per month, for his full time, ten hours per day.

My opinion was, that this work could be done by the State a great deal cheaper and better than by letting it out on a contract, and that the work would be generally better. There was a surplus of laborers at that time, and that made labor cheap. The sand and water were very cheap.

Q. Why was it that the Board allowed the poor rock to be put into the foundation?

A. My opinion is, that during the last part of the work, Mr. Appleyard was determined to get along with it, to be ready at the time appointed to lay the corner-stone. I think he wanted his men to put in the wall as rapidly as they could. They were encouraged by raising their wages, to compete with each other. The stone were coming on slowly, and some stone taken that might not have been taken if there had been plenty of stone to select from. All were anxious to get as much of the wall in during the season as possible, and in time to lay the corner-stone.

They fixed upon the 16th of November, to lay the corner-stone, but subsequently changed to the 23d, in consequence of the work not being far enough along, and the stone not being ready.

There was not a good supply of rock on hand, to select from, and they took the best they had.

Mr. Appleyard accepted all the stone which is put in the foundation, except once or twice, Mr. Winkley received some stone, at the time Mr. Appleyard was away; and once or twice Mr. Appleyard, got one of the foremen to go and measure some of the stone on the cars. A few stone were received by Mr. Livesly. All stone were received under Mr. Appleyard's directions.

Q. Did the Executive Committee sometimes measure and accept stone from the cars?

A. Mr. Dudley received the first fifty-seven yards from Bear Creek quarry.

Q. Did any of the Executive Committee at any other time measure and receive stone.

A. Mr. Dawson received, and measured several car-loads of the Pella stone, and seven or eight car-loads of the Farmington Lock

stone, all after the work was stopped, and the Superintendent discharged. He rejected nearly all this lot of Lock stone. This, and that received by Mr. Dudley, was all the stone received by members of the Executive Committee.

N. W. SMITH, *being called and sworn, testified as follows :*

My name is N. W. Smith; am 33 years of age. Occupation, foreman of derrick rigging, concrete work, and general work. Was engaged on the work on the Capitol of this State about the 1st of May, 1871. Commenced work on the Capitol of this State about the 1st of May, 1871. Had the direction of the concrete work under the Superintendent. The depth of this concrete is two feet; width from 8 feet 8 inches to 9 feet 4 inches, and when the ground is graded about the building, the bottom of the concrete will be about eleven feet below the surface. This is the concrete under the outside walls. The concrete under the dome is four feet thick, and is about twenty-four feet wide, and includes a circle of forty-eight feet in diameter. The concrete for the partition walls is from four to five feet wide, and is 18 inches deep. This concrete is made of good limestone from Madison county. The stone is broken up so that no piece is more than two inches in diameter. The cement is from Louisville. The sand is from Des Moines river. Two parts of sand and one of cement are mixed with sufficient water to form a proper consistency. Eight parts of broken stone are mixed with five of mortar. In my opinion, the concrete work is of the very best quality. The concrete is laid on a firm clay bottom, so compact it could only be removed with a pick. The bottom of the trench is covered with broken stone, and rammed down. The concrete is put on this layer of broken stone. The upper surface of the concrete is six inches below the bottom of the cellar. The concrete extends six inches beyond the footing stone. The wall is one foot narrower than the footing-stone, leaving a base of six inches on either side. The main wall is four feet and ten inches in thickness, and nine feet high above the concrete. All the stone in the walls, and on the ground, came from the following places: Bear Creek, Earlham, Pella, Rock Creek, and the Lock at Farmington. The total quantity of dimension stone delivered and

accepted, is upward of two thousand five hundred yards. The footing-rock came from Bear Creek, Earlham, and Rock Creek. So far as I know, the quality of most of the rock in the footing course is good. A portion of the rock from Rock Creek is of poor quality, and some of it good. Some of the stone in the main wall is unfit to be put there. Some of the Rock Creek stone has been rejected because deficient in dimension and quality. Some of the "Lock" stone was rejected for the same cause. Some of the Rock Creek stone should be taken out of the wall. A person conversant with stone, can tell by examining the wall, how many of the stone should be removed. The mortar used in the wall is first-class. I regard the workmanship in the construction of the wall, as good for that kind of wall. The first stone was laid in the foundation on or about the 17th of August. No stone had been delivered at that date. The stone from Rock Creek were first delivered about the 15th of September.

JOHN SHANLEY, being called and sworn, testified as follows :

My name is John Shanley ; am 33 years of age ; reside at Des Moines ; am a stone cutter by trade ; have been in that business sixteen years ; worked at the business in Pennsylvania, Indiana, Ohio, Iowa, and Kentucky ; have been in Iowa ten years ; commenced work on the new Capitol in June, and continued to work thereon until the work closed in the fall ; was cutting stone.

The Bear Creek stone of deep blue, without seams was good. Another kind of nearly the same color, greyish blue, with seams, was not so good. The principal part of the seams run with the bed of the stone. Some of these had seams running crosswise. I consider these stone unfit to go in such a building.

The yellow rock from Rock Creek, I consider unfit to be put into such a building. Occasionally, there is a good stone. The Rock Creek stone is of three colors—blue, grey, and yellow. The blue stone are generally poor ; the grey were generally good. A number of the blue were put in the foundation.

Was engaged in trimming the wall for four weeks in August and September. During this time saw some of the blue stone (Rock Creek) put in the wall—in the west wall around the portico. The

stone in the footing was good. Some of the Rock Creek stone put in the wall, I consider unfit for such a wall.

