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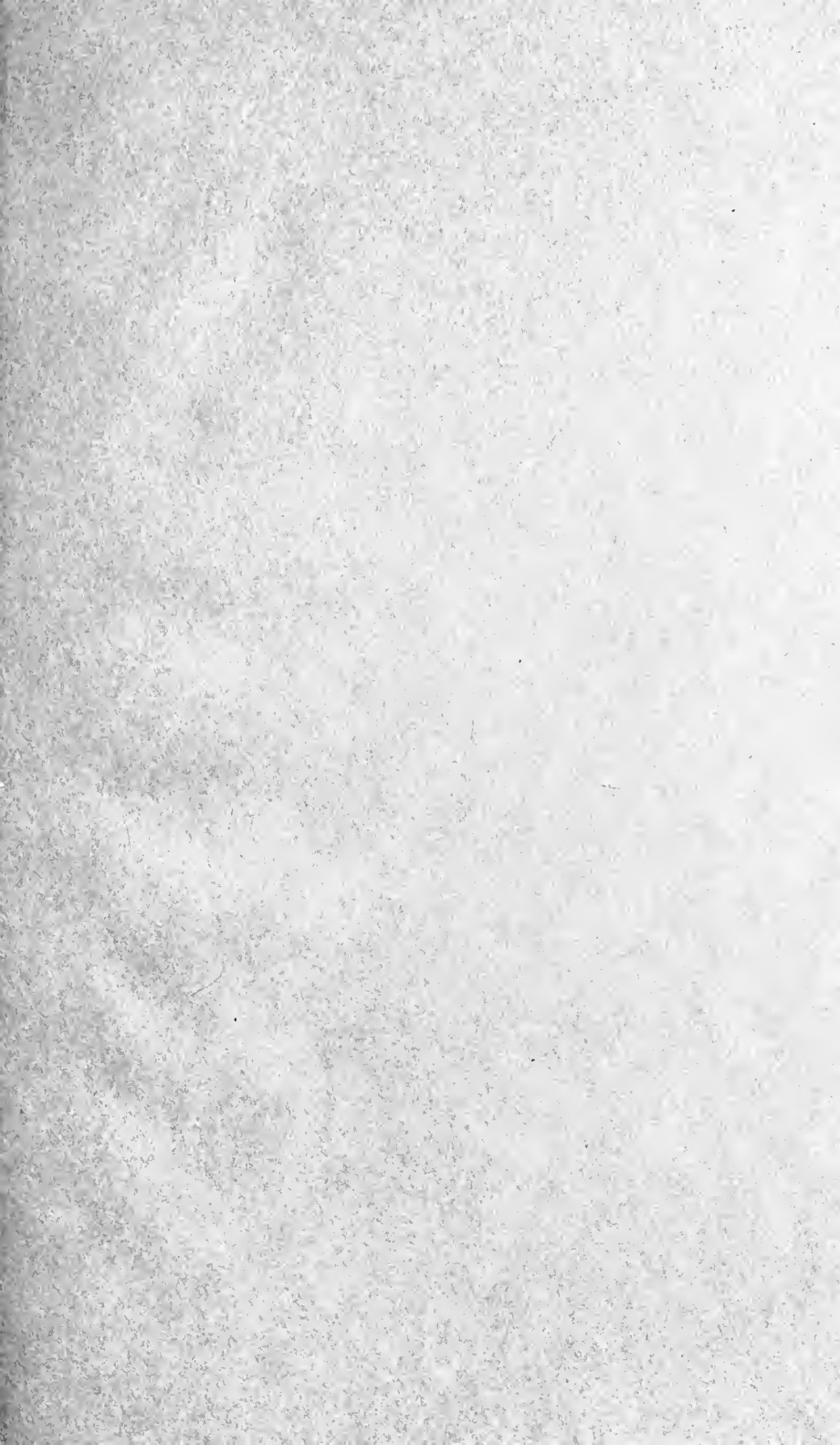
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Minority Report

Louisiana . Legislature . House of Representatives  
OF THE

COMMITTEE ON AGRICULTURE,

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RECOMMENDING A GEOLOGICAL SURVEY OF THE STATE,

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WITH A BILL FOR THAT PURPOSE.

