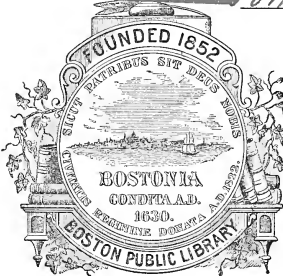




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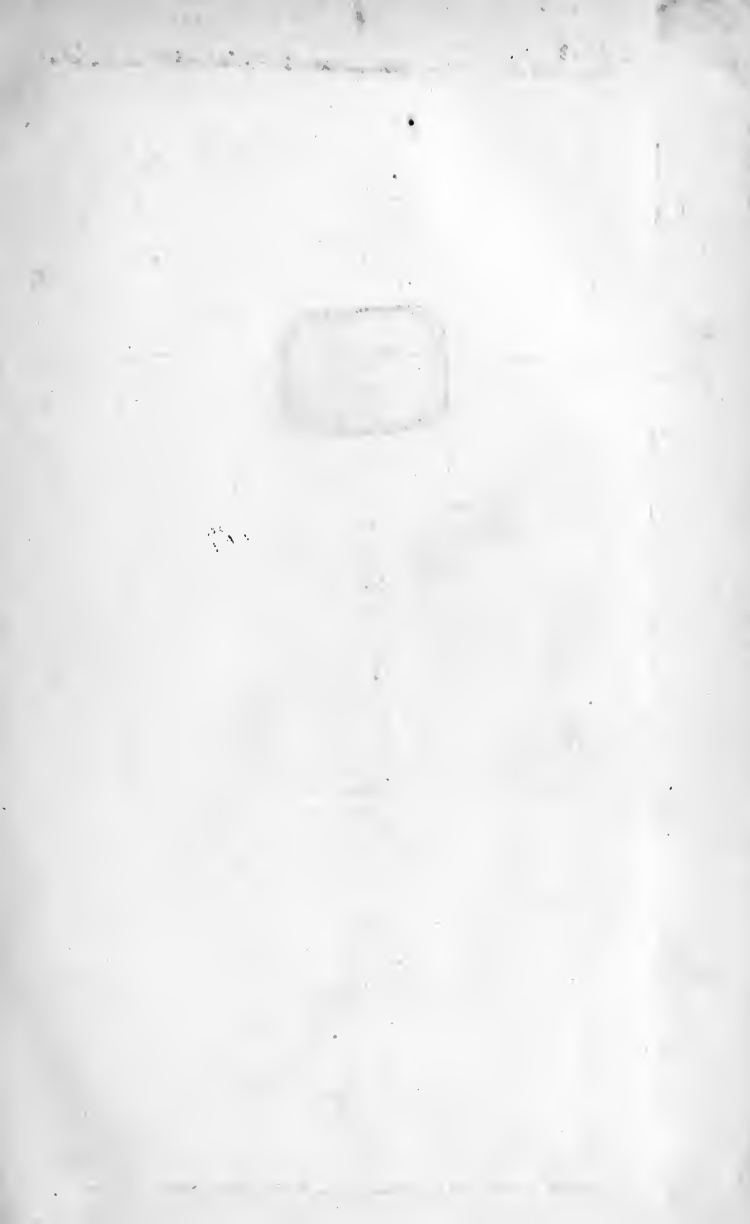
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# GOOD ROADS

THE ROAD IS  
THAT PHYSICAL SIGN OR  
SYMBOL BY WHICH YOU WILL  
UNDERSTAND ANY AGE  
OR PEOPLE. IF THEY  
HAVE NO ROADS THEY  
ARE SAVAGES. FOR  
THE ROAD IS THE  
CREATION OF MAN  
AND A TYPE OF  
CIVILIZED  
SOCIETY.

VOL. 6.

DECEMBER, 1894.

No. 6.

An illustrated monthly  
magazine devoted to  
the improvement  
of the public roads  
and streets



Good Roads make good people,  
and good people, properly in-  
structed, make good roads.  
Therefore, with all thy getting,  
get information. We have it;  
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## CONTENTS

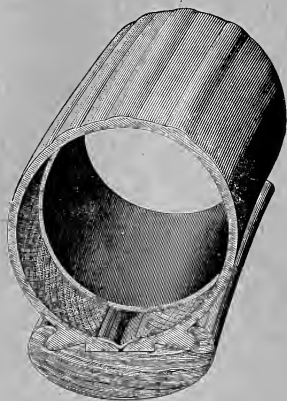
- ROADS AND CARRIAGES,  
BY STERLING ELLIOTT.
- ABRAHAM LINCOLN ON IDLERS.  
HOW THE ROAD QUESTION LOOKS TO  
A MINISTER,  
BY REV. CHAS. A. CRANE.
- MACADAM ROADS ON THE PRAIRIE,  
BY HORACE S. KAUFFMAN.
- REPORT OF CARRIAGE BUILDERS'  
ROAD COMMITTEE,  
BY C. F. KIMBALL.
- ROAD RESOLUTIONS OF CARRIAGE  
BUILDERS' NATIONAL ASS'N.  
HOW TO GET A FLYING START ON  
THE ROAD,  
BY E. J. PENNINGTON.
- A COLORED STORY FOR WHITE PEOPLE,  
BY FRANK WELLER.
- ANOTHER PLAN FOR RAISING MONEY,  
BY J. M. MARTY.
- OPENING OF A CHESTNUT BURR.



STERLING ELLIOTT  
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# GOOD ROADS.

An Illustrated Monthly Magazine Devoted to the  
Improvement of the Public Roads  
and Streets.

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VOLUME SIX.

JULY TO DECEMBER, 1894.

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# INDEX.