While I was employed on the wall, I saw but three or four rough stone put in for backing. Generally a cut stone was inserted. The work was generally well done, the stone being wide enough to overlap each other. I consider the mortar good. I consider the concrete work a first-rate job.

In the southwest and southeast corners, the poorest stone were put, and on the outside of the wall.

I think there was about twice as much mortar used in places, as ought to have been. It may be seen under the coping on the southeast corner.

In the southeast wall the stone is good ; also in the north wall. The only part of the wall that is unfit for the building, is at the northwest, and southeast corners, and south side ; the rest of the wall is good enough.

R. C. McMILLEN, being called and sworn, testified as follows :

My age is 45 years ; occupation, stone cutter. Have been in that business thirty years. Commenced work on the Capitol in July, 1871, and continued at work there until the work closed in the fall.

I should say that the concrete work under the building is very good. The footing stone is from Bear Creek—at least some of it. Some of this stone is good, and some very poor. The poor stone is on the west side of the building, and between the west projection and the southwest pavilion. The footing stone at the southwest pavilion is good. I believe the poor stone is put in the front wall, and is now covered up.

The Bear Creek rock had clay seams running with the grain and across the grain. I think such rock is disposed to crack, if exposed to the action of frost. The Bear Creek rock without these seams is good. There is a great difference in the quality of the rock from the same quarry.

I suppose the rock, if below the reach of frost, would support the weight of the building.

The Rock Creek stone is too soft. Some of it is good. I dressed some of this rock, and consider it too soft to make a foundation. This rock was placed mostly in the south end, and north end. This rock does not stand the action of the frost. Some of this rock is in the footing course. I dressed some of this rock four years ago, and it is good, but the different layers vary much. The Rock Creek stone is yellow; some of the strata are blue, and also poor. The grey rock from the same quarry is good.

The quality of the rest of the stone obtained at other quarries is good.

The Pella stone, I consider the best. Have known the Pella stone for sixteen years.

I think the mortar used was good, and also the cement.

The wall should have headers and stretchers, in my opinion. The stone were laid well, and bedded, with space filled in with broken stone. There were stone on hand that would make headers that were not so used.

On the southeast corner the coping has too much mortar under it.

R. Y. HUME being called and sworn, testified as follows:

My name is R. Y. Hume; my age, 41, last August; my business, stone-mason; have been engaged in the business more or less for twenty years; most of the time in Canada East; for the last two years in Iowa; have worked at my trade ever since I have been in Iowa, all the time, except about two months; cannot tell the exact date, but think in July or August, I commenced work on the new Capitol; saw them putting in part of the concrete foundation; it was my opinion that it was very good quality; saw some that was above the "grade," that had to be taken up; found it hard to "pick" up. Am not positive how many kinds of stone they put in the building; think somewhere about four; all the stone were not used in the building; some had to be condemned. The stone with clay seams came from Bear Creek. The material was good otherwise.

Q. What was the color of these rock?

A. Grey and blue.

The difficulty with these rock was, it had these seams in it.

Q. What objection did these seams make to the stone?

A. My idea is, that in making a joint, these seams would be an objection. I believe the stone is strong enough to bear the weight which is intended to be put upon it. Never had any experience with this kind of stone at any other place. All the stone brought here was new to me. Some of the yellow stone was very hard, and some very soft. They are strong enough for building purposes in some places. If they were down so deep the frost would not touch them, I imagine they would stand. Do not know what the frost has done. Saw some stone used which I did not like very well; they were yellow; did not think they would stand the frost very well.

Q. Are you satisfied there was or was not, any of these defective stone used in the wall?

A. Am satisfied there was some that I did not like very well.

Q. What proportion?

A. Oh, a very small proportion. I have no knowledge of the character of the rock, except from my own observation. As far as I saw, the workmanship displayed in the wall, was very good; the wall was very well bound, I consider, as far as I can see. Saw some joints where the stone did not come together. Saw some places filled with small stone—that is grouted. Grout is thin cement, such as we build with; it fills up every hole as large as the eye of a needle. I consider it the best thing that we use. Some of the wall was bound with some of the stone passing through it. I think the wall was well "broke," as far as I know. I liked the mortar very well.

Q. Are there any places in the wall where there is too much mortar used?

A. There were some stone brought from Des Moines river, which didn't fill up exactly, and we would make the mortar thicker; could not say how much thicker. I suppose in two or three places they raised the rock in that way one-half inch. Don't consider that good workmanship. Am familiar with the plan of this building; have examined it. I consider the foundation walls sufficiently strong; think the wall sufficient to hold the building intended to go on it. I have not examined the yellow rock, to see what effect the frost would have upon it. Have not been out since work was stopped.

CHARLES ROSS *called and sworn, and stated as follows :*

My name is Charles Ross ; am 33 years of age, I guess. My occupation is stone masoa. Have worked at that business about twenty-one years. Have lived in Iowa nearly two years. Have worked at my trade ever since I have been in Iowa. Commenced work on the new Capitol on the 17th day of June, 1871, I think. I cut stone until they commenced laying, and then went on that.

Q. How many different kinds of rock were used there ?

A. Bear Creek was the first ; some from Earlham, some from Rock Creek. That is all that I know of. Don't know of any of the rock that was deficient. There was some from Rock Creek that was very soft,—the yellow was softest—was very soft. I guess there was not as many seams in it as in the Bear Creek rock.

