CENTRE HALL REPORTER.

Centre Hall, Pa., June 16, '71.

TERMS.—The CENTRE HALL REPORTER is published weekly at $2 per year in advance, or $2,50 when not paid in advance. Halfyearly and quarterly subscriptions at the same rate. Single copies five cents.

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Notices of deaths and marriages inserted free of charge. Our friends, in all parts of the county will oblige by sending us local items of interest from their respective localities.

The figures set to the address upon each subscriber's paper indicate that the subscription is paid up to such date, and answer the same as a receipt. Persons remitting by mail, or otherwise, will understand from a change in these dates that the money has been received

DEMOCRATIC STATE TICKET

FOR AUDITOR GENERAL,

Gen. WM. M'CANDLESS,

OF PHILADELPHIA.

FOR SURVEYOR GENERAL,

Capt. JAMES H. COOPER,

OF LAWRENCE COUNTY

The reason why there is no prospect for our railroad being built through at once, is the same that caused the delay all along on the portion now to be put under contract—namely, the want of right of right of way and adequate stock subscribtions between Oak Hall and Centre Furnace. As soon as these requisites are complied with, the work, in that gap will go ahead, just as it now does from Oak Hall east to the Union county line. Citizens of Ferguson hurry it on by finishing up your subscriptions and right of way.

In this weeks REPORTER we surrender some of our space to an elaborate article upon narrow guage railways, to which we call the careful attention of our readers. The subject of narrow guage railroads is now attracting considerable attention in this country, and as there is some talk of making our road a narrow guage, the matter becomes of double interest to our people. The author of the pamplet which we copy, is an able engineer, and his treatment of the subject will repay a careful study. We are indebted to Mr. Geo. W. Leuffer, C. E., for a copy of this pamphlet, the greater portion of which we copy.

Our people do not fancy the idea of having a narrow guage railroad, it sounds too much like a one-horse concern, yet we think a careful study of the article we publish elsewhere will soften down prejudice somewhat. The matter is one in which we are deeply interested and should be calmly considered. Our money was subscribed for a road of the ordinary guage, which is 4 feet 9 inches, and should it be determined to shrink this, we can forsee the trouble that will arise when an attempt is made to collect the stock subscribed by our people. The stock books say nothing of the guage it is true, yet it is equally true that every dollar subscribed was under the impression that the prevailing guage would be adopted,—the matter of narrow guages was not then mooted. We are for having the 4 foot 9 inch guage, yet we do not have a horror of the 3 foot guage, from what we have learned upon the subject and from what is set forth in the article published in this issue of the Reporter.

Since writing the above we learn there are about $75,000 lacking yet upon the sum required to grade the road from the Union county line to Oak Hall, which seems to have narrowed the matter down to this, that we must accept a narrow guage or have no road at all. The money now subscribed will build a narrow guage and leave the road free of debt, with a certainty of making it a paying concern. By accepting the narrow guage we think it is certain also that Millheim will be made a point, as it places it within their ability to raise an additional sum, far less than would be required for the expensive broad guage. Again we say, study the article on narrow guage railroads.

Will They Do It.

If ever there was a time when the rads could make good their profession of love for the soldier, and desire to reward him for gallant service upon the battle field, no better opportunity was ever offered than by the nomination of Gen. M'Candless and Capt. Cooper, as the democratic candidates for auditor general and surveyor general. These men were among the bravest of the brave, and have a brilliant record, while their opponents upon the radical ticket, Messrs. Stanton and Beath, belonged to the "home guards," and never smelt rebel powder or saw the smoke or heard the echo of a rebel volley.

Several persons were arrested in Clinton county, a few days ago, for setting fire to mountain lands, and held in $300 bail each, for court. That's right, and we know that if Judge Mayor gets them in his clutches at the next quarter sessions of Clinton county, the villans will find themselves badly burnt. If examples could be made of the fellows in Centre county who continually engage in this villanous work of firing the mountains, it would be a blessing, and be the saving of much valuable timber.

It is really a fact that Horace Greely has returned back to New York from his southern trip. Horace went down to see one of those modern monsters, yclept Ku Klux, but after traveling from Mason & Dixon's line to Texas, he met nary Ku Klux, and says so right out. One would have thought if there was a Ku Klux in any spot in the south, and Horace went down, he would be sure to come back with a black eye and broken nose, if nothing worse. Horace can now write a book entitled "I didn't see no Ku Klux" which will make up for what he didn't know about farming.

New Hampshire O. K.

A dispatch from New Haven brings good news for the democracy from the granite state. There will be another radical less in the U. S. Senate, and another democratic governor added to the list. The telegraph says: The house of representatives has organized by the choice of a democratic speaker in the person of William A. Gove, of Means, who received 164 votes. James O. Adams, of Manchester, the republican candidate, received 162 votes. This assures a democratic governor and democratic United States senator.

