

valley by moderately graduating the sides.—Thus, suppose a small valley, of 20 feet depression: If a slope of 500 feet can be made on each side, the weight of 180,000 lbs. or a trifle more than seven-horse power, which, by the same rule, would be sufficient to carry it nearly to the opposite summit: I say nearly, because a portion of the force would be lost upon the bottom of the descent. But if the ordinary force of the engine, as used on the levels, be added, the whole weight would, without difficulty, be transported across the valley. Much more might be said on this subject; but aware that I am addressing gentlemen of information, who are in the habit of reading, thinking, and calculating for themselves, I shall stop here, as to this point, and proceed to make some further remarks on another branch of the subject.

The expenses of constructing such a Railway as has been described in the preceding observations, would be, nearly as can now be ascertained, as follows: Suppose the preparation and setting the stones for its support to be the same as that of making a common turnpike. The stones might be afforded at a quarry, at about twenty-five cents each, and the iron rails and bolts at about 60 dollars per ton. It would, then, be for 3520 bars of cast iron, of 40 lbs each, averaging with the bolts, which make a part of the rails, say 66 tons, \$3,960
3,520 rough stones, at 25cts each, 880
\$4,840

Now, these may all be delivered on the spot, as fast as required, on the following plan: Let quarries be selected at several points contiguous to the rail-way: on these a man and one or two horses might at first transport the stones as fast as they could be used, and, after the distance had become considerable, steam locomotive engines might be substituted. A balance of iron ore may be found in the whole line of the National Road, with timber, and, in some places, coal, in abundance, for making the iron work on or near where required; and the railway might, as fast as constructed, be put in immediate use, for the conveyance of the materials for its own extension. I have several times mentioned common turnpikes. By this I have no reference to the National Road which is said to have cost upwards of \$5,000 per mile, besides many incidental expenses for bridges &c. But on common lands a turnpike might be well constructed for \$1,500; and there can be no doubt that the whole labor of constructing a rail way, as above, might be completed for that sum. If, then, we add \$1,500 to \$4,840, we have for the cost of a rail way, \$6,340, or about 3 of the cost (in Ohio) of making a canal through like grounds. I some years ago saw a calculation of, I think, Mr. Latrobe, estimating the cost at \$10,000. But, either his construction or his calculation, or both, must have been erroneous; for he calculated that a horse might draw only a ton up an ascent of one degree. If however, the cost should amount to \$10,000 per mile, how much better would a good rail way be for the uses of government, as well as for the commercial public? The mail might be transported at the rate of 10 or 15 miles per hour, which now, on an average, does not exceed five. Troops and the heaviest baggage and ordnance might be transported to the Lakes in two or three days, and to the Mississippi in a week, which now require weeks, and often a month or two. Thus, then, I have shown, and the facts on which I have predicated, are before the public, from abler and more experienced hands, that a small addition to the cost of the National Road would construct a railway, which would require no expense for lockage, no delay in passing locks, no army of lock or gate-keepers, would not be liable to much interruption from frost, would damage no mill-seats, nor injure the fertility of the soil, nor the health of the inhabitants; but might be constructed in any country, however dry or wet, be at all times, except in deep snow, passable, seldom requiring repairs, and affording a safe, expeditious, and cheap mode of conveyance, in all respects equal, and in most cases, superior, to any inland water conveyance whatever. The undertaking would be the grandest and most economical the world has ever witnessed, would immortalize the Legislator who should move and carry through to enactment, a law for its construction.

*The New York Canal, about 330 miles, cost \$10,000,000; but 1,000 miles of railway, it has been shown, might be constructed for a less sum, or at least, not exceeding it. This, too, was the work of a single state; and cannot, will not, the United States, with a fund devoted to making roads to the Western States, undertake so excellent, so glorious a work!

From the St. Louis [Missouri] Republican, October 11.