Q. Do you regard the soft, yellow stone as proper material to go into that building ?

A. It is hard enough to bear any weight.

Q. Do you think it sufficiently strong to support such a building as that ?

A. Oh, yes, sir.

Q. Was any rock put in that building to your knowledge that was not sufficient to stand the frost ?

A. Only in a few cases, that I saw, where stone was put in the wall wet. It come wet, was laid wet, and the frost burst it.

Q. Would frost operate that way upon good stone ?

A. All stone does not have so much sap in it as the Rock Creek stone. Of course the more water there is in it the more apt it is to freeze. I know of no other poor or deficient rock that was put in the wall. I understood there were some blue rock from Bear Creek put in the west wall. All the Bear Creek rock I saw which came there were grey. I know of no defective stone being placed in the wall.

Q. Do we understand you to say you regard it as proper material for a wall of that kind ?

A. Yes, sir.

Q. Do you know what effect frost has on that yellow rock ?

A. It splits it both endwise and edgewise. I saw one stone that

was burst. The sap must have been inside the stone, or it would not have burst. I worked at the left side of the west front, south-west corner, and run this way, and round to the north-east corner. I did not do any work on the south end of the wall. My opinion of the character of the workmanship displayed in the wall, is I never knew of so strong a foundation—never saw anything compared to it for strength. I think the wall was well “bound.” There was some filling put in between the front and rear stone. It was filled with stone broken in small pieces, and then filled in with cement and water. Think the cement was very good. Have seen much worse used than we used there. They may have put the mortar thicker in some places than others ; could not have been much thicker ; might have been one-sixteenth of an inch.

Q. Did you have any difficulty with the stone got out of the Lock ?

A. They were mostly thicker at one end than at the other. We usually dressed them down. The thickest place of the mortar in the wall, I would think, was $\frac{3}{8}$ of an inch. Do not know of any over $\frac{3}{8}$ of an inch. Am not afraid of the foundation. Suppose it is mostly Rock Creek rock on the outside, next to the clay. I would say on my oath, that I consider the stone in the foundation is sufficient to support the building which is to go upon it.

CHARLES LEWEKE, *being called and sworn, testified as follows :*

My name is Charles Leweke ; age 32 next August ; reside at Des Moines. Business, stone and brick mason ; commenced my trade when 16 or 17 years old ; worked at it all the time since—about 15 years, I believe. Have lived in Iowa five years—in Des Moines. Worked at my trade all the time. Began to work on the new Capitol last summer ; worked about three months, laying stone. Found four different kinds of stone—some call it only two. Do not know where it came from—Rock Creek, I believe. It was yellow ; part was blue. Think the yellow rock was too soft. It might stand in the wall, and might not—would not say anything, only I do not like it. Many of the blue rock have been burst by the first frost.

Q. Was the blue stone harder than the yellow ?

A. I do not know. The first yellow stone, was very soft, but

soon commenced to get better. That is what I think about it. The other stone was very good. The Earlham, and Bear Creek stone, I think were good stone. All I know of the Farmington Lock stone is, that some were hard and some soft.

Q. Were any too soft to put in the wall—any that were put in?

A. I don't know.

Some stone that were not good enough to go in the wall, were good enough for filling.

Q. If you had been putting up that wall, would you have used that Rock Creek rock for the outside of your wall?

A. I would not have them inside, next to the cellar—would as soon have it on the outside.

I worked on the west side, from the middle to the south; can't tell how many feet—think seventy.

Q. How many poor stone were put there, where you were at work?

A. Well, I think that was well done, so far as my experience is.

Q. What is the quality of the wall north of the west projection?

A. That wall is not so good.

Q. What particular stone was put in there?

A. I think the yellow stone, which I don't like very well.

I think it is too soft. Cannot tell how many were put in.

Q. Was the stone on the inside any better than that on the outside of the wall?

A. Sometimes the stone didn't look very good, and the foreman would tell us to put it on the outside, where it would be covered up. I believe some of them were soft. The foreman always told us to take the roughest for the outside, and the best ones for the inside—I mean which would look better, and would lay well. I worked on other parts of the wall. I laid up the corner where the "corner-stone" is. I think it could be better done than it is. I think there are some poor joints, because the dimension bosses were trying to run one another, and to get ahead. Sometimes we would get down a stone too thick, sometimes a stone not thick enough. I call that a first-rate wall. Have no objection to the wall. The south end of the west projection is good. There are some bad joints in the south-east corner, and some in the south-west pavilion, and some between the

south-west pavilion and the portico, on the south side; some in the south-east pavilion on the west side, and some north of the pavilion. The part where the two dimension bosses were running each other, was the last two or three courses on the north-west pavilion, and north-west of the west angle of the foundation. I told the foreman several times, I believe when I was working on the main wall near the north-west pavilion: "Joe, let us do our work right, no matter how long a time it takes." He did not say much, only, "That's all good enough." I think the mortar was pretty good. It may be there was a little too much sand in it. Think it was generally pretty good. Think the thickness of the joints was from three-eighths to one-half an inch.