Radicalism is taking its departure.

Some of our radical exchanges are in convulsions over what Jeff. Davis said in some recent speeches, and seem to be awfully afraid of Jeff. Well, now if Jeff remains to frighten these fellows with his blabbering whose fault is it? Didn't they all sing, five years in a stretch how they would "hang him on a sour apple tree," and yet when they had him in their power, Horace Greely went his bail, and the radical administration, afraid to give him a trial, let him go. These rads should not complain now, when Jeff wags his tongue.

The. Gov of Nebraska Deposed.

The good work of punishing unfaithful Governors goes on. It is but a short time since Gov. Holden of North Carolina was removed from his office for flagrant official misconduct; and now in the Northwest the Senate of Nebraska, acting as a court of impeachment, have returned a verdict of guilty in the case of David Butler, the Governor of that State, and he likewise is Governor no longer.

Gov. Butler was accused of misappropriating the public funds, of corrupt dealings in relation to school money, the public lands, expenditures for public buildings, and, in fact, of engaging with some of his cronies in a general and comprehensive system of plunder. The full details of the trial have not reached us yet; but the Nebraska papers have not hesitated to charge the late Governor with complicity in frauds of the most scandalous nature. It has even been intimated that the Lunatic Asylum, which was burned down last winter, causing the loss of a number of lives, was purposely set on fire in order to conceal the frauds that had been perpetrated in its construction.

The Legislature of Nebraska, though strongly Republican in both branches, impeached Butler during its last session, but his trial was posptoned. The present session began on May 30, and on the 31st the trial opened. On the following day the Senate came to a vote on the first article. Nine members voted for his conviction and only three for acquittal. This makes Butler's deposition from office certain.

Mr. Gillespie, the Auditor of Nebraska, has also been impeached, and his trial was to begin on Thrusday last, the 1st instant.

To the above from the N Y Sun, radical, we may add that all the impeaching ever done, in this country, was by radicals of radicals, and if impeachment were carried to its full length, every radical office holder, from assessor down to General Grant, would be removed.

The full text of the charge of the Hon. Richard Busteed, Judge of the United States District Court, to the Grand Jury for the district of North Alabama, is now before us. Dick says: "It gives me unfeigned satisfaction to be able to announce that "there is but a single case of alledged "offense to be brought to your notice, "a case in which a party is charged "with having robbed the mails. This "state of facts is exceedingly gratifying "when we consider that a whole year "has elapsed since the empanelling of "the last Grand Jury for the United "States in this district." This is very good testimony, and we find its cause on that page of The World Almanac for 1871, which shows how Alabama was carried last election by the Democracy from stem to stern. The State is once more under the control of its own people, with intelligence, integrity, and property at the helm, *vice* pauperism, ignorance, and crime retired, and no wonder the Federal court meets only to find one case of alleged crime in its jurisdiction for a whole year. "No better evidence of the general good order which "prevails in the community and no "stronger proof of the loyalty of the "people to their government need or "can be furnished," says Judge B., "than is given by their obedience to "the laws." No doubt; but the law now is a defence to the people whom this charge addresses, and is not wrested to their destruction.

While John Scott's Ku Klux Committee are sitting down in Washington to the congenial work of hatching slanders against the people of the South, Horace Greely in a better, more honest and more manly spirit goes among them and learns their sentiments by meeting them face to face. His tour through Texas has been marked by demonstrations of courtesy and respect on every hand. Mr. Greely learns for himself that the people of that State are not wont to picture in the Tribune. In his fare-well speech at Galveston, on Saturday last, he said he could testify that property and life are safe, and are protected in Texas. He declared his purpose to do justice to Texas in the future. Instead of gathering up the fables of affrighted or mendacious carpet-baggers, John Scott and his Committee should imitate Horace Greeley. But they have a partisan end to serve, and the truth concerning the condition of affairs in the South is what they least desire.—*Patriot.*

MORE OCEAN TELEGRAPHS.—It is reported that a new Telegraph Company is forming of New York and European capitalists. who intend to lay a submarine cable from some point on the coast of Georgia to Santo Domingo, Jamaica, and other West India Islands, and thence down the East Coast of South America to Rio Janeiro and other points. It is also the intention of the Company to lay another cable between the United States and Aspinwall, to build a land line across the Isthmus to Panama, and to proceed thence by submarine cables down the West Coast of South America, touching at Lima, Valparaiso, and other points. The Company will also extend its line from the United States to Cuba as the right to land a cable on the Cuban coast can be obtained from the Spanish Government.

T. A. Scott says there will be no other than narrow guage (three feet) roads built hereafter. He has good authority on railroad matters.—*Pittsburg Post.*

Negro Strikers.