Advertisement, An ..... *Sterling Elliott* ..... 49

Asbury Park Baby Show..... *Sterling Elliott*..... 108

Attractiveness of Good Roads.....*Gov. Smith of New Hampshire*.. 137

Asbury Park Good Roads Convention.....*Miss Bertie Knight* ..... 138

A Colored Story for White People.....*Frank Weller*..... 335

‘Bloomer Costume,’ True History of the.....*Member of Mrs. Bloomer’s family* 221

California, Good Road Movement in.....*Gov. H. H. Markham*..... 13

Cincinnati, What Street Improvements Have Done for  
*Michael G. Heintz*..... 35

Cycling.....*Robert Bruce*..... 45

Chas. Dickens’ Description of an Italian Road..... 46

Chestnut Burr, Opening of a.....56, 114, 170, 230, 290, 346

Colorado Roads and Scenery.....*Edward B. Light*..... 69

Cheap vs. Good Roads.....*Gov. Brown of Maryland* ..... 124

Culvert, An Improved.....*W. O. Noyes*..... 148

County Roads, The Home Building of.....*D. W. Lewis*..... 258

Drainage of Roads, The.....*W. H. Breithaupt*..... 32

Dry Roads..... 107

Doctor’s Story, A.....*Sterling Elliott* ..... 111

Domestic Science.....*Sterling Elliott* ..... 277

Ethics, Journalistic.....*Sterling Elliott* ..... 3

Expense of Good Roads.....*Col. D. W. McClung* ..... 178

Extract from Speech by Gen. Roy Stone..... 224

Free Mail Delivery, Rural.....*John M. Stahl*..... 86

Free Mail Delivery for the Country.....*Col. Pope* ..... 89

Farmers, National Congress of..... 102

Florida East Coast, Down the.....*F. W. Hawthorne* ..... 237

Frontispiece..... 255

Good Road Movement in California.....*Gov. H. H. Markham*..... 13

Good Roads Convention, The..... 41

Good Roads Bicycle Tournament.....*Sterling Elliott* ..... 100

Good Roads and the Tariff.....*Sterling Elliott* ..... 119

Good Roads, Attractiveness of.....*Gov Smith of New Hampshire*.. 137

Good Roads the Civilizer.....*Horatio Crain*..... 286

How They Did It in Bergen County, New Jersey  
*M. T. Richardson*..... 105



	Page.
History and Construction of Our Highways, and Who Should Build Them <i>Hon. N. G. Spalding</i> .....	126
Highways, The History and Construction of, and Who Should Build Them <i>Hon. N. G. Spalding</i> .....	126
Home Building of Country Roads, The..... <i>D. W. Lewis</i> .....	258
How Good Roads Pay for Themselves .....	278
How It Looks to a Minister .....	325
How To Get a Flying Start on the Road .....	332
Italian Road, Chas. Dicken's Description of an.....	46
Institution, An Old Time..... <i>Julia H. Emery</i> .....	156
Improved Methods Wanted..... <i>Sterling Elliott</i> .....	235
Improved Methods Wanted .....	250
Journalistic Ethics..... <i>Sterling Elliott</i> .....	3
League Members Only, For..... <i>Sterling Elliott</i> .....	52
League, An Open Letter to the .....	91
League Membership, How To Increase It..... <i>Henry Crowther</i> .....	282
Minnehaha, The Home of .....	63
Montana, The Treasure State..... <i>F. H. Ray</i> .....	180
Montana, The Roads of .....	186
Montana, Mining and Metallurgy in..... <i>F. W. Traphagen</i> .....	190
Montana, Public Education in..... <i>C. C. Wylie</i> .....	198
Montana, Map of .....	205
Montana From an Agricultural Standpoint .....	207
Macadam Roads in a Prairie Country .....	316
National Roads Conference, The .....	39
New Use for Religion .....	43
National Good Roads Conference, The..... <i>Sterling Elliott</i> .....	97
Our Copyright, What It Means..... <i>Sterling Elliott</i> .....	123
Pope, Col. Albert A. (frontispiece)..... <i>Sterling Elliott</i> .....	94
Plan To Increase the Circulation of Currency, and Make Better the Roads of the Country..... <i>Simon Schriver</i> .....	132
Popular Road-Making Does Not Always Make Popular Roads <i>J. D. Ellsworth</i> .....	149
Politics vs. Good Roads..... <i>Burton H. Allbee</i> .....	166
Political Party. The League of American Wheelmen as a <i>Sterling Elliott</i> .....	175
Philadelphia, Streets of .....	261
Pathmaster, The.....	284
Plan for Raising Road Money..... <i>J. M. Marty</i> .....	313
Prairie Country, Macadam Roads in a .....	316
Rainmaking, A Remarkably Successful Attempt at .....	5
Road Building Project, A Most Remarkable .....	12
Road, The Universal..... <i>Chas. E. Duryea</i> .....	23
Roads, The Drainage of..... <i>W. H. Breithaupt</i> .....	32

	Page.
Religion, A New Use for.....	<i>Sterling Elliott</i> ..... 43
Road Problems.....	<i>Sterling Elliott</i> ..... 61
Rural Free Mail Delivery.....	<i>John M. Stahl</i> ..... 86
Rhode Island, Road Question in.....	<i>Gov. D. Russell Brown</i> ..... 93
Real Estate, A Remarkable Rise in.....	<i>Sterling Elliott</i> ..... 96
Road of the Future, The.....	<i>W. L. S. Bayley</i> ..... 130
Road Governor, A.....	<i>Levi Knight Fuller</i> ..... 153
Roadside Wilderness, The.....	<i>C. M. Plumb</i> ..... 159
"Roadlets".....	<i>W. L. S. Bayley</i> ..... 275
Roads and Carriages.....	<i>Sterling Elliott</i> ..... 295
Report of Carriage Builders' Road Committee ..	<i>C. F. Kimball</i> ..... 298
Road Speech to Carriage Builders.....	<i>Sterling Elliott</i> ..... 310
Sault Ste. Marie, Mich.....	<i>Geo. A. Cady</i> ..... 6
Sign Which Ought To Be Duplicated Many Times, A.....	..... 48
Studio Notes.....	<i>Stamson</i> ..... 50, 260
Sprinkling Country Roads, Advantages Gained by.....	..... 80
September Menu.....	..... 164
Side Paths.....	<i>C. T. Raymond</i> ..... 263
Speed of Horses as Affected by the Condition of the Road	
	<i>Budd Doble</i> ..... 273
Telford, Thomas (frontispiece).....	<i>Sterling Elliott</i> ..... 29
Tariff, Good Roads and the.....	<i>Sterling Elliott</i> ..... 119
Tax Land Value Only.....	<i>J. W. Wells</i> ..... 139
Tar Heel Trail, The.....	<i>Bill Nye</i> ..... 144
The League of American Wheelmen as a Political Party	
	<i>Sterling Elliott</i> ..... 175
Tires and Track.....	<i>C. F. Kimball</i> ..... 307
Universal Road, The.....	<i>Chas. E. Duryea</i> ..... 23
Venezia.....	"Le Bert"..... 251
Wagon Road, How a Woman Built a.....	<i>Edward W. Perry</i> ..... 17, 140, 270
Who Should Repair the Road That Is Opposite a Man's Farm?	
	<i>Gov. Reynolds of Delaware</i> ..... 30
What Street Improvements Have Done for Cincinnati	
	<i>Michael G. Heintz</i> ..... 35
Why People Should Build Their Own Roads....	<i>Gov. C. Matthews of Indiana</i> ... 90
Wide Tire Information Wanted.....	<i>Sterling Elliott</i> ..... 163
Why Boys Leave Home.....	<i>Sterling Elliott</i> ..... 227
Wide Tire Resolutions of National Carriage Builders' Association.....	..... 309
White People, A Colored Story for.....	<i>Frank Weller</i> ..... 335





THOMAS TELFORD.

# GOOD ROADS.

Vol. 6.

July, 1894.

No. 1.

## JOURNALISTIC ETHICS.



WHEN the editor of this magazine was yet a little boy he remembers being told by someone that it had been, in olden times, considered proper to do unto others as you would have others do unto you.

This thing was recommended in good faith and seemed to have the backing of sundry reputable people. Even now we cannot restrain a belief that

such a plan for doing things might have its advantages. In some respects, however, it is like the adoption of wide tires or the proposed twenty-four hour clock dial: a first rate thing if everybody would do it, but not without its drawbacks when attempted by a minority.

“Do others or they will do you” has been mentioned as among the modern interpretations of antique morality. It is hardly probable, however, that any considerable percentage of our people would care to admit that they were guided by other than the golden rule.

The publisher of a paper or magazine very naturally wants his publication to appear original and interesting, not simply *original* mind you, but also interesting, for if any editor were to print all that is sent to him he could make a most original, and in some cases startling, periodical.

The time-honored jokes about the paste pot and shears are to a large extent “fiction founded on fact.”

That it is decidedly wrong to steal a man's coat, no one would dispute, not even the unfortunate fellow who sometimes does it. But when it comes to umbrellas mankind takes sides, though we are proud to be able to state that something more than half are disposed to consider the acquiring of another's umbrella by foul means, a misdemeanor.

Of course what the future will bring no man can tell but so long as there are two sides to the umbrella question, GOOD

ROADS (\$1.00 per year) proposes to be on the side of the man who buys the umbrella and pays for it, providing of course, that the seller is in good standing.

If even *one* of man's material goods may be taken without shocking the popular sense, how easy it is to overlook the appropriation of ideas and forms of words.

The inventor of an improved device may shout until he is gray (if indeed he wasn't gray in the first place) over that which doesn't happen to hit the popular fancy, even though it ought to, and the public (i. e. you and I) doesn't care a rap whether his children have pie or not, but let him produce a new and valuable result which *does* take and which everybody wants, then see how many rush into his arms and offer to pay tribute? Well everybody doesn't, and if he gets a monument even after it's too late for him to enjoy it, the expense isn't always borne by those who are most benefited.

GOOD ROADS wants to credit the author of whatever it uses, and by the same token GOOD ROADS would like to have credit for what is taken from it.

We are always pleased to see matter which originally appeared in this Magazine copied by others, even though the credit consists in inserting between two sentences in the body of the article the words "says Good Roads."

We have on several occasions seen GOOD ROADS' articles which had been rewritten so as to partially disguise the fact that they were not found on that particular doorstep.

A large percentage of our exchanges, however, are very kind both as to giving us notices and in crediting matter which they copy.

It often happens that it is not possible to tell who is entitled to the credit of a given thing. This is especially true of paragraphs, jokes and verses, which are not originally printed next the margin. If GOOD ROADS goes wrong in these matters we are always glad to be "called back."

In the May number we used an illustrated definition "going into the hands of a receiver," and credited it to one of the cycling papers. We since learn that it originated with the St. Louis paper, Farm Machinery.

Anything appearing in GOOD ROADS and not credited, is supposed to have originated here. We hope our exchanges will give us the benefit of the doubt, if there is one, and we will earnestly try to "do unto others as we would that they should do unto us."

"Study conscience more than thou wouldst fame;  
Though both be good, the latter yet is worst,  
And ever is ill got, without the first."

BEN JONSON.



## A REMARKABLY SUCCESSFUL ATTEMPT AT RAIN-MAKING.

AN EFFORT IN THE HEBRIDES ISLANDS THAT WAS BRIMFUL  
OF SUCCESS.