We have been politely favored by Gen. Clark Superintendent of Indian Affairs, with the perusal of a letter, written by Jedediah S. Smith who has been for several years engaged in hunting and trapping in the Upper Missouri, and who has visited that extensive barren country on the West, not heretofore explored. From this letter, written in a plain style, we extract the following, which we trust, will be found interesting to our readers:

"My situation has enabled me to collect information requesting a country which has been, measurably, veiled in obscurity, and unknown to the citizens of the U. States. I alluded to the country South West of the Great Salt Lake, and west of the Rocky mountains,

About the 22d of August, 1826, I left the Great Salt Lake, accompanied with a party of fifteen men, for the purpose of exploring the country to the southwest, which was then entirely unknown to me, and of which I could obtain no satisfactory information, from the Indians who inhabited the country on its north-east borders. My general course on leaving the Lake, was S. W. and W., passing the Little Uta Lake, and ascending Ashley's River, which empties into it, where we found a nation of Indians, calling themselves *Sunpatch*, who were friendly disposed towards us. After leaving the Little Uta Lake, I found no further sign of Buffalo—there were, however, a few of the Antelope and Mountain Sheep, and an abundance of Black Tailed Hares. Leaving Ashley's River, I passed over a range of mountains S. E. and N. W., and struck a river, running S. W., which I named Adams River, in compliment to our President. The water of this river is of a muddy cast, and somewhat brackish. The country is, mountainous to the east and on the west are detached rocky hills and sandy plains. Passing down this river some distance, I fell in with a nation of Indians, calling themselves *Pa Uches*. These Indians, as well as the *Sunpatch*, wear robes made of rabbit skins they raise corn and pumpkins, on which they principally subsist—except a few hares, very little game of any description is to be found. About ten days march further down, the river turns to the south-east where, on the S. W. of it, there is a remarkable cave, the entrance to which is about ten or fifteen feet high, and five or six feet in width, after descending about fifteen feet, it opens into a large and spacious room, with the roof, walls & floor of solid rock salt, [a piece of which I send you, with some other articles which will be hereafter described.] I followed Adams river two days travel further, where it empties into the Seeds Keder, which I crossed, and went a south course down it, though a barren, rocky and mountainous country. In this river are many shoals and rapids. Further down a valley opens, from five to fifteen miles in width. The land on the river bank is fertile and timbered. I here found another tribe of Indians, who called themselves *Amuchiebes*. They cultivate the soil, and raise corn, beans, pumpkins and melons in abundance, and also a little wheat and cotton. I was now nearly destitute of horses, and had learned what it was to do without food; I therefore concluded to remain here fifteen days, to recruit my men, and in the mean time, succeeded in changing my few remaining horses, and was enabled to purchase others, from a party of runaway Indians, who had stolen them from the Spaniards. I here obtained some information respecting the Spanish country—obtained two guides—re-crossed the Seeds Keder, and travelled a west course fifteen days, over a country of complete barrens, and frequently travelling from morning until night without water. Crossed a salt plain eight miles wide & twenty long. On the surface of the ground is a crust of white salt, underneath is a layer of yellow sand, and beneath the sand a few inches, the salt again appears. The river Seeds Keder, I have since learned empties itself into the Gulf of California about 80 miles from the *Amuchiebes* and is there called the Colorado.

On my arrival in the province of Upper California, I was eyed with suspicion, and was compelled to appear in the presence of the Governor, residing at St. Diego, from whence, by the assistance of some American gentlemen, (and particularly Capt. W. H. Huntington, of the ship Coeur, from Boston,) I was enabled to obtain permission to return with my men by the route I had come. I also obtained permission to purchase such supplies as I stood in need of. As the Governor would not permit me to travel up the sea coast towards Indago, I proceeded eastward of the Spanish settlement. I then turned my course N. W. keeping from 150 to 200 miles from the sea coast. I travelled three hundred miles in this direction, through a country somewhat fertile, and inhabited by a great many Indians, mostly naked, and destitute of fire-arms, and who subsist upon fish, roots, acorns and grapes. These Indians, unlike, in this respect, to any others that I have seen, cut their hair to the length of three inches.

Afterwards arrived at a river, which I named [after a tribe of Indians residing on its banks] *Winnelche*. I found here a few beaver and elk, deer and antelopes in abundance. I made a small hunt, and then attempted, with my party, to cross Mount Joseph, and join my party at the Great Salt Lake. In this, however, I was disappointed. I found the snow so deep on the mountain that my horses could not travel. Five of my horses having already perished for want of food, I was compelled to return to the valley. Here leaving my party, I set out on the 20th May, accompanied by two men, and taking with us seven horses and two mules, which were laden with hay, and provisions for ourselves, and in eight days we succeeded in crossing Mount Joseph, with the loss of only two horses and one mule. The snow on the top of this mountain was from four to eight feet deep, but so solid that our horses only sunk into it from six to twelve inches.