*prepared by the com<sup>tee</sup> of the H. of Reps., etc.*

*X In Geological Survey  
Department*

BATON ROUGE:

J. M. TAYLOR, STATE PRINTER.

1858.

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# Minority Report

*Louisiana*

OF THE

COMMITTEE ON AGRICULTURE,

RECOMMENDING A GEOLOGICAL SURVEY OF THE STATE,

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## Minority Report

OF THE

# COMMITTEE ON AGRICULTURE,

RECOMMENDING A GEOLOGICAL SURVEY OF THE STATE, WITH A  
BILL FOR THAT PURPOSE.

*To the Honorable W. W. Pugh,*

*Speaker of the House of Representatives :*

THE undersigned, members of the Agricultural Committee of the House, to which was referred the Resolution offered February 15th, by the Hon. J. T. Hawkins, to procure a Geological Survey of the State of Louisiana, beg leave to offer a Minority Report :

That, considering the future and the permanent prosperity of the State of Louisiana, it is eminently desirable to have a systematic and thorough exploration and survey of the State territory, in reference to its mineral and agricultural resources, its botanical and zoological productions, and its sanitary conditions and capabilities.

Louisiana stands almost alone among her sister States in respect to these important matters. Other States, old and new, have prosecuted such surveys with considerable energy, and are now profiting by the knowledge of local resources thus developed.\*

Such surveys are preëminently American enterprises; for they were first devised and executed in our own country nearly thirty

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\* Report of New Orleans Academy of Sciences, February 4th, 1856, published by order of the Legislature.

years ago. Commencing with a survey of the counties of Albany and Rensselaer, New York, and of the region of the great Erie Canal—all undertaken at the personal cost of Stephen Van Rensselaer—and thence extending to North Carolina (which first set the example of a State survey), they have, in turn, spread to nearly every State, to many of our Territories, to the British-American provinces, and to various countries of Europe; in which quarter of the globe the earliest survey was undertaken thirteen years subsequently to those of the counties named in New York, and to North Carolina.\* Arkansas has just secured the services of David Dale Owen, who, on the part of the United States Government, surveyed Wisconsin, Iowa, Minnesota, and part of Nebraska. An Act, authorizing such a survey, has just been passed by the present Legislature of Texas. The Eastern, the Northern, the Middle, and the Western States, it is understood, have completed or have authorized surveys—not excepting the youngest in the Confederacy. Of the Southern States, Louisiana is believed to be the only one which has neglected such a work, with the possible exception of Florida, of which nothing has been learned by your Committee.

The Legislature of Louisiana, in 1841, caused some cursory investigations of a geological nature to be made by Messrs. Carpenter, Trastour, and Forshey. Those gentlemen made reports which were never printed, and which are not known to <sup>be</sup> ~~any~~ <sup>at</sup> extent at the present time; having probably been lost while in the keeping of Mr. D. E. St. Romes, then the State Printer.†

For many years past, the devotees of science, and other men of intelligence, have advocated a geological and scientific survey as a measure preëminently calculated, not only to assist in creating among our citizens a taste for the useful, and the elevating pursuits of true knowledge, but also of enriching the State by developing unknown resources which will, an hundred fold, repay the most liberal expendi-

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\* The order of the earlier surveys, as given by President Ed. Hitchcock at the inauguration of the New York State Geological Hall, August, 1856, was as follows: "Albany and Rensselaer counties, 1820; North Carolina, latter part of 1820; Region of Erie Canal, 1823; South Carolina, 1828; Massachusetts Trigonometrical and Geol., 1830; Tennessee, Maryland, New Jersey, New York, Canada, Nova Scotia, New Brunswick, and European surveys, all were subsequent. New York began in 1836, and is yet in progress."

† Rep. of N. O. Acad. Sci., 1856.

ture. On the 14th February, 1856, this House, on motion of Hon. Wm. A. Gordon, adopted the following resolution :

“*Resolved*, That the Committee on Internal Improvements be required to take into consideration the propriety of causing a general geological survey of the State of Louisiana to be made, and that they call upon the New Orleans Academy of Science for a report upon that subject.”—See *Journal of House of Reps.*, 1856, p. 29.