Lieutenant Boyle T. Somerville, of the English Navy, who lived many years in the Hebrides Islands, tells the following interesting tale regarding the work of a professional native rainmaker. Toward the end of the year, just after yam planting, there came an unusual period of drought, so that an inland tribe in the island of Ambrym went to its rainmaker and demanded his immediate attention thereto.

He at once set to work to weave a sort of hurdle of the branches and leaves of a tree famed for its rain producing qualities, which, being finished, was placed, with proper incantations, at the bottom of what should have been a water hole in the now parched bed of the mountain torrent. There it was then held in place with stones. Down came the rain; nor did it cease for 48 hours, by which time it had become too much of a good thing. Soon the rain-producing hurdle was quite 10 feet under water in the seething torrent, and the people, much to their dismay, saw that their yams and the surrounding earth were beginning to wash away down the hillsides.

The lieutenant continues: "Now mark what comes of fooling with the elements! No man of the hill country was able to dive to the bottom of the water hole to pull up the hurdle with its weight of stones, so the merciless rain still held on. At last the shore natives, accustomed to swimming and diving, heard what the matter was, and some of them coming to the assistance, the compeller of the elements was recovered from its watery bed and—the rain stopped!"

It is such a coincidence as this, happening perhaps once in a decade, which causes this people, now thoroughly Christianized, to refuse to give up their rain doctors, although all other outward forms of rank superstition appear to have been freely abandoned.—*Louisville Courier-Journal*.

### NO MAN WHO WORRIES IS HAPPY.

When my drafts come back from the haughty banks,  
"Protested" in cold black type,  
I have one reason for hearty thanks,  
I can always "draw on" my pipe.

—*N. Y. World*.

## SAULT STE. MARIE, MICH.

“A SMART LITTLE CITY BY THE INLAND SEA.”

*By Geo. A. Cady.*



GEO. A. CADY.

THE location of Sault de Ste. Marie is on the rapids where, on the St. Mary's River, the rocky bottom of Lake Superior crops out, spilling its crystal waters over into their passage-way on down to Lake Huron, sixty miles below. Lake Superior is 15 miles above the falls. The early history of the Sault as a military post, Missionary station (1668) and camping ground of the Ojibwa, Ottawa and some other Indian tribes, when engaged in fishing, are familiar facts to every student of the history of the Northwest. The Ojibwas were named by the French explor-

er, Sauteux, because the Indians made their home at the Sault. Its commercial importance and growth have taken place largely in the past dozen years.

Before the first ship canal and locks were constructed, the village of Sault Ste. Marie possessed no especial importance beyond lying at the head of navigation from the lower lakes. In that early day before the wealth of the upper Michigan Peninsula in iron, copper and lumber, and the broad wheat belt of the West had been developed, what little commerce passed the Sault was by a portage around the rapids, and thence it was carried by a few small craft up to and across Lake Superior.

We know from tradition and from such early writers on this region as the scholarly Alexander Henry, as well as from Indians now living, that the shore opposite the rapids has, time out of mind, been a favorite spot for the Indian fishermen. Indeed, their right to camp there, convenient to the rapids, has been carefully reserved in Indian treaties until recent times; and so it is that the Ojibwa Indian with his birch-bark canoe has long been an historical figure on the rapids.



THE SOO AS SEEN FROM CHANDLER'S HILL.

White fish were in an early day very abundant at these rapids, and were then taken as now with a dip-net of peculiar construction, seen nowhere else unless perhaps, in the hands of native salmon fishermen on the Columbia river.

Schoolcraft is supposed to have drawn his inspiration from these waters and scenes when he wrote the lines attributed to him; and voiced a common notion about a white fish diet:—

“And oft’ the sweet morsel  
 Up-poised on the knife,  
 Excites a bland smile  
 From the blooming young wife;  
 Nor dreams she a sea-fish  
 One moment compares,  
 But is thinking the white  
 Not of fish, but of heirs.”

The demands of modern traffic making necessary three canals with locks at this point, one on the Canadian and two on the American side, besides two large water-power canals projected on the respective sides of the river have conspired to make the beautiful rapids and the Indian fisherman, who still plies his dexterous net in those “laughing waters” an antique back-ground for the bustling Soo. It was the Sault—it is now the Soo; the two spellings indicate the change from the dreamy past of two centuries ago to the nervous present.

The Sault is fast fading away. The cunning engineer has run his lines, has said how many yards of earth must go; and so it has come to pass that some of the most beautiful of her wooded shores and islands have perished, as it were, in a day, eaten up by the leviathan dredge—where before, little silver streams had stolen away from the parent river and only came



INDIANS FISHING IN THE RAPIDS.

back after many crooked wanderings among the outcropping isles and boulders. Where now are all those rustic bridges — those winding paths overhung with verdure, those bird-songs, those speckled flashes leaping to the bait — all that labyrinth of beauty and of murmuring waters? The ceaseless thunder and the dash of the main rapids beating itself into spray, alone remain. Trees are razed to the ground; streams are choked to death with spoil rock; the song bird has no where to rest his wing; the fairy bits of earth, once beautiful gems that only flowing waters can make so beautiful, are a waste of up-turned rock; and we have instead yawning depths in the earth where the dynamite boom affrights with its repeated thunderous peals, that echo and re-echo away among the hills. The true lover of nature weeps at what civilization has wrought.



SPRING SCENE ABOVE THE GREAT LOCKS.



INDIAN MAIL CARRIERS WITH DOG TRAIN.

Turning to the present and the future, nature has made the Soo a city of great possibilities. First to challenge attention is her undeveloped water power with eighteen feet of fall within a half mile, at the rapids; and all Lake Superior for a mill-pond. Lake Superior is fifteen miles above, but that distance represents a fall of only 1-10 of a foot.

The greatest fresh water commerce in the world pays tribute at her door as it passes through her locks, already the largest in the world; while her third locks now building to replace, but on a grander scale, the old or first locks of 1855, will be ready for use in 1895 or 1896. In 1893 the total number of registered and unregistered craft passing the canal of 1881 was 966, carrying upwards of 10,000,000 tons of freight and more than 18,000 passengers. The valuation of these vessels was upwards of forty-one millions of dollars, and their freight earnings more than nine millions of dollars.

Her pure water supply from Lake Superior's basin of Potsdam sandstone is soft and sweet, and claimed to be unsurpassed for fine paper manufacture.

The transmitting possibilities of electricity combined with cheap water power is destined at no distant day to enlarge her borders and make her the Mecca of the manufacturer. The water power is already utilized to a limited amount of horse power, for domestic and public lighting, and for street car and other mechanical propulsion. Those mighty waters rushing to the lower level can be harnessed to do a prodigious work on shore.

Her shipping facilities by rail and water are unsurpassed, as she lies in the direct path of both sorts of commerce from the interior both ways to the sea-boards.

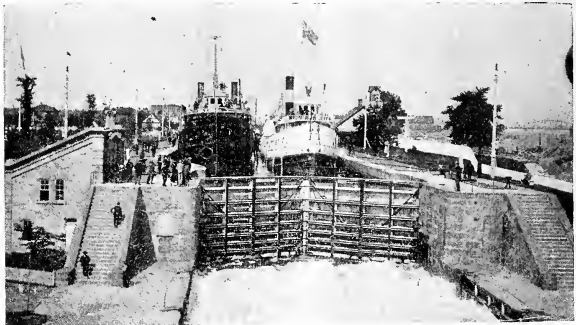
She is a delightful summer resort, and her bracing ozone needs only to be once known to be ever after prized as a nerve



THE OLD LOCK OF 1855.

tonic and invigorator. Her neighboring forests and streams are the delight of the sportsman, and August camping parties are a feature of the social and family life of her eight thousand mixed population.

Her trade in ice, fresh meats, milk, and fresh and salted fish is each year increasing with the lake marine; some of the largest vessel interests have opened supply depots here from which to victual and equip their large fleets on their trips between the lower and upper lakes. This is no small factor in the Soo's increasing trade, and will continue after the government works are all finished. The farming interests around the Soo are fast developing up to the opportunities, and will help to fill her with the products that are so much in demand.