After travelling twenty days from the east side of Mount Joseph, I struck the S. W. corner of the Great Salt Lake. The country beyond the mountain and this Lake is completely barren, and entirely destitute of game. We frequently travelled two days without water, over sandy deserts, where no sign of vegetation was to be seen. In some of the rocky hills we found

water, occasionally small bands of Indians, who appeared the most miserable of the human race. They were entirely naked, and subsisted upon grass seeds, grass-hoppers, &c. On arriving at the Great Salt Lake, we had but one horse and one mule remaining, & they so poor they could scarcely carry the little camp equipage we had with us. The balance of the horses we were compelled to eat as they gave out."

Constitutional Amendment. The following resolutions were offered in the senate of Tennessee, by Mr. Brown, on the 18th ult.

Resolved, by the General Assembly of Tennessee, That the constitution of the United States should be so amended as to give the election of the president and vice president directly and conclusively to the people, preserving the present relative weight of the several states in the election.

Resolved, That the measures of the present administration of the general government are injurious to the interests and dangerous to the liberties of our country.

Resolved, That the surest remedy of these evils now in the power of the people, is the election of Andrew Jackson to the chief magistracy of this union.

Resolved, That the governor cause to be furnished to each of our senators and representatives in congress, a copy of the foregoing resolutions and the remarks accompanying the same.

We are willing to proceed to as great lengths as any one, if it be possible, to prevent such *managements* in state legislatures and other wise, as were exhibited in the elections of 1800, 1812 and 1824, especially in the two first, and in New York, in regard to the last; and we also have much repugnance to elections by the house of representatives, because that the purity of them will always be suspected—as it was in 1800, so it was in 1824, and it ever will be—but never can yield our consent, humble as it is, to any proposition of the kind offered by Mr. Brown.

The election of president, as at present established, is a compound operation—more of the states than of the people; seeing that the people may be denied the right of voting, how ever anxiously they shall desire it, as in Pennsylvania in 1800 and in New York in 1824, by the stubbornness, or despotism, of a majority in either branch of the state legislature. But if it is to be pretended that the people may elect their president, let the people in reality *elect him*. We wonder at the want of reflection shown in the stirrings that have been made of this subject, and at the quarters of the country from whence they come. If it is designed to suffer the people to elect their president—we shall say well; but if to cause one of the people in certain states, to have as much weight as three of the people in others, of the states, in such election—we shall not enter into any new compact bottomed on such gross inequality, though indisposed to violate the old one, until the public judgment is prepared, (through experience), to bring about a radical reformation. A man in Pennsylvania is as good as a man in Tennessee—and, if a president is to be chosen by the "people," every citizen should have an equal and honest equivalent. We however, prefer *consideration to consolidation*; and do not like to be cheated by names without substance.

We speak of the first resolution. The others have no manner of connexion with it.

From the Torch Light.
CHESAPEAKE AND OHIO CANAL.

Mr. Rountree and Judge Grimes, at the head of a corps of civil engineers, in the employ of the general government, are now on the route of the Chesapeake and Ohio Canal, in this country. They left this place on Tuesday for the purpose of examining the waters of the Conococheague, with a view to the ascertainment of the extent of use that may be made of them as feeders to the Canal; and, we understand, descended that stream yesterday to Williams-Port, from whence they pursued examinations down the river. They commenced their work a few weeks since at Cumberland, and intend prosecuting it to the head of tide water.

The surveys and estimate which these gentlemen are engaged in making, we understand, have been commenced with a view to the settlement of the conflicting opinions that have grown out of the examinations and estimates heretofore made—those of the United States' Engineers being considerably too low.

That this great work must go on, and that too without much delay, there now remains but little doubt. The Corporation of Washington City has subscribed one million of dollars, the Corporation of Georgetown a quarter of a million, and if we mistake not, that of Alexandria has subscribed the like sum, making one million and a half independent of private subscriptions to the amount of many thousands in the District, as well as about ten or fifteen thousand in Leesburg, five thousand in Shepherdstown, ten thousand in Uniontown, several thousand in Alleghany county, and fifteen thousand in this county, with a reasonable prospect of a large additional private subscription. To all of which may be added the appropriation of half a million by the State of Maryland, contingent upon an appropriation of one million by Congress. So that in the event of the required appropriation being made by Congress, the

flowing will be the probable available means, or the commencement of the work.—

Congressional appropriation	\$1,000,000
Maryland appropriation	\$500,000
Dist. Corporation appropriations	1,000,000
Individual appropriations	500,000
	\$3,000,000

Commencing with this sum, no doubt can be entertained of the completion of the undertaking.