W. P. WINKLEY, *being called and sworn, testified as follows:*

My name is W. P. Winkley. Will be 56 years of age in a few days—the 3d day of May. Residence, Des Moines. Business, stone cutting and laying. Commenced the trade when about sixteen years old. Have followed it since 1858 but about four years. Have lived in Madison county and Des Moines. Have been in Des Moines over four years last fall. Did not work at stone cutting last summer a portion of the time. Think I began work on the new Capitol some time in May, and continued till the middle of September. I became familiar with the quality of rock used to the time I left. Believe they came from three quarries—one was Bear Creek quarry, west of here, and a quarry near Earlham, and Rock Creek quarry, in Van Buren county. Think there were more than three kinds of stone. Think there were three different kinds came from Rock Creek. Think they were three distinct stone. One was dark brown, somewhat variegated; another was of a yellowish cast; still another kind of a bluish cast. In my opinion they were not good stone. The yellow stone was a great deal the softest, although the frost seemed to affect the blue stone as much as the yellow.

Q. Do you think the yellow stone too soft to sustain the weight of such a wall?

A. Should be suspicious of it. It was so soft I could scratch it up with my thumb nail.

Q. Were there any good stone which came from Rock Creek?

A. Do not think there was a good stone among them. They might, possibly, if out of the reach of frost, be sufficient for such a wall as that. The blue stone would crack with frost.

Q. Will that stone, in your opinion, sustain the weight of the building?

A. It might, if out of the reach of the frost. The brown stone was better. There were defects in some of the other kinds of rock used. Some of the stone had clay seams in them.

Q. If out of the reach of the frost, would they answer for that wall?

A. We did not consider it safe to put stone of that description in such a building.

Q. How much of the Bear Creek stone, that was defective in this respect was put in the wall?

A. Do not know exactly—think about fifteen yards.

The greater part of this was used in the wall.

Q. What proportion of that stone was defective.

A. I should say more than one-half; some very badly seamed. Some of the yellow ones broke in handling. I was at work on the south-west side of the south-west angle. There is a difference between the stone on the outside and inside of the wall. The best stone is on the inside. The seamed stone was put on the outside next the embankment. Masons always lay a bad stone where it will be covered up. I can find none on the inside wall; think they are on the outside wall. The clay seams in the stone made the stone very bad—they could not be quarried out. They were very good stone, otherwise than the seams in them. They were put in the south-west angle of the south-east side. The blue stone from Rock Creek were put in anywhere. In my opinion, the frost line runs down not over three feet. If one of the blue stone was down three feet, it might not possibly affect it. The blue stone and some other stone would support such a wall, I think, if not affected by frost. Could not say what proportion of the blue stone were laid in the wall. I left soon after they commenced sending them. They were putting them in at the time I left. They were then working at the lower part of the wall. Were laying the footing course. The last

time I was there, they were on the third course. I have one of the soft stone in my pocket. Do you wish to see it? [Witness exhibited the stone.] Could not state how many such stone were put in the wall. They were using some on the outside of the wall.

Q. By whose authority were such stone put in the wall?

A. Mr. Appleyard pronounced them as good as granite.

Some of the mortar was very poor. I can find it in the wall now, and show it to you, if it is not frozen. Some places there was too much mortar used. In some places it is two to two and a half inches thick. Think the mortar had too much sand in it.

[Witness here exhibited another stone cracked with frost, which he had tested.]

This poor mortar differs from other mortar, as it is soft. The spaces in the wall were filled in with small stone and cement. Guess after I left they filled it in most any way.

Q. Is there any difference of opinion by mechanics as to the best manner of binding the wall?

A. Some bind by laying stone stretchers—some by headers.

I have known cases where the wall separated from the inside. Have known buildings to be thrown down by the wall separating in that way. There are a great many defects in the construction of the wall. Do not think the stone were placed as they should be. Do not think the footing course was well laid. There were seams as large as sixteen or eighteen inches. Think the concrete is very good.

JOHN M. PARR, *being called and sworn, testified as follows:*

My name is John M. Parr; age about 38 years—39 the coming August; reside in Des Moines; occupation, brick laying and stone setting; have been in that business about 21 years; have been in Iowa two years and nine months; am not positive when I commenced work on the new Capitol, but the latter part of September, to best of my knowledge. The first two days laid brick, remainder of the time set stone.

Q. While at work did you handle any stone, that you considered defective which you put in the wall?

A. Well, yes ; there was a kind of blue stone, which I do not think would be fit to put in a house of that kind. It was too soft. If it was placed out of reach of frost, I don't know but it would be all right. Most of it was put in this [south] end of the building. Did not notice any in the "foot course." Do not know what quarry they came from ; think they came from down the railroad. Do not know whether they were Rock Creek quarry or not ; they came up the Valley Railroad. The yellow stone was too soft ; some was softer than the blue stone, I think.

Q. Where are they from the "corner-stone ?"

A. Some in the south wall, east of the southwest pavilion ; some in the main wall, at the east side of southwest pavilion ; some in the main wall at the south end, just east of the portico. One stone as we were lifting it by the derrick, broke of its own weight—or in other words, the stone "capped." Some of the Rock Creek stone I do not think were good—crumbled a good deal ; could not tell how many were soft—think a good many ; never counted, nor took particular notice. Do not think there was any orders to put inferior stone on the outside of the wall where they would not be seen. As for other material, I saw no objection to it. As to the quality of the workmanship, some of the joints were not "broke" well—were not sufficiently "bound." The spaces were filled up with small stone, and "grouted" in. There was no lack of good stone. I think some of the filling in the center of the wall was not sufficient—at least it was not filled up solid. In large places we put in as large rock as we could, then small rock, and filled up with grout. It shrinks some when it dries, but should be filled before you lay the next layer. Think it is the best way to fill up with soft mortar—it will find every crevice in the wall. There was one man who did not do his filling right and Mr. Appleyard discharged him.