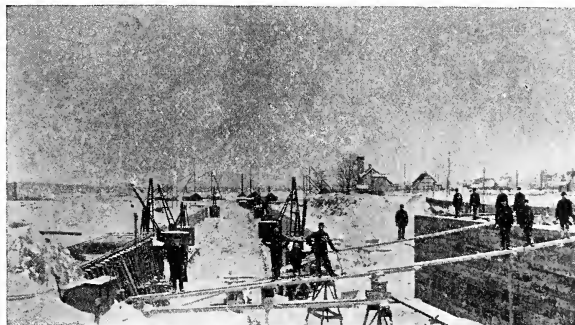
LOCKS OF 1881, SHOWING VESSELS BEING LOWERED



INTERIOR OF THE PRESENT LOCKS, PUMPED DRY FOR REPAIRS.

The State of Michigan has legislated wisely for the lake cities in the enlightened policy of artificial fish culture — which is nowhere more appreciated than by those engaged in Lake Superior and Lake Huron fisheries, which so largely use the Soo as a base of supplies. The planting of fish artificially hatched is a demonstrated success, and the increase in the adult supply is said by fisherman to be very marked.

In time the city can and will be a city of macadam streets, material for which lies about in large boulders. She needs resolutely to abandon as utterly worthless her past plan of spending taxpayers' dollars on dirt roads; and continue the crushed stone pavement so well begun. Her present good roads are those traversed by the propellers.



NEW LOCKS IN PROCESS OF CONSTRUCTION.

## A MOST REMARKABLE ROAD BUILDING PROJECT.

**P**ROBABLY the most daring venture in the way of earth road construction that the world has been introduced to, is the proposed highway across the Irish Sea, and connecting Torcor Point at the North of Ireland with Great Britain at Deas Point, Scotland.

This stupendous sample of modern road engineering will be 14 1-2 miles long and 300 feet wide at the top. The most remarkable feature about it is that the filling for a part of the distance will be fully 400 feet deep.

The wash of the sea will make it necessary to have the bottom of the embankment upwards of a mile wide. As this road crosses the North Channel where the current is very strong it is proposed to build into the embankment several power houses through which the water may pass, and act upon water wheels thus furnishing a large amount of power which can be transmitted by electricity to both the countries which are to be connected by this important wagon road.

It is proposed to run a double track across the artificial isthmus, on which electric cars may be operated by the force of the current. (The current of water acting through the electric current.)

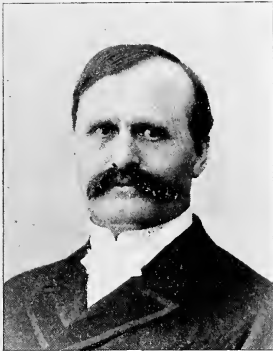
That this is a most unique and extraordinary scheme no one will deny. It seems extremely practical, however, being only a question of money, with a possible doubt as to whether there is enough free soil in Ireland to build that end of it.

If this thing is done, and there is no good reason for saying that it will not be, we may next expect to hear of a dirt road across the English Channel. Those who have crossed it on shipboard in rough weather will understand the advantages of a good solid road "built from the ground up." Imagine a traveller crossing the English Channel while calmly seated in a parlor car and enjoying meanwhile the full possession of his faculties (and his dinner.) It is entirely within the possibilities and those who are in good health and not too old will probably live to see it.



## GOOD ROAD MOVEMENT IN CALIFORNIA.

BY GOVERNOR H. H. MARKHAM.



Gov. H. H. MARKHAM.

THE good roads movement is of recent origin in California. Previous to the past year but two counties had given attention to road economics as now understood, and even in these counties the activity was confined to that class of roads known as gravelled highways, and which do not stand first among roads.

The State is one of vast proportions. Its extent is so great, its soil conditions, its altitudes, temperature, and geological formations so peculiar, that it may well be said that no general system of road construction or road laws can well be made appli-

cable to all sections of the State.

For these reasons among others, our road legislation has never been satisfactory. We are now, however, operating under a law that is a closer approach to the ideal than any we had prior to last year, because it moves on the principle that that government is best which is brought closest to the people. Under this law it is quite possible for the people of any section to set up a system suited to their local conditions and needs. Under it they can vote almost any expenditure they choose for road purposes, and for any system that most impresses them.

Good road material is plentiful in the foot-hill and coast counties, as a rule, but excepting gravel which cannot be classed as among the best, is, as a rule, scarce in the valley sections, involving a considerable cost for hauling.

Early in the summer of last year, (1893,) the Sacramento County Humane Society resolved to set the good road movement in motion in California. A committee of that society called upon me and laid bare the plans for a State Road Convention and the necessary prefatory education of public thought in that direction. I reflected upon these plans and found them so far in harmony with my own views of beginning

the good work, that Executive consent was given to the use of the name of the office in commendation of the scheme. I signed an endorsement therefore for the call of a convention; and agreed to appoint the delegates at large.

The society then moved upon the press of the State and secured the publication of numerous articles upon road economics. These were fruitful of much good and in a remarkably brief time the whole people were engaged in a debate as to roads, ways and means, etc., precisely as had been anticipated and desired.

The next step, was to sound the several county surveyors as to their views on road questions and their willingness to gather and contribute certain statistics relative to road conditions and expenditures in their counties that the same might be laid before the convention. For clearly the people of California up to that time were unaware that they were pursuing a road practice far more costly than one that would give them permanent good roads. At least the few who realized the wastefulness of the prevalent system, had failed to make much of an impression upon the public mind in that direction.

Most of the surveyors fell in with the plan heartily, and such a showing of bad economic and physical conditions resulted as amazed the people. For instance, in one of the largest fruit-growing counties it was shown, in the ten years next before 1893, more money had been expended on road work, by some thousands of dollars than would have built 300 miles of permanent macadam sixteen-foot road, and have paid for maintenance of the same for the ten years, interest on the aggregate sum at 5 per cent. per annum and have provided a sinking fund to discharge the principal in five-year payments, in twenty or twenty-five years, while all the time the county would have enjoyed the benefits accruing from the improved roads. Yet the surveyor reported that in that county in 1893 there "was not one mile of road worthy to be called good," and that all the highways the county had could be duplicated for a small sum, say \$25,000 or even a third less.

Presently the Humane Society reported to me that the Supervisors of Sacramento County had appropriated \$100 to enable the Convention call to be issued, that the Wheelmen's Association had contributed \$50 to the same end, and that Sacramento citizens had pledged themselves to raise all other money necessary to carry on the proposed convention.

The "Call" then issued, and I signed it gladly, and named twenty citizens who were interested in road matters to serve as delegates at large. Other delegates were chosen by Granges, Alliances, Supervisors, and commercial, municipal and scientific bodies; all surveyors and road engineers were added, officials of agricultural bodies, members of Boards of Supervisors and others.

So soon as our call issued, the press with remarkable unanimity endorsed it. I have yet to hear of a single print that did not approve the scheme. The people received the proposition most kindly, and the convention came together in September, in the Capitol, as fine a body of representative citizens as I have seen.

I cannot go into the details of the proceedings. It must suffice to say that it was in session two days and that it planted the seed which is to give us ultimately a good road system all over the State, perhaps not an ideal one, but one that will, ten years hence, make us wonder why for forty years we have put up with present conditions.

We in California are now thoroughly impressed with the fact that good roads mean advanced civilization, better conditions of society, economic and better living, ease of transportation, saving of time—the most precious of capital—and the broadening of the invitation to live rural lives instead of flocking into cities and towns. We daily realize that all the blessings that flow from firm, humane, smooth, rapid, well-kept highways elsewhere, will here, under our favoring skies and in our mild climate, be greatly augmented.

The convention made itself a permanent body. It elected an executive committee and an educational committee. It declared in favor of wide tires, macadam roadways, narrower roads, through or main trunk lines, and indicated a disposition to favor later on a system of State highways. On that point, however, there is a great difference of opinion. Most Californians, it is believed, think that self-helpfulness will be best conserved by putting road construction upon counties alone, since there are sections in our State where first-class roads never will be constructed, and which nevertheless pay into our common fund considerable sums of money, as in the upper timber and some mining regions for instance.

The convention was about evenly divided in advising the issue of bonds to procure means to build good road systems at once. The Grange and Alliance men, as a rule, fought all bond and all debt-creating propositions, though admitting that the present annual expense under the uneconomic old-fashioned system of road districts, and dirt and gravel roads, undrained and ill-constructed, is far more than the interest on a sum necessary to construct permanent roads that may be kept in repair at low cost, and that in addition the sum expended under the present system will in a given group of years, say twenty, exceed the interest and the principal of a sum sufficient to construct and maintain good modern roads.