On the 27th of February, Hon. P. C. Wright, Chairman of that Committee, “presented a memorial, in the shape of a Report of the Special Committee of the New Orleans Academy of Sciences, on the importance of a geological survey of the State of Louisiana, which was referred to the Committee on Internal Improvements.” (*Ibid*, p. 53). The report was accepted, and printed by order of the Legislature ; and it is to be found in the volume of official documents for the year 1856 ; but it is not known that anything further has been done to the present time. The New Orleans Academy of Sciences unanimously declared in favor of a “systematic and thorough exploration and survey of the State territory, in reference to its mineral and agricultural resources, its botanical and geological productions, and its sanitary conditions and capabilities ;” and they ventured “to predict that the benefits resulting from it would far outweigh its pecuniary cost.” The State Engineer, in a Special Report, dated January 31st, 1857, and again, in his Annual Report for the present year, has ably and eloquently recommended such a survey. In the latter communication, he says, “I have before called the attention of the Legislature to a survey of the State. Accurate surveys should be the basis of all our works, and a survey of the State should have been the first of our labors for the establishment of a system of internal improvements. I do not choose to give my views again on the subject of a survey of the State. I will content myself with respectfully referring to my Special Report of January 31st, 1857, ‘On a system of internal improvement.’ I wish, however, to add something to the views expressed in the said report, upon one subject ; namely, geology. The idea has been current that, because we have no large mountains, caves, mines, etc., etc., that we *know all* about Louisiana, and that we therefore need no geological examination or survey. The idea is erroneous, and *we do not know our country*. There are millions of facts of which we are in entire ignorance. Were these

facts known, our State might prove to contain such riches as we never dreamed of. Again, those facts would, beyond a doubt, give us such information as would furnish us with the only correct data required for the direction of many of our works. I could amplify upon the subject, and cite several known facts as indications of what might be discovered by the geologist; but my report is now lengthy, and I will drop the matter with the recommendation that your Honorable bodies provide for a geological survey of the State. I do not say, *make now a heavy appropriation for this survey, but I do say, organize the Geological Department; authorize the Governor to appoint a competent geologist as the head of the department, and make an appropriation of such a sum as will suffice to perform the work for one year.* This will be the beginning, and the Legislature, at every session hereafter, will provide the further means necessary for the annual expenditures. By reference to the documents of former Legislatures, it will be seen that I cannot claim to have originated the plan of a geological survey of our State. I do not entertain such a claim; and I trust that those who have spoken and petitioned before me, will believe that they will join with me in new efforts to cause the system to be established."

(Signed,)

LOUIS HEBERT,  
State Engineer.

BATON ROUGE, January 1, 1858.

The proposed measure is demanded by the intelligence of the age. The community is prepared for it, and expect it at our hands; and it is believed that they will sustain the Legislature, even to the extent of levying a special tax, should that be found necessary, for the support of an enterprise so certain as a geological survey to enhance the wealth of the State and the intelligence and happiness of her children.

Encouraged by the examples of other States, and by the express invitation of the previous Legislature, the New Orleans Academy of Sciences, during the session of 1857, addressed a letter to the Chairman of the Committee on Internal Improvements, requesting that the subject of a survey should be revived, and some decisive measures adopted for carrying it into effect; but they were informed that just previously to their communication the House had adopted a resolution against the reception of any new bills after a certain date, which

resolution defeated the wishes of the Academy for that session. Within the past few days the Academy (which, it is understood by your committee, was created for the sole purpose of increasing and diffusing knowledge and of elevating the scientific character of the State) have placed at the disposal of your committee copies of a new Report of a special committee of their body, which was unanimously adopted February 1st, 1858, with the view of bringing the matter before the Legislature of the State at the commencement of the present session. This Report they have printed at their private cost, and forwarded by a special delegate from their own body, who is authorized to declare that the Academy neither seeks nor will accept any management or control of the survey, in its corporate capacity. In their present Report they repeat the language adopted in their former one: "That a geological and scientific survey of the State of Louisiana is, under all the circumstances, much to be desired; that it should be judiciously and not too hastily prosecuted; and that an annual outlay of ten or fifteen thousand dollars, exclusive of the cost of printing an annual report of the progress of the work, would probably be found sufficient." They estimate "that in about ten years from its commencement, the final report might be ready for publication. Should such a survey be judiciously organized and steadily prosecuted," they "predict that the benefits resulting from it will greatly outweigh its pecuniary cost." For many of the facts and conclusions herewith presented, we take this occasion to acknowledge our indebtedness to the Academy's new Report.