The negroes in Washington city have got on a strike and got to be very troublesome—endangering the lives and property of the citizens at the national capitol. These blacks were at work upon public buildings for the district and wanted more pay. We have a telegraphic report of things on 6th inst.:

The colored strikers, in their convention last evening, expressed a great deal of bad feeling, and several violent, incendiary speeches were made. One speaker said they were all laboring men and must have work to keep their families from starving, and if they were to be kept out of it by these contractors they would have their blood; and should this continue, he would say to them to take a contractors's head off his shoulders wherever and whenever they should meet him. He told them to go to their districts and form associations for laboring men, elect delegates to a convention to draw up memorials and resolutions to be ready to meet these Yankee contractors, the meanest and most contemptible men on God's earth.

The present actions of the strikers partake more of the character of a mob than a body of peaceable citizens, and the police authorities are consured by all good citizens for not arresting the ringleaders and making an example of them. The Chonicle, to-day, in a well tempered article, warnes the strikers that the result of their movements will be to attract a large number of negroes here from Virginia and Maryland, who will be glad to go to work on the terms refused by the workmen here.

[SECOND DISPATCH.]

Threatening Demonstration.

Washington, June 6.—To-day an excited crowd of three hundred colored laborers attempted to drive the Irish laborers off the work of paving Seventh street, south Washington, and threatening to kill every mother's son of them. A large body of police was promptly on hand and ordered the crowd to disperse, which they refused to do and threatened the police. The police succeeded in arresting five of the ringleaders, when their followers moved off, threatening to return with reinforements and prevent the Irishmen from working. A large force of police was kept on the ground all day to preserve the peace.

Our Candidates.

The nomination of General William M'Candless for Auditor General, will command the respect of every intelligent voter in the Commonwealth. Not only do the democracy hail it with delight, but thousands of republicans who know the worth of the gallant nominee stand ready to show their appreciation of the selection by endorsing it at the ballot-box.—As a soldeir, General M'Candless has a record written over the history of gallant deeds in defense of the Union.—He entered the service of the United States on the 27th of May, 1861, as Major of the Second Regiment of Pennsylvania Reserves. William B. Mann of Philadelphia, was commissioned Colonel of this regiment, but resigned as soon as active hostilitics began. After his resignation the regiment was commanded by Gen. M'Candless, as Lieutenant Colonel, until the tenth of July, 1862, when Governor Curtin, in recognition of his gallantry, promoted him to the Coloneley of this regiment. From Meshanicsville, the first of the Seven Days' Battles near Richmond, until his honorable discharge from the service. Gen. M'Candless continued in active duty, a great part of the time acting as brigade and division commander. He was twice severely wounded, first at the second battle of Bull Run, while gallantly leading his regiment in that hard fought but disastrous field, and subsequently in one of the bloody battles of the Wilderness. But the splendor of his military career is matched by his record as a legislator. After the close of the war he was elected state senator from the First district of Philadelphia, receiving a very large majority. He at once took high rank in the senate and soon came to be regarded as one of the ablest as well as one of the purest men in that body. He retired from that position, respected not only by his own constituents but endeared to the democracy from one end of the state to the other.

Captain James H. Cooper, of Lawrence county, the nominee for Surveyor General, is also a soldier whose name is familiar to the veterans of the late war. He is a native of Allegheny county, a self-made man, having lost both his parents when a boy. When the war of the rebellion broke out; he enlisted as a private in a company formed in his adopted county, of which he was chosen orderly sergeant. This company afterward became famous as Battery B. of the First Artillery, Pennsylvania Reserve Corps, or as "Cooper's Battery," the orderly sergeant of 1861 having been chosen its commander upon the reorganization of the regiment to which it was attached. Capt. Cooper participated in all the engagements fought by the Army of the Potomac from the beginning of the war until August, 1864, when his term of enlistment having expired, he returned to his home. He is spoken of by his old comrades in arms as the bravest of the brave. The official reports of the commanders under whom he served bear abundant testimony to his gallantry and the efficiency of Battery B. When he was mustered out, he was recommended by all the officers of the other batteries of the regiment for the Colonelcy, and the recommendation was endorsed by General Meade and other distinguished officers of high rank. Captain Cooper, we believe, has never held any civil office, but was nominated by the democrats of the House of Representatives as their candidate for Sergeant-at-Arms at the organization of the present legislature, and at the same time, without his knowledge or consent, and against his earnes protest, was presented, by way of a flank movement, by the republicans of the Senate for the same position in that body. The sixteen republican Senators will of course prove their consistency by voting for Captain Cooper for Surveyor General. He is a man of unquestioned integrity, fine business qualifications, and a working-man in the true sense of the word. Such is the work of the convention of yesterday. Can there be any doubt that the seal of the popular approbation will be stamped upon it on election day?