As a result of that convention there has been more practical information disseminated among the people on the road economics question in the last ten months than in the whole pre-

ceding years of our State history. One county has acted already, borrowed a quarter of a million dollars and gone to work to construct permanent roads. In all the counties there has been agitation, public and other debates, lectures and Grange discussions on the subject of which they knew little before. Prejudices against road engineers have disappeared, scientific road-building has gained a hearing, essays on road building, have filled the papers and magazines, and on all sides there is an enlightenment and the gradual disappearance of ignorance and old-time prejudices.

I am entitled to little credit for this move as compared with the Hon. J. A. Woodson of Sacramento, who was my most intelligent advisor and one of the most active promotors of the whole scheme.

The outlook is very hopeful for the State in the matter of roads. When the present uncertainty that paralyzes industry, trade and production disappears, the agitation will be renewed, and the friends of good roads have reason to believe that there will be remarkable activity throughout the State in the matter of permanent road construction. Already the President of the Committee is preparing his call for reconvening that body.

We need good roads because of our great distances, rainless months and sparse population. As it is, we are crippled badly in transportation of products for want of even passable roads. We are taxed enormously for bad roads because of long hauls, broad tracks, small population and climatic peculiarities. So too we find, that those we would have come amongst us are repulsed by our road conditions and will not be convinced that behind our poor highways lie rich possibilities, which if told, would sound like romantic tales. They are accustomed to judge communities by their highways, and to expect only poverty, laziness and unthrft, behind ragged, ill-kept, dusty, rutted and at some seasons impassable roads.

We are becoming a horticultural State pre-eminently, and fruit carriage to market for shipment is of first importance to us, and in it good smooth roads mean larger gains. We are a tourist State and good drives are a necessity to us. We are an agricultural State with lands richer than fabulous mines and capable of supporting five millions of people easily. But we cannot sell lands to people who cannot approach them except with the greatest discomfort. These are but a few of the reasons peculiar to California that assure us that our people will not let the good road agitation die out. As a rule the people here are not in favor of National appropriation for road purposes. It is not deemed a proper function of Federal government. All such work is State work and should be State work alone, in order to encourage self-helpfulness.

## HOW A WOMAN BUILT A WAGON ROAD.

BY EDWARD W. PERRY.

*(Continued from June Number.)*

WELL, we began work as quickly as possible, that we might get teams and men while the roads were so bad that they could not haul hay or grain to market, and the fields were so soft that they could do no work in them. We opened our big gate and invited everybody to freely use our new road, as soon as our macadam was completed as far as the gravel ridge. We built a good bridge across the creek, and on a level with the top of the gravel. Then we spread the gravel upon the old highway beyond the place where my land ended and we had to leave the fields.

Folk who used the new road were loud in praising it; but a few weeks afterward some of them called us fools for throwing away so much money on a private road, that there would be no need of using, except during a few weeks of each year. It was considerably longer than the straight road through the bottom, anyway. These fellows had already forgotten how they had been for weeks cut off from market, and, thanks to our work, they had delivered their grain almost as early as we had. You see, the road on the higher ground had dried out long before that in the bottom had, and our macadam and gravel carried them around the mud and helped them out mightily — for which some were grateful, while there was need of using our road.

We had a company organized by that time. Brown, the banker, was president, and Keene, the hard-headed old farmer, was vice-president. That gave a solid appearance, financially, and also inspired confidence in the minds of farmers, for, however jealous some of them may have been of him, they knew from experience that he was a very shrewd and careful manager.

Then we went at work on the land owners near the line of the proposed improvement, and with the business men in town. Only one or two of the merchants would buy stock; the rest simply laughed at us.

“How will that stock ever pay us anything? What dividend will you promise us? When will we get something out of the thing?” they asked. And when we explained that good roads would bring in more trade they laughed at us again.

“We get all the trade there is, now; and your road making isn't going to raise more wheat, or corn, or hogs, is it? It will not make the farmers buy more goods of us, will it? If you could get a charter, and collect tolls, then we might take stock in the thing; but the legislature will never give a charter for a toll road.”

There was nothing for it but to bide our time, and hope for a change for the better. We argued, whenever we had a chance, that the county should issue bonds, and go into the general improvement of its roads. We tried to show that the saving in the wear of wagons, harnesses and horses, in time, in feed and in other ways would alone pay the whole cost, and more; and then people said that we were getting tired of the job, and wanted to saddle it on the county.

Wife and Kate managed to have some of the more prominent people, the merchants, bankers and manufacturers, come out to tea, or to luncheons, pretty often that summer, and the young editor of the liveliest of our county papers came oftener than many of the others. One result was that he had a good deal of matter in his paper that year about roads. Another result was—but that is another story, which our Grace and the editor may prefer to tell for themselves.

Meantime the wives and daughters of others interested followed Mollie's example, and we who lived along that five miles saw the gayest summer ever known on that stretch; for there were tea parties, and dinners, and picnics and other gatherings without number. It became a regular custom for the town folk to drive out in the evening, even when there was no formal gathering. My wife worked hard, Kate helped efficiently, Grace took new delight in helping to entertain, and even poor little Nelly Sullivan began to come out of her shell, to lend a hand. Meeting so many young people helped her forget the lover she had lost by the mud.

While the roads were dry, hard and tolerably smooth and dusty, our road improvement scheme seemed dead, so far as the farmers and most of the merchants were concerned. The farmers wouldn't drive over our stone road. It was too far around, and it would hurt the horses' feet to go so much on hard stone; and they weren't going to help pack solid a private road, that might be shut against them as soon as it had worn smooth. If we wanted a stone road, why we might make it for ourselves; they weren't going to lame their horses to help make our road, for nothing.

These matters came to our ears, of course, and while some of us could laugh at this exhibition of human nature, they vexed the women. Molly is a rather level headed woman, but even she became vexed by the stupidity of our neighbors.

"I shall urge that the road be closed against all who are not stockholders," she declared. And she did, but we patiently awaited our time.

There was a dry, cold winter, with plenty of snow and good sleighing, and the outsiders laughed at us more than ever. But spring opened early and very warm. The snow went in three or four days, then there were frequent rains, and the roads were

a sight to behold. Then the folk who could manage to reach our gate at all turned in there confidently expecting to use the stone road from there to town. They found the gate closed, and had to come to the house to beg permission to open it. They were always welcomed, and if there were women in the party they were warmed and fed. Of course there was much discussion of the wretched condition of the roads, and, when the interest seemed greatest we would give them copies of the county paper in which there was sure to be some argument in favor of road improvement. We would gladly have given other matter of the kind, but then there were no such beautifully illustrated publications as we can get now, about good roads.

When March was nearly gone most of the folk who came that way had been given an opportunity to read some of the gospel of good roads. If they hadn't read it, it was no fault of ours. After that, when one asked for permission to drive through our fields we would tell him that he should step into the bank and buy a few shares of our stock. A very few did so, but most merely promised to think about it. By that time the mud was hub deep in all the dirt roads.

Then Molly suggested that we should bring some certificates of stock to the house, and close the gate against all who had not bought at least one share.

Well! It would have done you good to see them squirm.

"It's an outrage, a robbery! I won't pay it! It's an infernal shame to treat neighbors so!" more than one declared.

"Very well; sorry you think so, but those are the rules. And there's the public road, down in the bottom. We haven't taken it up; in fact we haven't done a thing to it."

Not only was it a fact that we had not done anything to the old road, but it was also a fact that no one else had done anything to it, within a year or more. It happened just as wife and I had figured—the pathmaster had supposed that as our new road had been opened to the public freely, it would remain open. So he did no work on what was always the worst bit of road in our district, if not the whole county; therefore it was in a horrible condition, as you may suppose.

Of course several people refused to buy shares, and tried to drive through the bottom. Not one tried that a second time. At last one man who had used our road the preceding spring, and had afterward been offensively jocose about our folly, drove up with a load of hay, for which he could have got \$20 that day, if it had been in town.

"Hello, your gate's locked!" he cried to me with pretence of surprise.

"So I see," I replied. "It is closed to all except stockholders of our road company. But that needn't trouble *you* any; you can become a stockholder easily enough."

"Oh, all right. I'll see you about it when I come back. I'll have some money after I sell this hay."

"Yes, of course; but don't you think it will pay you better to buy a share or two now, than it will to try and drag that load through that muddy bottom?"

"D'ye mean t' tell me y' wont let me go through 'thout I pay for 't?" he harshly demanded.

"No indeed! What I say is that you shall be free to go over this road as much as you wish, as soon as you shall have paid for five shares of our stock, on the same terms as we let other folk have—one dollar down, and one dollar each month for nine months."