The President of the British Association for the Advancement of Science, in his inaugural address, delivered at Cheltenham, August 6th, 1856, said: "It begins to be generally felt that amongst the faculties of the mind, upon the development of which in youth success in after life mainly depends, there are some which are best improved through the cultivation of the physical sciences, and that the rudiments of those sciences are most easily acquired at an early period of life. That power of minute observation—those habits of method and arrangement—that aptitude for patient and laborious inquiry—that tact and sagacity in deducing inferences from evidence short of demonstration, which the natural sciences more particularly promote, are the fruits of early education, and acquired with difficulty at a later period. I look forward to the day when the requirements

in the department of physical science will become so general and so pressing that no institution will venture to risk its reputation by declining to admit those branches of study into its educational courses."—Quoted in the *Canadian Journal of Industry, Science and Art*, January, 1857.

#### GEOLOGICAL FORMATIONS.

"From the most authentic information at present obtainable, it is inferred that this State offers no great diversity of geological formations. Most of the State is of recent alluvion. The north and north-western portions exhibit tertiary, and possibly older formations—the tertiary characterized by points of great interest. Our alluvion—which is mostly the creation of the great Mississippi, produced, in part, under our own eyes—offers a grand exemplification of geological dynamics, deserving of profound study."

#### MINERALS.

"As to our useful minerals, there is reason to believe that iron ore of great value is to be found; and that the north-western parishes abound in gypsum, which is valued as a cement in the arts and in building, and as a fertilizer in agriculture; also in common salt, which is generally associated with gypsum."

It is within the personal knowledge of a member of this Committee, that salt is now manufactured, to a limited extent, in the Parish of Claiborne, from saline springs of great purity and richness; while, from the communications which have recently appeared in the New Orleans newspapers, arguments are derived which encourage a reasonable expectation of unusual facilities, on our sea-coast, for the manufacture of salt by the solar evaporation of sea-water, as practised with great success in France and Italy.

#### SOILS.

For several years past, a survey has been in progress in the State of Mississippi. The latest Report of that survey by the State Geologist, Mr. L. Harper, was published in March, 1857, and has been submitted to your Committee.

Nothing can exceed the interest, to us, of a knowledge of the geology of that State; for her geographical and topographical peculiarities are strikingly similar to those which distinguish Louisiana;

and the discoveries made there are almost certain to be repeated here. Both the States are almost exclusively agricultural, and are distinguished for lands of such fertility as can scarcely be paralleled in either hemisphere. But our agriculture is of the most wasteful character. We perpetually repeat the same crop, until the soil is exhausted of some indispensable ingredient; and then we abandon it for newer fields. "Our own State, in reference to its fertility, is confessedly the Egypt of the New World; but, rich and deep as is most of our soil, it nevertheless becomes gradually exhausted of potassa and the phosphates, by repeated cereal crops; and it hence behooves us to cast about, in good time, for the most economical means of preventing such a result. The thorough investigation of the nature and composition of all our prominent and prevalent varieties of soil, implied in the prosecution of a scientific survey, could not fail to be of the greatest value. We should thus be put in possession of all the important facts and data necessary to the advancement of our agriculture. Our planters could economically prevent the deterioration of the cultivated soil, whatever crops should be raised; and since chemical analyses have shown that each species of plants appropriates, while growing, certain special kinds of mineral matters, the analysis of the soil would indicate the adaptability of certain soils to any particular crop. It is not improbable that the shores of many of our unfrequented bays and inlets from the Gulf will be found to yield a guano-like substance, rich in phosphate of lime. This can only be determined by exploration and chemical analysis. Should such conjecture be found correct, its value for fertilizing the fields devoted to the raising of human food, would transcend all moderate calculation."

There is one aspect in which chemical analysis of soils would possess here a value unknown elsewhere: namely, here the extent of soils which are identical would make a few analyses suffice for vast regions; whereas, in more northern States, a separate analysis would be required for nearly every field.