A Correspondent of the Cincinnati Commercial lately interviewed ex-President Johnson, at Knoxville, Tenn. He says:

I asked Mr. Johnson what he thought of General Sharman as a Democratic nominee for the Presidency.

"Sherman," said he, "is a smart man and a shrewed man. There is no doubt but what he is looking forward to the Presidency, and if he can't get it from one party, he intends to from the other. He is not very particular about parties. In course of time he expects to be President, but he is in no particular hurry about it. His chief aim now is not to lose his popularity, and to be ready when the golden moment comes. He is a military man, and don't care much about parties. He is a good deal as Grant was after the close of the war. That little fellow had quite a notion of going with the Democracy for a while."

"He was formerly a Democrat, was he not?"

"No, he wasn't anything. He didn't have sense enough. He has got no head of his own. Sherman is as much smarter a man than he as you can imagine. Frequently they have both come in to see me on business. Grant always stood back and let Sherman do the talking. The little fellow felt his inferiority, took a back seat and let Sherman transact the business. Sherman is a man, while Grant is nothing. Yes, sir, he is just nothing."

"But the Republicans will be apt to re-nominate him, don't you think?"

"Appearances indicate that they will."

"They have got him and seem inclined to hold on to him?"

"No," replied Mr. Johnson, "he has got them. They can't get rid of him. He is in, and intends to remain in. He has got the patronage and that infamous Ku Klux bill to aid him. That Ku Klux law is a damnable infamy. Twenty years ago it would have shocked the American people like electricity."

The Hon. Robert B. Roosevelt has nominated the son of General Thomas Francis Meagher for a cadetship in West Point from the Fourth congress district of this city. Mrs. Meagher has accepted the offer, under the supposition that a year would be allowed for her son's preparation. Young Meagher, who is at St. Stanislaus college, Dublin, is unable to get here in time for the examination. Mr. Roosevelt has asked the proper authorities to defer young Meagher's examination until September. He has received no answer to his request. Mr. Roosevelt's conduct stands in striking contrast to that of Gen. Grant, who thinks one of Brigham Young's bastards more worthy of a West Point cadetship than the son of a noble Irish-American patriot, whose character was without a stain.—New York Sun.

The Democratic Candidate for Governor of Ohio.

The Age gives the following short sketch of the Democratic candidate for Governor of Ohio:

General George W. McCook, one of the famous "fighting McCooks," of Ohio, has received the nomination of the Democracy for Governor of Ohio. He has long been known in connection with the party in the Buckeye State, and in the National Democratic Convention of late years has invariably headed the Ohio Delegation. He was born in East Ohio and educated at Steubenville, where he distinguished himself among his fellow-students. Admitted to the bar at an early age, he speedily gained consideration as a lawyer, but he was called from practice by the breaking out of the Mexican war. McCook went to Mexico as a subaltern and came back as Lieutenant-Colonel of his regiment. He covered himself with distinction during the war, as also did his three brothers, one of whom, General Robert McCook, was killed in the late civil war. The young soldier resumed his profession in Jefferson county, Ohio, and a few years later was appointed Attorney-General for the State. This, we believe, is the only office he has held. He is one of the ablest lawyers in the West, and a powerful stump-speaker; and, with the exception, perhaps, of Mr. Pendleton, is the most popular of the Democratic statesmen of Ohio.

A CYCLONE.

Curious Phenomenon Near Mason City, Illinois.

Chicago, June 5.—A cyclone occurred near Mason City, Illinois, last Friday morning. An inky-hued cloud of smoke, like a column, was observed gathering near the earth's surface, on an open prairie, six miles from that place, and from this column soon shot out three narrow and spire like clouds—columns, which continued to ascend rapidly till they reached and seemed to attach themselves closely to a cloud above. This frightful apparition moved slowly towards Mason, but finally changed its course, much to the relief of the people of that place. A mile away from its track an odor much like that of burning sulpher was inhaled by some persons. A gentleman who stood out a hundred yards from the cyclone when it passed says that small flashes of electricity were constantly visible in the storm column passing from the earth to the cloud above, and that rapid popping and cracking reports were heard, reminding him most forcibly of an infantry regiment in battle firing their muskets as fast as possible. The pathway of cyclone was nearly three miles in length, and from twenty to eighty feet in width, and on that pathway not a spear of grass, not a stock of corn or wheat, not a shrub, not a particle of vegetation was left alive for some distance. The earth was literally plowed up the depth of six inches. The column of whirling air must have been intensely hot, as every green thing in its path was literally dried to a crisp. Another feature of the cyclone was, that while its rotary motion must have been of considerably great velocity, its progressive motion was not above the rate of six miles an hour the outlines of its pathway were so well defined that five feet from the outer line of the total destruction of vegetation of every kind not a vestage of its effects could be seen. Fortunately no house stood in the tornado's line of march.