"I'll see your road in tophet first. I won't pay any sech money fer th' use of your old road." But, say, now, you're only joking, ye know. I'll buy a share or two as soon as I come back from town."

"When will you come back; you don't live on this road, you know?"

"Why, I'm comin' right back, 'f course."

"Well, I'll do this, as it is you. You go the old road this time, and when you come back I will let you have ten shares at a bargain; five dollars apiece down, and the rest in six months. It may be against our rules, but I'll risk it."

"You go to the devil with your rules, and your stock too, you and your whole cut-throat gang," and he gathered up his lines and chirrupped to his horses.

"Hold on," I called. "I'll make one more offer."

He stopped his team suddenly enough to show that he was most willing to hear the offer.

"It is hardly fair to let a man drive down into that bottom with such a load as you have there. I tell you fairly, you can *not* get through with it. It is all a good team can do to pull a light wagon in that mud. Rather than see you lose a load of hay that is worth twenty dollars I'll make a last offer."

"Well, spit her out!" he cried impatiently, as I hesitated as though considering.

"It is this. You shall have the privilege of using our road, that is always hard and dry, smooth and level, as much as you wish and at any time, for your own teams. All you need to do is to pay me spot cash for twenty shares—two hundred dollars, you know."

"You go to——!" he shouted. "I'll show you that ye'll have to open yer infernal road, 'f there's any law in the land," and he drove down the hill cursing loudly as he went.

That load of hay blocked the mud road for two weeks, and as it was at the culvert no one could have gone around it, if he had tried. But no one did try, for the story spread and those who wanted to use our road paid for stock, and those who didn't either went over some other road or stayed at home.



Of course all this made lots of talk, and we came in for a deal of abuse; but the stock sold, and that was what we wanted. Of course the abuse hurt my wife a little, and the children were furious about it; but Molly laughed her vexation off, and told the youngsters that:

"Those people are only crying because their medicine is bitter, as I think I have known some children to do. They will be much better when they feel its good effects, and will forgive the doctor; as some children I know have forgiven the mother who administered medicine to them."

About that time the president of the bank that was not especially friendly to us, went to Tom Burns — Tom was secretary of our company you know — and said to him:

"What does your company intend to do in the way of road improvement this year?"

"I really can't say," replied Tom. "The matter hasn't been decided yet. Why?"

"Well, to be frank with you, I thought that it would be a good thing to macadamize Decatur avenue?"

"Yes, it would," replied Tom cordially. "Let me see, you have considerable property along that street, haven't you?"

The banker laughed.

"I may as well come down to business, Tom. How much will it cost me to induce your company to carry its improvement over to that avenue, and to put in a good macadam on it? It is only five blocks from the direct line of your road, and is not really out of your way in coming to the business part of town."

"You will have to buy some of our stock; I don't know how much."

"Very well. I am willing to take a pretty good block. I think I can sell some of it to others who own property on Decatur Avenue. Willing to risk it anyway."

Tom came out that evening, and told us about the conversation with the banker.

"Why not let him pay for what shares he wants by deeding lots to the company?" asked Molly. "If the improvement increases the value of the property as much as we believe it will, the company will do well; if it does not raise the value, the banker will not have lost his money. Why shouldn't the company buy other land that way? Then it will have at least a good chance to make those dividends that people have worried about."

Two weeks later the *Progress* published this item:

"The Good Roads Company has been quietly picking up the best lots on Decatur avenue. The president of the First National Bank has this week transferred lots worth ten thousand dollars, and taken shares of that company in full payment. One need not be very sharp to see that this indicates that the

early improvement of Decatur avenue will take place. Property along that street is rising rapidly in value since this transaction became known.

“It is a significant fact that the shrewdest of our business men, like the president of the First National, are quietly picking up the stock of the Good Roads Company; and that those who have exchanged land for that stock were shareholders before, is another significant fact. Of course they have inside information, and so know what the profits of the stock will be.”

In its next issue *The Progress* announced that:

“The Good Roads Company has bought the northeast quarter of section 12, two miles from the village limits, and beside their macadamized road. The company will lay the plot out with gracefully curving streets, every one of which will be at once laid with telford pavement. In other ways the place will be beautified and made as parklike as possible. A number of dwellings will be built during the coming summer on some of the most eligible of the sites on the forty.

“In this enterprise will be seen an evidence of the benefits of good roads. Without the macadam road which connects this quarter section with the streets of our beautiful and thriving village, no one would have dared to undertake to make homes so far from the busy centre of town; but that road makes it quite easy to ride in vehicle or on bicycle from one's office to his home in the country. The drawback is that one will have to ride or drive through our streets to reach the macadam. We feel sure, however, that the time will come when our streets will be as even and firm, as clean and dry in bad weather, and as free from dust in dry weather, as that five miles of country road has been during the last year.”

These articles brought many offers for stock. People were full of curiosity about the plans of the company, but we told little or nothing of our purposes, and made no promises. In fact there may have seemed to be a trifle of mystery about it; but the shares sold none the less freely because of that.

*(To be Continued in August Number.)*

## THE UNIVERSAL ROAD.

BY CHAS. E. DURVEA.



CHAS. E. DURVEA.

FROM the dawn of history to the present, civilization and roadways have been linked together. Whether landways or waterways, whether traversed by ships or slaves, canal-boats or camels, canoes or cyclers, the progress of any country has been reflected by its system of roads.

Previous to the harnessing of steam, water-ways formed the great arteries, and so dependent were the people on them that it may be said with truth, that civilization was a matter of shore-line, and few large cities exist to-day without water communication.

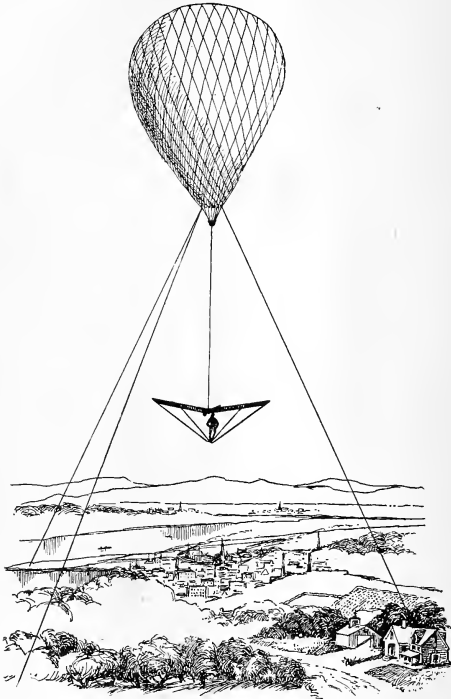
With the railroad and steam power came the development of large areas previously valueless; while every day, tracks and equipment are made better and faster, and ocean steamers larger and swifter, to meet the needs of a civilization that grasps every chance for progress.

Recognizing these facts, no prophet is needed to call attention to a medium enveloping the earth, free to all, and capable of not only supporting the traveller but of propelling him under certain conditions; or to predict that it will soon be mastered and made to serve as a roadway.

Waterways are limited in number, often inaccessibly placed, often too wide for convenience, too shallow, narrow or rocky for use; landways are turned from their course or rendered less valuable, by hills, swamps, rocks, streams and minor obstructions too numerous to mention; but the air reaches everywhere and offers straight lines free from obstructions, with smooth riding at high speed and at low cost. As a roadway it would seem to be ideal. By its use the whole earth and sky would be our playground. The flying machine would do more to civilize and Christianize the world than hosts of missionaries can now do, for both Darkest Africa and the North Pole would be near at hand.

While we agitate the good roads question let us not forget the universal roadway that lies all around us.

“But,” ask the hard-headed practical man, “can it be used, and if so, how?”



PERSPECTIVE VIEW OF THE PROPOSED DURVEA FLYING SCHOOL.

NOTE—The artist has shown this as located directly over a church spire. We would suggest, however, that a haystack would be more comfortable to look at, and would, no doubt, be a greater inducement to pupils.—[Ed.]

It can be used. Scientists and engineers who have given the subject thorough study are unanimous on this point.

Nor is the “how” any longer a question. The aeroplane is the machine to use; the soaring bird, the model to copy.

We can build the aeroplane, light, strong, and inexpensive; we can equip it with gasoline vapor explosion motors, so powerful in proportion to their weight, that when provided with a proper screw propeller they can lift themselves bodily into the air or drag many times their weight, supported by the aeroplane, through the air at high speed.

These things we know. Many experiments by various experimentors have proven them.

"But," asks the doubter, "can we manage such a machine if we had it?" The answer is, with practice, yes.