#### M A R L .

"We possess numberless beds of shell-marl, more or less useful in agriculture; but whether we have marl-beds rich in phosphates or potassa (two of the most important ingredients of good soil for producing cereals and fruits), we are unable to say. The investigation

of this matter alone is of vast importance to our future well-being as a prosperous State." In our peculiar climate, it is practicably impossible to produce or import artificial manures, by reason of their costliness. The discovery, therefore, of natural fertilizers under our very feet, which are competent to restore both our poor and our exhausted lands, is of more importance to us than the gold mines of California. In Mississippi, such discoveries have been made, surpassing, in quality and extent, any others in the world. Commencing in the south-east part of Mississippi, near the State line of Alabama, a broad belt of shell-marl extends, in a north-west course, quite across the State, to the mouth of the Yazoo River. It underlies more than two thousand square miles, and varies in thickness from a few inches to one hundred feet. It is found not only in the extreme northern counties, but also, where it is most needed, among the nearly worthless lands in the vicinity of the gulf coast [*Harper's Geol. Rep.*, p. 16, 17]. A better fertilizer does not exist. It will continue, through ten years, to produce effects which, in the case of guano, are merely limited to one year.

#### GREEN SAND.

Green sand, containing silica, alumina, protoxyde of iron, lime, magnesia, and potassa, is found in many diversified localities in Mississippi, and is perfectly adapted to heavy clay lands, whether post-oak or prairie soil. It is certain to be discovered in Louisiana.

#### COAL.

A species of mineral coal, called lignite, or brown coal, exists in great abundance in the counties of Lauderdale, Claiborne, Warren, Franklin, Hinds, Rankin, and Yazoo [*Harper*, p. 168]. A peculiarity which is characteristic of the southern lignite, consists in its saturation with a resinous substance resembling amber, which renders it invaluable for all purposes as fuel. From its first discovery in Scotland, it received the name of torbain-hill mineral and big-head coal. It was employed, on one occasion, for furnishing gas to light the Queen's palace at Windsor, and with gratifying results; but it is now considered, in England, too valuable in the arts to be consumed as fuel. Its most extraordinary deposit has recently been found in Arkansas, on the Ouachita River, immediately adjacent to



the northern line of Louisiana. The following comparative analysis of five different specimens of coal, will exhibit the value of the southern lignite. In one hundred parts of

|                       | Volatile<br>Comb'ible<br>Matters. | Fixed<br>Carbon. | Ashes. | Name of Chemist.       |
|-----------------------|-----------------------------------|------------------|--------|------------------------|
| Pittsburg coal.....   | 32.95                             | 64.72            | 2.31   | Prof. B. Silliman, Jr. |
| Breckenridge.....     | 60.41                             | 28.89            | 10.70  | Prof. J. R. Chilton.   |
| Kanawha.....          | 41.85                             | 55.55            | 2.60   |                        |
| Picton, Nova Scotia.  | 26.76                             | 60.73            | 12.51  |                        |
| Southern lignite..... | 59.00                             | 32.70            | 8.30   | Prof. J. L. Riddell.   |

[See H. C. Morris' "*Papers relating to Ouachita Coal-field*," 1857, p. 7.]

The Arkansas bed of lignite is reported to be fifty miles in length, fifteen miles in breadth, of an average thickness of five feet, and accessible to boats at all seasons. It burns with a clear flame and very little smoke, until the volatile portion is consumed, and the whole mass then remains incandescent until it is resolved into a small portion of reddish ashes, which seem destitute of grittiness. It is stated to be superior to Pittsburg coal for producing gas, and the other precious products obtainable from it (such as kerosene, paraffine, naphtha, benzole, and other hydro-carbons), will open new resources for manufactures. Its power of generating steam has been tried on a large scale, and is declared to be "equal to Pittsburg coal, pound for pound." Mr. Harper says, "This lignite is useful, not only for the purposes named, but, when pulverized, by exposure to the air and sun, or by mechanical means, it makes an excellent manure, specially adapted to the soil of those counties in Mississippi where it is most valuable and most abundant. From eight to ten wagon-loads applied to the acre have proved effective for a term of six or eight years." [Harper, p. 304, 305.] It is not doubted that portions of this Ouachita bed of lignite will be discovered in Louisiana. In one of the northern parishes of our State, similar lignite has been taken from the bed of a stream, and used by a blacksmith with satisfactory results. This fact has been communicated to the Committee by one of its own members. The development of such an inexhaustible supply of fuel would, in itself, repay the pecuniary cost of surveying many States such as Louisiana. It is truly to be regarded as a reproach that,

thus far, we have been indebted to mere accident for discoveries which should have been the rewards of enlightened forecast and careful investigation.