From Nicholson's Farmers' Assistant.
DYING OF CLOTHS, &c.

The essential point, in coloring, is a knowledge of the means of *setting the colors* permanently, that they will never fade. In cottons this is a matter of difficulty; in wools it is less so. The liquid, or substance that sets colors, is called *mordant*. The proper mordant for blues, and for red of various kinds, is the *solution of tin*, and is prepared as follows:

Take two parts of nitre, one of ferrous sulphate, and in this liquor dissolve one troy ounce of its quantity of the purest tin that you can get, or more if the liquor will dissolve it. The tin is to be granulated, and put into a glass, as the liquor dissolves it. To use as a mordant, dilute it in two or three parts of stream-water, according to its strength, until it has the acidity of vinegar or lemon juice.

This mordant is to be used in two ways. Where it gives no color of itself, the cloth or yarn may be first put into the dye, or a soluble proportion of the mordant may be mixed with the dye. But, where the former gives color of itself, the cloth or yarn should first be put into it, and then into the latter. Thus, for dyeing cotton black, the mordant commonly used is a boiled decoction of fustic, which itself gives a yellow color; but, after having received this, will receive a permanent black dye. The bark of the quercitron will answer instead of fustic.

A good black for wools is only to be obtained by first dyeing them a deep blue, and then coloring with its proper mordant; and they are to be put in the common black dye, with its mordant.

The different hues of gray are merely mixtures of white wool with suitable proportions of wool dyed black, in the manner just mentioned.

Green is a mixture of blue and yellow dyes, and may be a lighter green, by more of the yellow first given it, with its mordant, and afterwards less of the blue, or *vice versa*, for a deeper green.

The same may be observed of other hues, which are produced by a mixture of two, or more, of the primitive colors. The deepness, or the lightness, of any particular primitive color, or of mixtures of either, is obtained by a proper apportionment of the dyeing ingredients, with their proper mordants; that is, where the color is intended to be deep, more of the ingredients are to be used; and less, where it is to be light.

After premising thus much, we will give a list of different colors produced by different vegetable substances, with the mordant proper for each, as we have been enabled to obtain a knowledge of the same:

Vegetables,	Color.	Mordants.
Indigo,	Blue,	Solution of tin.
Wood,	Do.	Do.
False indigo (flowers)	Do.	Do.
Blue Whortleberry (fruit)		
	Mazarine blue,	
Pokeweed (fruit)	Tyreen purple,	
Watergrape (fruit)	Violet,	
Common hazelnut husks (green)	Black,	Copperas
Witch hazelnut husks (green)	Do.	Do.
Sumac (bark)	Do.	Do.
Oak-trees (bark)	Steel,	Do.
Maples (bark)	Purple,	Do.
Walnut-trees (bark)	Olive,	Do.
Sassafras (bark)	Red,	Do.
Madder (roots)	Do.	Do.
Persimmon-tree (bark)	Crimson,	Alum and salt of tartar
Locust-tree (bark)	Yellow,	Do.
Poplar-tree (bark)	Do.	Do.
Peachtree & Arzsmart (leaves)	Do.	Do.
Stonefruit-tress (bark)	Naukeen & Cinnamon,	Do.

For dying the scarlet, three parts of water to one of solution of tin, are to be mixed together, and then such a quantity of cochineal must be added as will just give the scarlet hue; and if a still paler red is wanted, the quantity of cochineal and mordant must be reduced.

To give a dark unchangeable blue color to wool (says Mr. Greuet, from whom we derive most of the information on this article) the French manufacturers mix one part of the indigo, pulverized, with eight parts of vitriolic acid, well concentrated, and leave it undisturbed for twenty four hours. They then add by degrees, ninety-six parts of pure soft water to the mixture, and stir it frequently.

If the wool, or cloth, when immersed in this becomes of too dark a blue, its color is to be made lighter by its being soaked about a day, or a longer or shorter time, as may be found necessary, in a cold solution of twenty-four parts of pure soft water and one of sea or common salt.