Q. Where was this man at work ?

A. At the southeast corner of the portico.

The mortar was two or three inches thick on the west side of the portico. The stone was raised, and they would not take time to rectify mistakes, but put it in. Do not know the man's name who told us to put it in—only "Joe"—Joe Livesey, I guess. I suppose it was the

foreman's place to see the proper stone in its place. I think the mortar was good. Think there was too much used in the southwest corner of the southeast pavilion. Think there was too much mortar in some other places. Think there was too much in the southeast or southwest pavilion. Some of the stone cutting was not done quite to the line. I noticed one or two stone come in there to use, which I told Joe, he had better take out. He said, "Slap it in." Did not notice but one or two such stone. Noticed one or two yellow stone with clay seams across them. I walked around the wall a week or ten days ago. Some of the stone did not appear to stand the frost. You can see all the poor stone in there now.

APPENDIX.

[S.]

Record, page 56.]

THURSDAY, Jan. 12, 1871.

Mr. Dodge offered the following resolution:

Resolved, That the bid of O. H. P. Scott, of \$17.55 per cubic yard, provided he furnishes stone from 8 to 16 inches in thickness, and of \$19.95 per cubic yard, provided he furnishes stone from 16 to 24 inches thick of dimension stone, as called for by the Board of Commissioners; and the bid of \$9.00 per cubic yard for block rubble stone, all the stone to be furnished from the Orford quarry, being the lowest bid for stone determined as being first-class, is hereby accepted.

On the passage of this resolution Mr. Dudley demanded the yeas and nays, which were as follows:

Yeas—Messrs. Dodge, Dewey, Joy, Stein, and Wilson—5.

Nays—Messrs. Dudley, Dawson, and President—3.

So the resolution was adopted.

[B.]

Record, page 58.]

WEDNESDAY, March 15, 1871.

WHEREAS, That since the proposal for stone for the foundation of the State House, made by O. H. P. Scott, was accepted by this Board, on the 12th day of January last, various reports have been

made, and certain affidavits have been presented, reflecting greatly upon the quality and durability of said stone; and

WHEREAS, This Board earnestly desire to use no stone for said foundation of the State House, except such as is considered and proved to be of first quality and durability; therefore it is hereby

Resolved, That the resolution passed by this Board at its last session, on the 12th day of January last, accepting the proposal of O. H. P. Scott, be reconsidered.

Mr. Dewey demanded the yeas and nays, which were as follows:

Yeas—Messrs. Dawson, Stein, Crosby, Dewey, Dudley, and President—6.

Nays—None.

So the resolution was adopted by unanimous consent.

[C.]

Record, page 62.]

WEDNESDAY, March 29, 1871.

WHEREAS, Since the adoption of the resolution of the 12th of January, 1871, (and which said resolution is now pending before this Board on a reconsideration), the President, Superintendent, and Architect, and several members of the Commission, have personally inspected the quarry from which the stone mentioned in said resolution were to be furnished, and have this day reported, that from said inspection, it is their opinion the capacity of said quarry to supply stone to construct the foundation of the Capitol building of character and quality equal to the sample submitted to the Board, and subjected to scientific and mechanical tests by Professor Hinrichs and General Rodman, is insufficient. Therefore,

Resolved, That all bids heretofore presented for stone for said foundation (including the bid of O. H. P. Scott,) be rejected, and that the President of the Board proceed to advertise according to law for new bids for the furnishing of said stone.

The question being on the passage of the resolution, the yeas and nays were demanded, and were as follows:

Yeas—Messrs. Dodge, Dawson, Dewey, Joy, Stein, Wilson, and President—7.

Nays—Messrs. Crosby and Dudley—2.

So the resolution was adopted.

[D.]

Record, pages 78-9.

FRIDAY, MAY 12, 1871.

On motion of Mr. Dawson, the Board proceeded to consider the bids on stone.

Mr. Crosby offered the following resolutions:

Resolved, That bid 35, made by Messrs. Tuttle & Robertson, Des Moines, in so far as it proposes to furnish dimension stone from sixteen to eighteen inches in thickness from Bear Creek quarry, at \$10.25 per cubic yard, as per sample No. 3, by them furnished, be accepted; *provided*, that said Tuttle & Robertson agree to furnish any from 13 to 24 inches from said quarry, in such quantities as may be ordered by the Board, at the same price; and for so much block rubble from "Tuttle's Quarry," as per samples 1 and 2, also furnished by them, as may be ordered by this Board, at the price of \$5.75 per cubic yard, and that the President of this Board enter into a contract accordingly.

2. *Resolved*, That the bid of O. H. P. Scott, numbered "seven," proposing to furnish dimension stone from 10 to 24 inches in thickness, from the Belfast quarry of W. S. Sample, in Lee county, as per samples furnished at \$13.50 per cubic yard, to the extent of such dimensions and quantities as may be determined by this Board, which shall be not less than — yards, be accepted, and that the President of this Board enter into a contract accordingly.

On the adoption of the first resolution, Mr Dewey demanded the yeas and nays, which were as follows:

Yeas—Messrs. Crosby, Dawson, Dudley, Joy, Stein, and President—6.

Nays—Mr. Dewey—1.

On motion of Mr. Crosby, the blank in the second resolution was filled with "not less than 300 yards."

The yeas and nays being demanded on the passage of the second resolution, they were as follows:

Yeas—Messrs. Crosby, Dawson, Dudley, Dewey, and President—5.

Nays—Messrs. Joy and Stein—2.