CLAY AND KAÖLIN.

The Mississippi survey has discovered the existence of a fine green clay, in three different localities in Wayne County, which is perfectly plastic, dries with scarce any cracking, becomes hard and susceptible of a fine polish, and is entirely refractory in every fire to which it has been possible to subject it. Its color is probably due to a minute portion of silicate of iron. It is adapted to the making of fire-bricks, fine pottery, and the modeling of statuary. A clay still finer, perfectly infusible, and adapted to the manufacture of very good porcelain, is found in the same county. In Wilkinson County, adjoining our parish of West Feliciana, exists excellent plastic clay for pottery and for fire-bricks. In Tippah and Adams Counties, the manufacture of the finer kinds of pottery has already been commenced. [*Harper*, p. 169.] The State Geologist seriously recommends the manufacture of fire-bricks in Wayne County, for exportation to Mobile and New Orleans, even by railroad, as a remunerating enterprise. [p. 307.]

An immense deposit of the purest kaölin—true porcelain clay—has been discovered, by the Mississippi survey, in Tishamingo County, which, in its extent, has not been equalled in America. Kaölin is a chemical compound of silica 47.20 parts, alumina 39.10 parts, and water 13.70 parts in 100 parts: a real hydrated silicate of alumina. It underlies a surface, within Mississippi, of nearly 60 square miles, and extends across the State into Alabama. Pure kaölin is of comparatively rare occurrence, and is chiefly confined to parts of China and of Europe, where its value surpasses that of mines of the precious metals, and its ownership is monopolized by princes. The Mississippi bed is competent to supply the whole world with kaölin for many thousands of years. [*Harper*, p. 64.] The probability of similar treasures in Louisiana, now waiting to reward the enterprise of a survey, does not admit of a doubt. “Within a few weeks, a body of clay has been found in the parish of Catahoula, which, for all uses in the mechanic arts, is pronounced equal to the best Stourbridge clay, so precious for making crucibles and the melting-pots of the glass

manufacturer; and a company of practical workmen is already on the spot, preparing for the manufacture of fire-bricks, for exportation and for domestic consumption. It is the declared expectation of the company to employ, as their permanent source of fuel, the Ouachita lignite already described as lying in their vicinity. No argument can be necessary to enlighten the sugar-planters of Louisiana as to their interest in this matter.

#### BUILDING STONE.

“It is not certain that we possess valuable building materials, in the form of quarries of stone, within our State limits; yet some beautiful specimens of variegated marble have been presented to the New Orleans Academy of Sciences, by Newton Richards, Esq., which were found in the parish of St. Landry, and which encourage the hope that it may exist in quantities and of qualities worthy of attention. A geological survey would decide the question.” It would likewise inform us as to the existence of any materials from which we may obtain supplies of lime and hydraulic cement; and thus become independent of the foreign sources from which those indispensable articles are now obtained. Our sand is, perhaps, the purest in the world; and is adapted not only to building purposes, but is the very material required for the manufacture of all kinds of glass.

#### HYDROGRAPHY.

“A complete geological survey would incidentally bring to light much valuable information respecting the topography and hydrography of our enormous but now worthless sea-marsh, and the possibility of its reclamation for agricultural purposes.” Such acquisitions of knowledge, added to the more reliable information which must result as to the best method of controlling crevasses, would point out to Legislators the manner of fulfilling both the letter and the spirit of the Constitution as to the employment of the Swamp Land Fund. “It would, of course, devolve upon the Legislature to decide whether or not the geological and mineralogical exploration contemplated should include, or be prosecuted in connection with, a topographical and hydrographical survey.”

## NATURAL WATERS.

“A thorough investigation should be included in the plan, into the qualities of all our indigenous waters—including rivers, bayous, creeks, lakes, lagoons, wells, and springs, whether yielding ordinary potable fresh water, or water charged with mineral ingredients. To sustain the most desirable tone of good health, human beings require water, not absolutely pure, but containing from one to three parts in ten thousand of the mineral salts of lime, soda, iron, etc. In other parts of the world, great value, as curative means, is deservedly attached to mineral waters. There is reason to suppose that our State is unusually rich in these hygienic resources.” Indeed, members of your Committee have mentioned chalybeate, sulphurous, and other springs, in many parishes of the State, which only need to be properly known, to command a popularity as great as that enjoyed by the celebrated watering-places of the North and of Europe.