There is a habit among children of sliding down stair railings whenever they get a chance. This habit was the cause of a most fearful accident in Williamsport, a few days ago, at the Herdic House. A gentleman from Baltimore, we believe, was boarding there, with his wife and two little boys. It seems they were sent for a basket of some sort, and undertook to see which could beat the other down stairs. One of them sprang across the railing to slide down, as he thought he could go faster, and had only slid a little way, when he lost his balance and fell from the fourth story floor down the well hole of the stairs, which was circular, to the stone pavement in the offie of the hotel. He was not killed, but his thigh was broken, and the physicians say his escape from death was almost miraculous. Let parents caution their children against this dangerous habit.

The democrats are making a lively campaign in Ohio—in fact they are making it terribly hot for radicals—Col. M'Cook, the gallant nominee of the democracy for governor, is entering into the work which makes rotten radicalism tremble in its boots. Ohio will go democratic beyond a doubt.

NARROW GUAGE RAIL-ROADS.

"Is there any reason why the present Guage of our Iron Roads should be adopted on our future Railways?"

A QUESTION, PUT TO THE AUTHOR, AND REPLIED TO, BY RICH'D B. OSBORNE, CIVIL ENGINEER, BALTIMORE, M. D.

The Origin of Railway Gauges.

George Stevenson adopted the 4 ft. 9 in. gauge for the reason that it was used in all the horse vehicles in England; and when the parts of the first locomotive were ready, and were put together, owing to some unexplained cause, it proved to be only 4 ft. 8½ in. in gauge, and lo! the whole railway world have followed the pattern thus produced, and hence our present standard.

J. K. Brunel, the man always ahead of his cotemporaries, brought forward the two extremes of the 7 ft. gauge and the low flanges of the Great Western of England.

Others in their estimates of fitness took something of a mean between these two, and hence the 6 ft. 5-10 in, the 5 ft. 6 in. and the 5 ft. 3 in. gauges. Each has had its advocates.

If the correctness of any of these be measured by the millions expended in their development, we must believe some one of them to be unquestionably the right gauge.

At all events, this expenditure readily supplies us with a reason why so many of our worthy railway friends ridicule the views of men who presume to advocate a change from the present standard gauge of 4 ft. 8½ in., and to ask a calm investigation of the question, whether districts in need still of railroad facilities cannot be supplied with remunerative works of a different gauge, costing less, and producing more than our present railways, in proportion to the expenditure?

During the "battle of the gauges" in England, many engineers, with myself, used efforts to oppose the adoption of any gauge wider than the Stevenson.

Even at that date, it was plain to every reflective mind, that the change proposed must increase the cost of construction and equipments, add largely to operating expenses, be productive of great "wear and tear," and visit the line adopting it with serious loss.

Locomotives on a 7 foot Gauge.

Any one who has stood beside a 40 ton locomotive, with a single pair of drivers of 10 foot diameter, on a 7 foot gauge, must have felt, unless familiar with the sight, how fearful it was to have such a mass whirling a train of fragile carriages at the rate of a mile in a minute.

The engineer on the foot-plate of this engine seemed to be almost inaccessible.

The whole machine, a magnificent moving monster, that sped its train 120 miles in two short hours, was truly a grand monument of resolution, but a terrible mistake in conception.

Think you it required much sagacity in men of moderate views, to settle it in their own minds, that such broad gauge folly would one day cure itself? The passengers on that train did not weigh more than half the weight of even the steed that drew it, while the tender, carriages, and baggage car, piled up the unproductive weight that shot over the line at the expense of traction and unnecessary wear and tear.

Weight of rails on the 7 foot Gauge.

On such a line the iron rails weighed 94 lbs. per yard, yet these massive rails were broomed out into shreds, and the wear was, of course, reciprocated by every wheel and axle that ran on them.

The early pioneers in our railway system, for years after even the adoption of the wide gauge, in spite of all the promised advantages it was to afford, remained steadfast to their old opinions.

Views of George and Robert Stevenson

Both the Stevensons, in 1850, recommended for passenger trains engines of 17½ tons weight, and freight, 18 tons, with carriages and cars of 3 to 3½ tons. They made frequent mention of the importance of the proper proportioning of the "dead" to the remunerative weight in all the rolling stock, its consequent economy of working, and showed that charges for travel could be thereby reduced 25 per cent., with even a gain to the railway companies.

They even advocated a light description of engine and car combined, for local travel.

Well would it have been for our railways if these opinions had not been totally lost sight of.

Reduction of weight on the 4 foot 8½ inch advocated long ago.

Many in the profession since, cognizant of the wide departure everywhere from these views have advocated a reduction on the Stevenson gauge, of the weight of cars, carriages and locomotives, with more frequent trains if requisite, as the only hope of getting rid of the great deterioration of the permanent way and rolling stock, a deterioration that required the expenditure of such large sums annually as to considerably affect the dividends due stockholders.