Practice and practice alone is the one thing lacking. The lack of skill in the management of our experiments is the sole cause of failure in our attempts at flying to-day.

We can acquire the necessary practice. This is not the statement of an enthusiastic theorist but a statement of fact. The proof is, it has been done. During the past summer Mr. O. Lilienthal, of Berlin, has been practicing with aeroplanes of his own construction and with fully successful results in that he starts, soars and alights in an easy, safe and pleasant manner and with his machine under full control. He performs every evolution of the soaring bird except that of continuous flight at will.

He began by jumping from small heights supported by an aeroplane modeled after the crow's outline, and continued his practice with this till able to manage a larger one.

His present method is to run down a hillside against the wind till he has acquired speed, then raise the front edge of the plane and soar out over the valley, gradually settling down and finally alighting, easily and safely. Often a gust of wind has carried him higher than the point of starting, and flights of 1000 feet or more have been accomplished, thus proving conclusively that an aeroplane can be managed successfully.

He is now constructing a larger aeroplane with motor and expects to accomplish continuous flight at will before another winter. His present apparatus weighs 44 pounds and spreads about 160 square feet of surface, which is too small for the 175 pound man using it. Further, Mr. L. is well up towards fifty years of age, and so has passed the time of life when men are most active. If his life is spared there is little doubt about his succeeding in his attempt. He is not only experimenting on the right track, but has shown a most praiseworthy judgment and persistence and deserves success.

The problem, however, is too great to depend on one man alone, or even on a few.

America should come to the front in this matter. Let energetic young men form a soaring club, build an aeroplane and practice with it till thoroughly proficient. Let them equip it with motor and note the results. Their increased activity, their

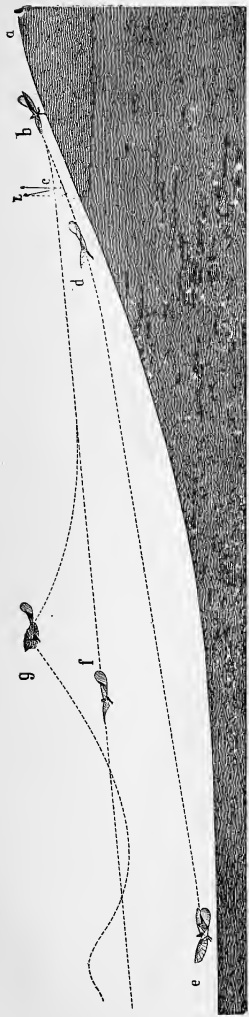
combined experience and their many minds will bring results not to be expected from any one man.

They will meet with more or less ridicule from short-sighted people, irregular and gusty winds will cause slow progress, improvements in the form of the apparatus will take time, but progress will be made and the sport of making 1000-foot jumps on the wind ought to far exceed that of sky-jumping with its record of 120-odd feet, or kindred sport. For those who are not willing to practice as did Mr. L., an easier method may be had, although more costly. Let the aeroplane be provided with a propeller driven by foot-power or some form of motor, and suspended by a single rope under a captive balloon. This method of suspension would leave one perfectly free to travel in circles and "figure eights," and so learn to balance and guide the machine in perfect safety.

After learning to manage properly when in the air, the starting and alighting can be learned by practice on the ground, as did Mr. L.

If foot-power is insufficient, electricity or compressed air could be carried to the machine from the ground by the way of the balloon and supporting rope. This method permits the use of as great a power as may be desired, for as long as needed, without the costly and light motor and generator needed for free work. As skill increases, less power will doubtless be required until, on selected days, we may find athletes soaring on the wind at will as do the birds without the use of any driving power. Success would seem most sure, however, with a machine arranged to use foot-power at least, for doubtless the machine may need help through an eddy of air as does the bird which flaps occasionally.

The time is ripe for practice, the sport will be magnificent, success will surely follow. Who will start the first soaring club and be first to use our universal roadway?



THE above cut is printed through the courtesy of *Aeronautics*, an interesting journal published at 47 Cedar Street, New York, and devoted to the subject indicated by its name. The article of which this cut and the subjoined explanation formed a part, was translated by *Aeronautics* from *Zeitschrift für Luftschiffahrt und Physik de Atmosphäre* for November, 1893. The author, Otto Lilienthal says: "In the annexed figure (5) several lines of flight are illustrated. The dotted line *d e* shows the path traversed in a calm. At the top of the hill, at the point *a*, a running start is taken with as high speed as possible and with wings lowered. The steeper the hill the better. Then at *b* you raise your wings a very little in front and try to glide along as close to the ground as possible, with your legs extended to the front. The diagram at *C* shows how the air resistance *L* has at the same time a supporting and propelling force or component. Soon our velocity has increased so much that at *d* we can change to a flatter inclination. Thus at an angle of  $90^{\circ}$  to  $100^{\circ}$  we approach the valley and do not raise our wings in front till the very end at *e*, when we apply a strong force by throwing the upper part of our body back. Then the pressure of the air, acting suddenly at the front, checks the motion, and we drop on to our feet quite gently, just as if we had jumped, without wings, from the height of a chair.

When there is any wind the motion is still more gentle. Flight against the wind, in reference to

the earth, is in all cases slower, as, of course, the *relative* motion of the air and the apparatus governs the speed. The relative velocity attained is felt by the strength of the breeze striking the face while flying. A convenient device would be a little indicator pressure gauge in the front of the apparatus, on which we could constantly read the relative speed of the air. This would not involve any appreciable increase in the resistance.

Although the wind compels us to resort to various extraordinary manœuvres, it also furnishes us an opportunity for testing the real value and scope of sailing flight. By our calculations, based on experiments with arched surfaces on a small scale during windy weather, extended and prolonged sailing flight can be explained without further trouble. With wings of a proper form and position, the wind needs only to reach the necessary strength in order to keep the experimenter from falling. Even with light winds of 4-5 m. velocity per second (9 to 11 miles per hour), we can with some little practice glide along at the slight angle of 6° to 8°, as is shown in the line *b f*.

\* \* \* \* \*

The greatest velocity of the wind at which I dared to start was about 7-8 m. per second (9 to 11 miles per hour). In these flights I often had a very interesting though not dangerous struggle with the wind, in which I sometimes came to a state of absolute rest, and was suspended in the air at one point for several seconds, almost exactly as the falcons of the Rhinow Mountains are. Sometimes I was suddenly lifted from such a position of rest many meters in a vertical direction, so that I became alarmed lest the wind should carry me off altogether. As, however, I never ventured out except when such gusts were exceptional, I was always able to continue my flight and to land safely. The line *b g* shows a wavy course, brought about by gusts, during which I rose to the height of my point of starting.

\* \* \* \* \*

There can be no doubt, in my opinion, that by perfecting our present apparatus, and by acquiring greater skill in using it, we shall achieve still more favorable results with it, and finally succeed in taking long sails even in rather strong winds. Even without considering the chances of such continued sailing without effort, the results already obtained provide us with data as to the energy to be expended if horizontal flight is to be prolonged by mechanical means.



## THOMAS TELFORD.

(FRONTISPIECE.)

WHEN Macadam demonstrated the fact that broken stone was superior to gravel as a surface for roadways, he had done but a part of the important work of laying out for future generations, a general plan upon which roads should be constructed. However good any structure may be, it cannot endure without a suitable foundation and this is just as true of a road as it is of a building.

Thomas Telford was a firm believer in the value of a good foundation for roads, and as a justification of his faith, it is interesting to note that all the best stone roads of to-day are built with a "Telford foundation."

Telford's father was a shepherd, but he thought best to have "Tom" follow some other line, accordingly he was "bound" to a stone mason, and in spite of the fact that he did at times try to write poetry, he was a faithful apprentice and at the age of twenty-two years he was considered a competent workman and began working as a journeyman at Langholm, Scotland, his wages being paid at the rate of eighteen pence per day. He afterward took jobs of stone work on his own account, such as grave stones and "ornamental door heads," and even some modest houses.

He afterward went to London where he should find more room to grow. There he worked as a hewer of stone on various important buildings and finally at the Portsmouth Dockyard, until, as he expressed it in a letter to a friend, "My proceedings are entirely approved by the commissioners and officers here—so much so, that they would sooner go by my advice than my master's, which is a dangerous point, being difficult to keep their good graces as well as his." When the Portsmouth work was finished, Telford took up surveying and afterward became an engineer, giving especial attention to bridges and roads. He also appreciated (as many of our modern roadmakers do not) the importance of perfect drainage. It was his custom to put a cross-drain under the road every hundred feet, and opening into the side ditches at both ends.