So the resolution was adopted.

[L.]

Record, page 85.

WEDNESDAY, May 31, 1871, 11 o'clock, A. M.

Board met pursuant to adjournment. Present:

Samuel Merrill, President, James F. Wilson, James Dawson, S. G. Stein, J. O. Crosby, Charles Dudley, J. N. Dewey, Wm. L. Joy.

On motion of Mr. Dewey, the Board proceeded to consider the question of selecting a Superintendent of Construction.

On motion of Gov. Merrill, the Board proceeded to ballot, with the following result:

FIRST BALLOT.

R. S. Finkbine, 2; James Appleyard, 3; Henry Winslow, 1; Wm. Foster, 1; J. C. Farrand, 1.

SIXTEENTH BALLOT.

Appleyard, 3; Finkbine, 3; Perkins, 1; and Winslow, 1.

There still being no choice for Superintendent, Mr. Wilson moved to postpone to the next regular meeting of the Board, on the third Wednesday, of this month. Motion prevailed.

THURSDAY, June 22, 1871.

Members of the Board present:

Samuel Merrill, S. G. Stein, Charles Dudley, J. N. Dewey, Wm. L. Joy, James Dawson.

On motion of Mr. Joy, the Board proceeded to take up the matter of selecting a Superintendent.

Mr. Stein moved to proceed to vote by ballot.

Mr. Dewey moved to amend by striking out the words "by ballot," and inserting "*viva voce*." Mr. Stein accepted the amendment and the motion prevailed.

Mr. Dewey nominated R. S. Finkbine, of Iowa City.

Mr. Stein nominated James Appleyard, of Detroit, Mich.

The following members voted for Mr. Finkbine, to-wit: Messrs. Dudley and Dewey—2.

The following members voted for Mr. Appleyard, to-wit: Messrs. Dawson, Stein, Joy, and President—4.

Mr. Appleyard having a majority of all votes given, was declared duly elected Superintendent.

[E.]

Record, page 96-7.

FRIDAY, July 21, 1871.

To the Board of Capitol Commissioners:

GENTLEMEN: In accordance with a resolution of this date, requiring us to report, or furnish you with the requirements of the kinds and qualities, and the times of delivery of stone given to Messrs. Tuttle & Robertson under their contract to furnish stone, dated the 12th day of May, 1871, and also a copy of the written notice served on them, on their failure so to deliver; and the date of such service, we would state that we have given them notice verbally (shortly after

they had partially opened their quarry) of the thickness we would accept, within the contract, endeavoring to suit our plans to accommodate the stone in the quarry. The thicknesses are as follows: 22-18-17-16-15-13 inches. We gave them no diagram requiring them to furnish the stone with a specified bed, but told them instead that we would use any and all reasonable sizes; but that the stone as a general thing, should not be less than three feet long, and from that to six feet, not less than two feet bed, and from that to four feet; and for the footings not less than three to four feet.

On Friday, the 30th day of June, and on several other occasions, we informed Messrs. Tuttle & Robertson, or one of them, that we could not receive the stone they were delivering, owing to the shape of them; and we were requested to receive them, and do the best we could with them, and to charge them what we thought was just for the extra cutting required on them, and to set aside such as would not be suitable for the work, and to allow what in our judgment they were worth.

We were informed by Mr. Dawson, Chairman of the Executive Committee, that Mr. Robertson had made the same request to him, and we received the stone on those conditions.

[Signed]

COCHRANE & PIQUENARD,
Architects and Superintendents.

[I.]

Record, page 99.]

FRIDAY, July 21, 1871.

Mr. Crosby offered the following resolution, which, on motion Mr. Dudley, was adopted:

Resolved, That our Architect and Superintendent be instructed in measuring stone delivered by Messrs. Tuttle & Robertson to make a record of their class—

1. Those within the specification.

2. Those that are not within the specifications by reason of not being scabbled and dressed down within two inches of the specified size; and called "Class C."

3. Those not within the specifications, nor that can be conveniently scabbled to within the specifications, and called Class "Rejected;" and yet that may be made useful, and work well into he wall.

4. Such as cannot be economically used shall be marked "O," and not unloaded.

Such as come within the *Second* Class shall be brought within the specified sizes, and the cost of scabbling charged back to the contractors.

Such as come within the *Third* Class may, in the discretion of the Architect and Superintendent, be dressed, and such measurement be allowed and marked thereon as will make the stone, when laid in the wall, count only at its actual value, taking as a basis, \$10.25 per yard for stone within the specifications.

[L.]

Record, page 100.]

FRIDAY, July 21, 1871.

The following communication, from Mr. Appleyard, was presented and read:

DES MOINES, July 21, 1871.

To the Honorable, the State House Commissioners,

GENTLEMEN:—Owing to my having to leave home on so short notice, I left my business in a very unsettled condition. Therefore, I would respectfully ask to be relieved for a few days, to attend to some matters which need my personal attention.

Yours, etc.,

JAMES APLEYARD."

Mr. Dudley moved that Mr. Appleyard be granted leave of absence till December 1st.

Mr. Dawson moved to amend as follows:—"That the request of Mr. Appleyard be granted," and on this demanded the yeas and nays, which were as follows:

Yeas—Messrs. Dawson, Stein, and Joy—3.

Nays—Messrs. Crosby and Dudley—2.

So the amendment prevailed.