## ARTESIAN WELLS.

“By a careful study of the various geological beds of superposed sands, clays, marls, and rocky strata, which occur in the north and north-western portions of this State, and especially by clearly identifying them with their equivalents in Alabama and Mississippi, our theory of artesian wells will become of practical value. In the States named, adjacent to us, geological surveys have been for some time in progress under legislative authority. Before sinking such a well, the depths at which water will be obtained can then be very closely calculated. Now, however, aside from the developments of the well of six hundred and thirty feet in Canal street, New Orleans, all beneath us is literally *terra incognita*.”

## COLLECTION OF SPECIMENS.

“In order to make the results of the proposed scientific survey widely available and permanently useful, the plan should contemplate the collection of several complete sets of specimens of all our rocks, minerals, sands, clays, marls, varieties of soils, and samples of waters. These should be accompanied with labels, specifying the localities whence obtained, the results of exact chemical analysis, and the various economical uses to which they are applicable. In like manner,

there should be collected, and duly preserved and labelled, sets of dried or prepared specimens of all our indigenous flora and fauna, including trees, herbs, grasses, weeds, wild flowers, ferns, algæ, fungi, lichens, mosses, shells, insects, reptiles, fishes, birds, quadrupeds, etc. One of these museums should be kept in the State House, at the seat of government, one at the University of Louisiana, one in the Western State Seminary, one in the New Orleans Academy of Sciences, and one in any such institution as the State may hereafter create in the nature of a normal school, for the education of teachers of her public schools."

#### ENTOMOLOGY.

"Various species of insects often become the dreaded pests of the planter, who is liable to suffer from 'blight,' from 'rust,' from the 'army worm,' and from the thousand organized enemies of his crops; and the study of natural history must furnish him with means whereby their ravages may be arrested or lessened. There is a kind of dynamic or vital equilibrium, or reciprocal balance, among the members of organized nature, by which the excessive prevalence of one race or species is found to depend upon the paucity or the redundance of some other, remotely removed, perhaps, in the scale of being. The agriculturalist, by availing himself of a knowledge of these dependencies, may sometimes almost annihilate a particular race of destructive insects, by encouraging the multiplication of particular species of birds which prey upon them." Children, too, are universally interested with such objects, and pictures of beasts, birds, fishes, insects, and flowers, are ever the most attractive to them. But the course of school training would seem to have been devised with a purpose to make them despise such natural tastes as puerile. It has been well said by the late State Geologist of Vermont, "that a better day is dawning upon our country, and the time is not far distant when instruction in natural history shall occupy its true place, and receive its due share of attention, in all our schools and seminaries of learning. \* \* \* \* \* Let the pupils in our schools be encouraged in collecting, and aided in examining such objects which abound in every neighborhood, and they will, at length, acquire such habits of careful observation and discrimination as will be of incalculable service to them in after life. \* \* \* They will become so

imbued with the *spirit of the naturalist*, that they will go forth from the school-room to their rural occupations prepared to appreciate the manifold workings of that beneficent Providence which so liberally rewards them for all their toil. \* \* \* \* To watch the genial influence of sun and rains; the process of vegetation through all its stages of growth and decay; the transformations and habits of insects and other living creatures, and their relations to the business and the interests of the farmer: such pursuits promote health of body by inducing habits of cheerfulness and mental serenity. They sharpen and invigorate the intellectual powers. They enlarge our views of the divine wisdom and goodness, and awaken continual gratitude to God for the rich provision He has made for our support and happiness here, and for training and fitting us for that *new earth* which we hope to inhabit hereafter." [*Zadock Thompson's Address before the Boston Society of Natural History, June, 1850.*] Such pursuits teach us to find "books in the running brooks, sermons in stones, and good in everything."

#### GRASSES.

"A thorough scientific and practical investigation of our native grasses would be apt to bring to light some species which, by cultivation, might supply the great desideratum of grasses as well adapted for making hay as the *phleum pratense* and other hardy exotics now are in the colder latitudes of New York and New England."