Inquiry: whether the narrowing the present gauge will not reduce the dead weight of trains to something more commensurate with the work done, and relieve our future iron roads from the causes which have rendered others so much less productive than they ought to be.

Lessons taught by broad Gauges.

The broad gauges have taught lessons to their advocates which they never would learn but by dear bought experience.

Those lessons should not have been lost upon the upholders of our 4 ft. 8½ in. gauge; they should have learned that it was not wise to permit, in any degree, the causes to exist which had proved so injurious to others, and should have guarded with care those features in their own works, from which they derived the advantages, that the broad gauge advocates were finally compelled to acknowledge and fall back on.

Strong arguments supplied to advocates of narrow guage.

The opposite of all this has furnished very strong arguments to those who believe that the narrow gauge is going to prove a panacea for the many ills complained of, and a perfect security against their being inflicted on future railways built on this principle.

Can the first enquiry be replied to.

But the question first asked, "Is there any reason why the present gauge of our iron roads should be adopted for our future railways?" we will endeavor to reply to: Can we, by the adoption of a narrow gauge, obviate that which has proved more or less detrimental in all the gauges already tried, from the 4 ft. 8½ in. standard upwards? If this can be accomplished, there can be no doubt that the productiveness of the new lines will exhibit their value for investment, that stockholders will be readily obtained, and that ere a score of years pass, every district now unblessed by these benefactors will own its special line of railway.

Decrease of weight on narrow gauge roads.

It is quite certain that a narrower gauge than 4 ft. 8½ in. will reduce the unproductive weight of trains in somewhat the same proportion as the gauge is lessened, because less dimensions of iron and timber on the shorter span of the narrow gauge will bear the same weight as the wider. If the dead weight of trains be decreased, the weight of the engine will be similarly affected, and here is certainly one of the greatest advantages the narrow gauge roads will possess, for the weight of our locomotives on the standard gauge inflicts upon the rails a pressure, transmitted with a sledging force, beyond the capability of iron to resist, while the lighter engines with a maximum weight of only 13,000 lbs., on a single pair of drivers, will have no power to crush or laminate but will *wear out* the iron, much as a knife blade is worn on a whetstone.

Passenger cars.

One of our ordinary passenger cars will weigh 33,000 lbs., and the average through passengers will be found to be about 27 in number, weighing say 4,000 lbs.

The unproductive weight, therefore exceeds by 8 times the paying weight.

On a gauge of 3 feet, a car to accommodate 30 passengers will not weigh over 18,000 lbs., or 4½ times in excess of the paying weight. In other words, the locomotive on the narrow gauge would have some 7 tons less weight to haul for each car in its train. To keep up, however, the average number of passengers on the 3 foot gauge line, it will be necessary to run an additional number of cars in each train. I will assume then that 5 passenger cars are run on each train on the standard gauge, and 7 on the 3 foot gauge—this will of necessity change the unproductive weight hauled on it from 4½ times to 6 times the paying weight.

The weights of the trains under this view, on the respective gauges, will be follows:

Capacity and weights of passenger cars.

ON THE 4 FT. 8½ IN. GAUGE.

5 passenger cars, at 33,000 lbs...	82	net tons
1 baggage and 1 express.....	29	"
Weight of engine and tender...	45	"
Weight of passengers.....	10	"
Total weight of train.....	166	"

ON THE 3 FT. GAUGE.

7 passenger cars, at 18,000 lbs...	63	net tons
1 baggage and 1 express car.....	15	"
Weight of engine and tender...	25	"
Weight of passengers.....	10	"
Total weight of train.....	113	"

The passengers carried by both trains being alike.

Assuming two trains each way for 313 workink days, there would be hauled a gross tonnage on the 4 ft. 8½ in. of 207,832
And on the 3 ft..... 141,476

Showing an unproductive wieght hauled on the 4ft. 8½ inch gauge..... 66,366 net tons.

This put at the low rate of 1½ cents per ton per mile for transportation at high rates of speed, on 100 miles, would amount to $99,534.

Some engineers have largely exceeded the views expressed here as to the amount of economy gained in the working expenses of the narrow gauge railways.

Views of others as to unproductive weight of passenger trains.

It has been asserted that as much as 30 tons of unproductive weight are hauled on our standard gauge, in passenger trains, for each 1 ton of passengers, while the amount in the foregoing statement is as 16 tons only to 1 of paying weight. I prefer, however, to be within bounds, as there may be much that will have to be provided for in practical experience, that does not now present itself.

Capacity and weight in freight traffic.

We will next examine the question in reference to an ordinary freight business.

The 8-wheeled freight car on our standard gauge may be taken at 20,800 lbs. weight, with a carrying capacity of 18,000 to 20,000 lbs.