Mr. Crosby moved to amend by adding the words: "and that in the meantime his salary be stopped," and on this the yeas and nays were demanded, which were as follows:

Yeas—Messrs. Dudley, Crosby, Joy, and Stein—4.

Nays—none [Mr Dawson not voting.]

The question being on the original motion, as amended, Mr. Dawson demanded the yeas and nays, which were as follows:

Yeas—Messrs. Dawson, Crosby, Joy, and Stein—4.

Nays—Mr. Dudley—1.

[F.]

FRIDAY, Aug. 4, 1871.

Record, page 106.]

Mr. Stein offered the following resolution, which was adopted:

Resolved, That this Board endorse the action of the Executive Committee in advising Mr. Appleyard, the Local Superintendent, to notify Messrs. Tuttle & Roberts: that no more stone could be received that did not strictly conform with the quality, etc., specified in the contract.

[G.]

Record, page 108.]

WEDNESDAY, Aug. 16, 1871.

Mr. Dudley offered the following resolution which was adopted

Resolved—By the Board that all stone that Messrs. Tuttle & Robertson may furnish from the Rock Creek quarries equal to samples presented by Peter Tobie, conforming to the specifications in their contracts be accepted, in place of stone from said Tuttle & Robertson's Bear Creek quarries; but this resolution is not in any manner to change the liability of said Tuttle & Robertson, under their said contract, and shall have no effect unless said Tuttle & Robertson agree to this condition in writing.

Endorsed on the back of the foregoing resolution, which is on file in the office of the Secretary of the Board of Commissioners, is the following acceptance:

"We hereby accept and agree to the conditions and requirements of the within resolution, this 16th day of August, 1871.

TUTTLE & ROBERTSON.

[H.]

Record, page 112.]

THURSDAY, Aug. 17, 1871.

EVENING SESSION.

Mr. Wilson offered the following resolution, which was adopted:

Resolved, That the Superintendent be instructed not to put into the foundation of the Capitol building any stone defective by reason of seams, cracks, or other defects within the description of stone required to be delivered by the contract for said foundation, and remove such as are already laid as do not conform with this resolution.

[M.]

Record, page 113.

SEPTEMBER 20, 1871.

Mr. Dewey offered the following resolution, which was adopted:

Resolved, That the Executive Committee be requested to report to this Board in writing whether the contractors for furnishing dimension stone for the foundation have been, or are now, delivering stone, as to *quality* and *quantity*, in accordance with the specifications and contract entered into by them on the 12th of May last, and, if not, wherein there is, or has been, any failure, and what means have been taken, or they would recommend should be taken, to properly enforce the said contracts.

AFTERNOON SESSION.

Mr. Stein offered the following resolution:

Resolved, That the Local Superintendent be, and is hereby instructed not to receive hereafter any stone from the contractors except such as shall strictly conform to the specifications and dimensions furnished by the architect, as well as in the quality called for in the contract.

Mr. Dewey moved to amend the resolution by adding the following:

"And that the resolution of Mr. Crosby of the 21st of July, classifying stone, and authorizing the acceptance of stone not coming within the specifications, be, and the same is hereby rescinded."

Amendment adopted.

Mr. Crosby offered the following farther amendment to Mr. Steins' resolution, to-wit:

"*Provided*, This resolution shall not take effect until forty-eight hours after the parties procuring the stone shall have notice thereof."

Amendment adopted.

Resolution as amended adopted.

[K.]

Record, page 116.]

WEDNESDAY, Sept. 20, 1871.

REPORT.

The Executive Committee would submit the following report, in compliance with the following resolution :

Resolved, That the Executive Committee be requested to report to the Board in writing, whether the contractors for furnishing dimension stone for the foundation of the new Capitol have been, or are now, delivering stone, as to *quality* and *quantity*, in accordance with the specifications and contract entered into by them on the 12th of May last, and, if not, wherein there is, or has been, any failure, and what means have been taken, or they would recommend should be taken, to enforce the contract.

1. Your Committee would say that the contractors are not, and have not (in the opinion of the Executive Committee) been delivering stone in accordance with the contract and specifications, either as regards *quantity*, *quality*, or *dimension*, which fact is, and has been well known to this Board.

2. As to failure on the part of the contractors to deliver in such quantities as required, it is partly owing to Bear Creek quarry failing to produce as expected, and having to be abandoned and a new quarry opened, which, of course, caused considerable detention. There is now a prospect of stone being delivered some faster, but not as fast as wanted.

3. As to what means should be used to enforce the contract, your Committee would recommend that no stone be received except such as are strictly in accordance with the contract and specifications, but as the facts are all before the Board, and have been, they can easily judge of the best course to pursue.

As to the future prospects of stone being delivered by the contractors—Rock Creek quarry opens promising a good yield of dimension stone. At the same time, we are of opinion that while

there is very good stone being got out at Rock Creek quarry, yet there is being sent from that quarry stone that are not good, and we think they should be carefully selected. The stone being delivered from Earham quarry are of a very good quality, and are some of them deficient in dimension. The only reason we give for not purchasing stone elsewhere is, that we believed the stone would come faster from Rock Creek and Earham than they have.

JAMES DAWSON,
Chairman Executive Committee.

[A.]

Letter Book, page 40.]

[COPY]

DES MOINES, Sept. 22, 1871.

MESSRS. TUTTLE & ROBERTSON :

GENTLEMEN : Enclosed, please find a resolution passed by the Board of Capitol Commissioners, compelling us to reject all stone except those that conform strictly to the specifications and contracts, all resolutions conflicting with the same, having been rescinded. We shall therefore not unload any stone from the cars that do not conform strictly to the specifications, and Mr. Appleyard the Local Superintendent, has received his instructions accordingly.