#### FOREIGN PLANTS.

The whole vegetable kingdom (which is now known to embrace more than one hundred thousand distinct species) is comprised in comparatively few great natural groups or families. Those of the same group or family possess many traits in common—flourishing, although even on opposite sides of the earth, in localities not unfrequently similar, as respects the climate and the constituents of the soil in which they grow. The investigation of our flora would give valuable indications as to what foreign plants, useful to man, congeneric with indigenous ones, might be introduced here with a prospect of success.

Louisiana, in all the elements of true greatness, is surpassed by few States in the Union. Her sources of wealth are enormous, yet they are only partially developed. Her liberality is scarcely to be

matched anywhere: witness her encouragement of domestic enterprises, manufactures, and railroads; her asylums for the insane, the deaf, the dumb, and the blind; her Charity Hospital, and her contributions to the support of the orphan and the destitute; her public school encouragement, and her million and a quarter of dollars lavished upon endeavors (we will not say how fruitless) to establish universities, colleges, and medical schools. But in the development of her resources that liberality needs wise direction—such direction as would be imparted by a survey like that which has for many years past been in progress in New York. It is believed that she is able and ready to emulate the examples of other States—to equal the best and surpass many of them. A survey, worthy of the name, will cost, it is true, a considerable sum of money; but it will develop mineral, agricultural, and other resources, which will many-fold repay all the cost; and it will secure great accessions to that “knowledge which is power.” Unlike ordinary State enterprises, (such as the erection of public works, etc.,) which are useless until they are *completed*, every discovery made by a geological survey is an achievement *complete in itself*—valuable for its intrinsic worth, independent of any other discovery that may be lying beyond it; so that if the crippled finances, or the caprice of legislation, or any other cause, shall suspend its prosecution, all the good that has been gained remains as a real, permanent good. A survey of the State of Louisiana, according to all experience elsewhere, will prove a sure, a paying investment; and it will open to the brightening intellects of her youth a field vast as the variety of the Creator’s works, pursuits dignified as human interests and fascinating as romance.

The New York survey—the most brilliant hitherto attempted on this continent—was originally authorized by the unanimous vote of her Legislature. It has produced an increase of her real wealth, and a contribution to the world’s stock of knowledge, never before equalled by any nation within a similar period. It has elevated the American name wherever science is respected. It has given to geology a new nomenclature, the propriety of which has commanded the assent and the adoption both of American and foreign States. It was the testimony of Prof. Agassiz, at the inauguration of the State Geological Hall, at Albany, in August, 1856, and confirmed by Sir William Logan, of the Canadian survey, that “no geologist,

of any country, can henceforth venture to bring before the world his theories until he shall first have consulted the beautiful volumes which comprise its results; and when men of science from Europe reach our shores, their first inquiry is, '*which is the way to Albany, where we may see that State collection of which we have read so much?*'" But the New York survey has produced results much more precious. It has elevated the mental and the moral character of her children. It has awakened an extraordinary desire for education, and an enthusiastic love for their native State, which it is impossible to estimate by any standard not commensurate of the highest interests of the human race.

We cannot doubt that the same precious results will follow a similar work in Louisiana. It is impossible to set bounds to her destiny, if she but wisely administer her resources for the improvement of the beautiful heritage which is entrusted to us for future generations. It is as true this day as when uttered by Solomon—"There is that scattereth, and yet increaseth; and there is that withholdeth more than is meet, but it tendeth to poverty." Let the Legislature of the State of Louisiana authorize a geological survey on a scale that shall be liberal, efficient, and thorough, and the people will justify the necessary expenditure; "Her children [shall] arise up and call her blessed;" even the time-serving politician shall find its advocacy to be the surest road to popular favor; and from other countries shall come such men as Cuvier and Ehrenberg and Agassiz, to cast in their lot with a people youthful, sagacious, and generous, and to identify their fortunes and their fame with the development of a State whose progress is the progress of humanity, and whose enterprises are destined to add lustre to the American name, and to elevate the species.

For the purpose of carrying into effect the objects contemplated in the resolution of Hon. J. T. Hawkins, and in this Minority Report, we offer the accompanying Bill, and recommend its passage; and we respectfully request that this Minority Report, and the Bill accompanying it, be printed for distribution throughout the State.

Respectfully submitted,

E. W. FULLER,  
JESSE WRIGHT.











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