If these were always fully loaded, the above figures would give respectively the non-productive and paying weights transported, but from the fact that these cars are often despatched with only partial loads for long distances, sometimes even running empty between stations, the proportion of non-productive weight carried by them is found to be 1½ to 1½ tons to each 1 ton of paying load. In other words, a freight car weighing 10 net tons will carry an average paying load of 8 tons through the year.

A freight car on a 3 foot gauge, with a carrying capacity of 10,000 lbs. and weighing 7,000 lbs., will transport an average load the year round of 4½ tons, and still be deficient 500 lbs. of its full comolement each trip.

Here is a non-productive weight of 3½ tons with its paying load of 4½ tons, or as 1 non-productive to 1 36-100 tons paying weight.

A freight train on the standard gauge transporting 200 tons of paying weight, would require 25 cars, weighing 250 tons, which is 1½ tons dead weight to 1 ton of paying weight; but on the 3 foot gauge 200 tons of freight would require 17 cars more than the standard gauge, or 42 to make up the train, and would weigh, themselves, 147 net tons, or 1 ton of dead weight to each 1 35-100 ton paying load.

Results in freight traffic.

We have, then, the weight of a train transporting 200 tons of freight

ON THE 4 FT. 8½ INCH GAUGE VIZ:

25 freight cars at 10 net tons each	250	tons
Load of merchandize.....	200	"
Weight of engine and tender.....	45	"
Gross weight of train.....	495	"

ON THE 3 FT. GAUGE.

42 freight cars at 7000 lbs.....	147	"
Load of merchandize.....	200	"
Weight of engine and tender.....	25	"
Gross weight of train.....	372	"

Or 123 tons less dead weight moved per train on the 3 foot gauge. And during 313 working days, if 2 trains ran daily, on each way, the saving in tons hauled, to do the same business of 125,000 tons of merchandize would amount to 77,000 tons in favor of the narrow gauge. Putting this haulage of weight saved at 1 cent per ton per mile on 100 miles of road, it would exhibit a saving on these two daily trains, to the transportation department, of $77,000 per annum.

Capacity and weight in a coal business.

I will now investigate how for the transportation of coal and minerals would be affected by the the change of gauge.

The 4-wheeled coal car of the standard gauge weights 6,000 lbs., and carries some 10,500 lbs. of coal, which gives 1 ton of dead weight to 1 6-10 tons of productive load; but as these cars return to the mines empty, the dead weight carried over the 100 miles is equivalent to 13,200 lbs. for the 10,500 of coal taken to market; or as 1¼ tons of dead weight to each ton of paying load.

A coal car on the 3 foot gauge, weighing 3,000 lbs., will give a carrying capacity of 5,000 lbs., or ½ of a ton only of dead weight to every ton of paying weight. Doubling this dead weight for the return trip to the mines, there is still but ½ of ton of unproductive weight to each ton of coal transported.

Results in a coal tarffic of one million tons,

In a yearly business of one million tons of coal, on a railroad 100 miles long, at the foregoing rates,

ON THE STANDARD GAUGE,

there would be—	
Coal transported.....	1,000,000 tons.
Weight of cars.....	1,250,000 "
Gross load, exclusive of engine and tender.....	2,250,000 tons.
Coal transported.....	1,000,000 tons.
Weight of cars (25 per cent. more in number).....	750,000 "
Gross load, excluding engine and tender.....	1,750,000 tons.

Showing that the vast amount of half a million of tons less of unproductive weight would be hauled on a 3 foot gauge, in the transportation of one million tons of coal.

This large tonnage saved, put at ¼ a cent per ton per mile, or 50 cents on 100 miles, would show a productive capacity of a 3 foot gauge, additional to its other earnings, of $250,000 per annum.

If the foregoing investigations have arrived at anything lik correct results (and they are confirmed by the views of many others in the profession), then is it evident that a very great degree of comparative economy will be attained in the operating expenses of our future lines of railways, if built of the 3 foot gauge.

Question of revenu.

We will now take up the question of revenue, and see what effect this economy in operating will have upon it.

It has been shown that in 4 daily passenger trains, with a given business, the 3 foot gauge would

save annually, in working expenses.....	$99,534
In 2 daily freight trains.....	77,000
And on 1,000,000 tons of coal per annum.....	250,000
Total annual saving on the assumed business.....	$426,534

Equivalent to the interest of 6 per cent. on about seven millions of dollars.

Percentage earned.

The business assumed for a road of 4 ft. 8½ in. gauge, 100 miles long, with double track, would necessitate an outlay for construction and equipment of, say, eight millions of dollars, and would yield

A gross revenue of.....	$2,000,000
Allowing 60 per cent. for operating.....	1,200,000
Leaving for net earnings.....	$800,000

Or 8 per cent. dividend, and 2 per cent, sinking fund.