Yours, etc.,

COCHRANE & PIQUENARD,
Architects & Supts.

[A.]

Letter Book, page 44.

[COPY.]

DES MOINES, Sept. 22, 1871.

JAMES APPELYARD, ESQ.:

Local Superintendent of Capitol:

DEAR SIR: By a resolution passed by the Beard of Capitol Commissioners, we are instructed not to receive any more stone from Messrs. Tuttle & Robertson, except such as conform to the specifications and contracts as to size and shape. And the quality to be equal to the sample in Commissioner's office. You will adhere strictly to the resolution, specification and contract, and reject all stone that does not conform to the specifications, etc., and not unload the same from the cars.

The corner stone is to be laid on the 16th day of November, at the south-west corner of the building, you will therefore prepare the wall for the same

Yours, etc.

COCHRANE & PIQUENARD,
Architects & Supts.

Letter Book, page 77.

NEW STATE HOUSE, DES MOINES, Nov. 21, 1871.

MESSRS. TUTTLE & ROBERISON:

GENTLEMEN: You will have to stop quarrying the blue ledge of rock, as they are all splitting to pieces, with the frost, and some fifteen or twenty went to pieces last night. Not any of the yellow ones that I have noticed, have been affected by the frost. You had better

not quarry any more of the blue rock until the weather moderates. I cannot receive them. Those that came here on Saturday last, are the ones that have split the worst. Come up and see them, if convenient.

Yours, etc.

J. APPELYARD.

STATEMENT

Showing the Amount paid to the Capitol Commissioners for per diem and expenses out of the General Revenue Fund.

COMMISSIONERS.	Per Diem.	Expenses.	Total.
G. M. Dodge	\$ 95 00	\$ 73 00	\$ 168 00
James F. Wilson.....	115 00	61 50	176 50
James Dawson.....	535 00	703 65	1238 65
S. G. Stein.....	405 00	380 00	785 00
J. O. Crosby.....	410 00	605 70	1015 70
Charles Dudley.....	490 00	311 85	801 85
J. N. Dewey.....	250 00	525 00	775 00
Wm. L. Joy.....	205 00	581 20	786 20
Samuel Merrill.....	145 95	145 95
A. R. Fulton (Sec'y).....	6 00	6 00
	\$2505 00	\$3393 85	\$5898 85

STATEMENT

Of Per Diem and Expenses of Capitol Commissioners paid out of the Appropriation for New State Capitol, up to March 15th, 1872.

COMMISSIONERS.	Per Diem.	Expenses	Total.
G. M. Dodge.....	\$ 90 00	\$ 56 50	\$ 146 50
James F. Wilson.....	135 00	64 50	199 50
James Dawson.....	940 00	546 25	1486 25
S. G. Stein.....	290 00	157 80	447 80
J. O. Crosby.....	345 00	354 50	699 50
Charles Dudley.....	690 00	169 00	859 00
J. N. Dewey.....	70 00	50	70 50
Wm. L. Joy.....	175 00	260 15	435 15
	\$2785 00	\$1609 20	\$4344 20

The above includes the following amounts paid Executive Committee, as per diem and expenses:

COMMITTEE.	Per Diem.	Expenses.	Total.
James Dawson.....	\$620 00	\$204 05	\$824 50
Chas. Dudley.....	460 00	98 40	558 40
S. G. Stein.....	65 00	0 05	95 05
	\$1145 00	\$332 50	\$1477 05

Amount paid Cochrane & Piquenard Architects, as salary from Oct. 25th, 1870, to March 25th 1872—
seventeen months at \$ 300 per month..... \$ 5100 00

Amount paid Cochrane & Piquenard on account of expense of plans as per vouchers filed by them..... 2163 36

Amount paid Cochrane & Piquenard, (Voucher No 62, for Traveling Expenses,..... 60 25

Amount paid James Appleyard Local Superintendent for services from June 27th to Nov. 27, 1871,.....	\$ 1885 39
Amount paid for Engineering services,.....	284 20
Amount paid Gustave Hinrichs for chemical tests,...	300 00
Cost of preparing sample for Chemist,.....	174 00
Total cost of Cistern,.....	1497 87
Cost of Right of Way for R. R.....	2952 81
Total cost of constructing R. R.....	3401 14
Cost of Advertising.....	533 00
Cost of Printing & Stationery.....	813 40
Amount paid for Photographing Plans.....	475 35
Amount paid for Telegraphing.....	69 80

Paid for Stone as follows:

Tuttle & Robertson	26190 25
O. H. P. Scott.....	6787 30
F. C. Mathes & Bro., Pella	2590 80
C. L. Smith, Pella.....	218 36
Daniel Armstrong (15 per cent retained,) Granite...	889 44

\$36676 15

The following are the quantities of Stone delivered by the several contractors, and accepted by the Board:

	c. yds.	c. ft.
By Tuttle & Robertson.....	2593	14 -9''
By O. H. P. Scott.....	502	21 -9''
By F. C. Mathes & Bro.....	191	25 -0''
By C. L. Smith, Pella	20	14 -2''
Total	3307	21 -8''

Also received from Daniel Armstrong of Independence, 1046-5''c. feet of Granite at \$1.00 per cubic foot.

The average price paid laborers per day, about.....	\$ 1 65
The average price paid foremen, about.....	3 85