A railroad of 3 foot gauge, of a like character of construction, wil cost..... $4,800,000

And will yield on the same business a gross revenue of.....	2,000,000
Allowing the same rate operating as on the standard gauge.....	$1,200,000
Less the saving shown before.....	426,534
	773,466
Leaving for net earnings.....	$1,226,534

Or 20 per cent. dividend, and 5 per cent. sinking fund.

This would seem to indicate that, while the 4 ft. 8½ in. gauge roads cost 60 per cent. of the gross earnings to operate, and return 40 per cent. and will yield 60 per cent. of the gross revenue for the net income.

The three foot gauge advantageous.

If this be so, or even approximating to what has been stated, the question at the head of these remarks has received its reply; for doubtless a reason, and that a good and sufficient one has been found, why the present gauge of our iron roads should not be adopted for our future railways.

From estimates made, I am of opinion that the cost of construction of the 3 foot gauge will be about 6-10 of that required for our standard roads, of like quality.

Two-thirds have been usually considered as the proportion, which agrees with this estimate closely.

Cost of iron rails.

That there is a great decrease in the first cost of construction, will be seen from the difference in cost merely of iron rails for the two gauge.

For the 100 miles, takes as our example in the foregoing remarks, we will estimate the iron 1st, for a double track 100 miles long, laid with the usual 65 lb. per yard. This would require 20,428 tons, at $73..... $1,532,100

2d. Then narrow gauge double track, laid with 45 lb. rail would require 14,142 tons, at $75. 1,060,650

$471,450

Showing a difurence of near half a million on the first cost of iron alone, while a greater difference will be found in the cost of the finished tracks.

Renewal of iron rails.

It must be borne in mind that the saving in first cost of iron rails will be repeated every few years, the heavy rails on the 4 ft. 8½ in. roads being quickly destroyed by the excessive weight and speed, while the lighter rails on the 3 foot gauge, (which will, of necessity, be made of a better quality of iron), will last very many years, until fairly worn out, the crushing and laminating action being done away with.

Comparative cost of the two gauges.

The following may be taken as the comparative cost of the two different gauges, with the probable incomes derivable from each.

ROADS COSTING INCLUDING EQIPMENT.

On the Standard Gauge.

$80,000 per mile, and paying 10 per cent.		
40,000 " " " "	7	"
30,000 " " " "	6	"
20,000 " " " "	8	"

On the three foot gauge.

Would cost $48,000, and pay 25 per cent.		
" " 24,000, "	17	"
" " 18,000, "	15	"
" " 12,000, "	20	"

Other advantages.

The decrease in the destructive powers of the locomotive, by reason of the change of gauge, will of itself prove so great a benefit, that it will work a revolution in the finances of our future roads. Railroad men will hail with delight anything that will prevent, or even greatly reduced, the incessant wear and tear of iron rails. Steel rails will not be needed for such roads. A rail made of fair refined iron will answer every purpose. Fastenings will have a chance of proving their respective merits, because the cost will be within the reach of all, which now excludes the best from many roads. Cross-ties, the duration of which is limited, not by their decay, but by wear, will require removal every six or seven years, in place of every three or four. Here are elements enough, without entering into the lessened wear and tear of rolling stock, to render railroads more remunerative.

Other advantages of the narrow gauge.

The weight of the locomotive assumed for comparison in the foregoing remarks, is greater than would really be required on the 3 ft. gauge. In proof of this, I will quote from the circular of M. Baird & Co., the proprietors of the extensive Baldwin Locomotive Works, in Philadelphia. These gentlemen, alive to the advantages promised by the reduction of gauge, have prepared themselves, like business men, to supply the want that will ere long tax the capabilities of our locomotive manufacturers.

Locomotives of the smaller gauge.

They give the weighti of six different locomotive engines for the narrow gauge, with 4 to 6 wheels connected, and from 18,000 lbs. to 35,000 lbs. weight in working order, and 9,000 to 13,000 lbs. on each pair of drivers, so that their maximum weight of engine is 5,000 lbs. less than that chosen for the comparison herein.

Railroads now in the U. S., and amount that might have been saved on first cost of construction.

We have in the United States 44,000 miles of railway, costing on an average $40,000 per mile.

Had 20,000 miles of these been constructed on the 3 foot gauge, at a cost per mile of $20,000, would have in hands now three hundred and sixty millions of money, enough to build 20,000 miles of new road on the narrow gauge, while would meet the demands of every part of the country now needing the facilities of transportation.

News! See Here!

TIN AND SHEETIRON WARE

The undersigned hereby informs the citizens of Pennsvalley that he has purchased the Tinshop heretofore carried on by the C. H. Mfg Co., and will continue the same, at the old stand, in all its branches, in the manufacture of

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