Thomas Telford died in 1834, at the age of 77, and during his life accomplished an immense amount of practical engineering work.

## WHO SHOULD REPAIR THE ROAD THAT IS OPPOSITE A MAN'S FARM?

BY GOVERNOR REYNOLDS OF DELAWARE.



GOV. R. J. REYNOLDS.

MY observation is that the fewer persons engaged in a work the greater responsibility, and consequently the work will be done better and much more economically. If all roads could be worked by the parties owning the adjoining or adjacent farms, our public roads would, I think, be the better for it. For instance, I own a farm on which I now live, through which there runs three-fourths of a mile of public road. This road is worked by a man six miles away, who never sees it more than a few times a year. If I worked this road I would see

it every day and when a place wore out in my road I would send a load of clay or stone immediately and apply the stitch that saves nine. Besides, the same spirit of pride that induces me to keep my fencing in good repair and my headroes free from bushes and briars would induce me to keep my road in good condition. There would spring up a rivalry among the farmers as to who keeps the best road. I am a farmer myself and know a farmer desires to excel his neighbor in fine fruit trees, wheat fields, and grass lots. At country stores of evenings the general discussion is who in the neighborhood has the nicest farm and has the best kept fields and fences, and my theory would add: "Who has the best road in the community?" and farmers would have a double incentive to keep their roads in thorough repair. I would let each county assess and collect all money for road purposes—controlled by State legislation, and appropriate said money to the farmers in proportion as they have roads. I would have a committee to look after the roads and report adversely on all farmers who failed to keep their roads in repair and withhold their appropriation

until their work is done and well done. Again, a farmer who has wet land can drain his farm and the roads with the same expense, and save money by the operation. In fact the time would soon come when a farmer and his wife and children would be judged by the condition in which his public road is kept, and if his road is not kept in good repair all would know just where the responsibility lays, and by reporting him to the committee, have his appropriation withheld until his road is put in thorough condition.

Men would be saints if they loved God as they love women.  
—*Thomas.*

\* \* \* \*

We laugh before we are happy, lest we should die without having laughed—*La Bruyere.*

\* \* \* \*

Experience is the keen knife that hurts, while it removes the cataract that blinds.—*De Finod.*

\* \* \* \*

How many women would laugh at the funerals of their husbands if it were not the custom to weep.—*De Finod.*

\* \* \* \*

It is not the weathercock that changes; it is the wind.  
—*C. Desmoulins.*

\* \* \* \*

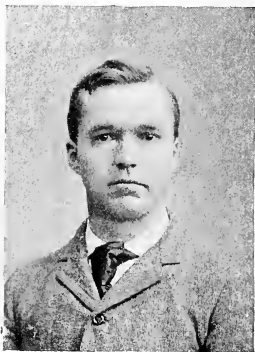
Our happiness is but an unhappiness more or less consoled.  
—*Ducis.*

\* \* \* \*

I cannot see why women are so desirous of imitating men. I could understand the wish to be a boa constrictor, a lion or an elephant: but a man! That surpasses my comprehension.  
—*T. Sautier.*

## THE DRAINAGE OF ROADS.

BY W. H. BREITHAAPT, BERLIN, ONTARIO.



W. H. BREITHAAPT.

A PROPERLY built road consists of two distinct parts: the road bed, and the comparatively thin wearing surface. The former constitutes the foundation of the road, and should, like the foundation of any structure, be practically permanent.

Provision for thorough drainage is one of the most vital essentials in good road construction. No road, however well made otherwise, can endure, or give good service, if it allows water, the most potent of all road destroying agents, to collect and remain on it. Separate provision must generally be made for

sub-surface and surface drainage. Sub-surface drainage has for its object the keeping dry of the road-bed by the removal of underground water. Surfacing placed on a wet, undrained road-bed, liable to destruction by both water and frost, will always be troublesome and expensive to maintain. Surface drainage provides for the prompt removal of all water falling on the surface of the road.

Natural soils are of the following classes: Silicious, sandy or gravelly; argillaceous, clayey; calcareous, containing lime; rock, swamps, and morasses. Silicious and calcareous soils, sandy loams and rock, are not retentive of water, and, therefore, require no underdrains. Clayey soils and marls retain water, are difficult to compact, and are very unstable under the action of water and frost. Sub-drainage of these soils, in a road-bed, is effected by transverse drains, or by longitudinal drains with occasional transverse outlets to the side ditches. Transverse drains should be placed, not at right angles to the centre line of the road, but in the form of an inverted V, with the apex directed up grade. These V's should be 15 to 25 feet apart, depending on the wetness of the soil. They require a fall of about 1 inch in 5 feet. Their outlets from the side of the

road-bed should be blind drains, extending back 3 or 4 feet. These blind drains may be of field stone — selecting such as are not too much rounded — laid to line.

Subsoil drains are best made of unglazed circular tile, not less than 3 inches in diameter, with joints made by means of short sections of larger pipe, forming loosely fitting collars. They should be laid to a depth of 18 inches below sub-grade, which is the top of the road-bed, before the wearing surface is put on. A good longitudinal sub-drain may be made by digging a trench 18 inches deep along the centre line of the road-bed, laying flat stones along the bottom so that a continuous opening, a practical box drain, is formed, and then filling the trench to sub-grade with loose stones. Transverse outlets from a longitudinal sub-drain, can generally be spaced several hundred feet apart. There must always be an outlet at every change of grade.

Surface drainage is effected by having ditches, gutters, or closed drains, at the side of the road, and having the road surface constantly maintained of such form that the water will rapidly drain off. The surface should have a regular fall to the sides, uninterrupted by hollows or ruts. A centre rise, comparatively small toward what was formerly considered necessary, is sufficient. The transverse contour of the surface should be either a section of a circle, or a parabolic curve. The latter is to be preferred on account of its greater convexity at the sides of the road. A straight slope from the centre outward should not be used, as it will wear hollow, and the road will then retain water. For gravel surfacing the rise at the centre of the road should be one fiftieth of the width, for broken stone one sixtieth, giving for a road 16 feet wide 3.8 and 3.2 inches respectively, of centre rise. When hollows or ruts appear they should be filled with gravel or broken stone, whichever the road metal used in the wearing surface may be. It is bad practice to cut a gutter from a hole to drain it to the side of the road. Filling in is the proper course, whether the hole is dry or contains mud. The bottoms of the side ditches should be 2 or 3 feet below the top of the finished road, giving them a depth, below the surface immediately along them, of about 18 inches. Their sides should have a wide flow, so as to prevent all danger of caving in. They are given such cross-section and fall as to rapidly carry away all water coming to them. Where open ditches are objectionable paved gutters, of depth of 6 inches to 8 inches only, may take their place. Or a loose stone drain, like the one described for use as a longitudinal sub-drain, may be used.

Ditches on inclines on which the velocity of water, after heavy rainfalls, would be greater than the nature of the soil can withstand, are improved by having weirs built across them

at intervals. These weirs are of stone, in sufficient quantity, laid dry. They arrest the flow of the water, and so prevent destructive scour of the ditches. A velocity of 30 feet a minute is not detrimental; 40 feet per minute will move coarse sand; 60 feet per minute will move gravel; 120 feet per minute will move round pebbles, and 180 feet per minute will move angular stones 1 3-4 inches thick.

Special care is required to provide sufficient section in culverts for the water which they are to pass. Too small a culvert will bank the water, and flood the roadway. On the other hand if the culvert is too large the cost of construction is unnecessarily increased. The cross section of a culvert depends on the maximum rate of rainfall on, and the condition of the soil of, the watershed the culvert drains; on the form of the mouth and inclination of the bed of the culvert; on whether it is permissible to bank up the water and discharge under head; etc. Culverts are made of wood, brick, stone and vitrified sewer pipe. Wood is perishable and not to be recommended. Brick or stone should be used where a large opening is required. For a smaller one, sewer pipe makes an efficient culvert. If one pipe is inadequate, two laid side by side can be used. The ends of the pipe at the side of the road-bed should rest in masonry retaining walls.

Gutters, ditches and culverts should be kept clear of weeds and rubbish at all seasons of the year. They should be especially gone over in the spring as soon as melting of the snow permits, and again before the fall rains.

AN exchange truthfully says that the human race is divided into two classes — those who go ahead and do something, and those who sit still and enquire why it was not done the other way.

## WHAT STREET IMPROVEMENTS HAVE DONE FOR CINCINNATI.

BY MICHAEL G. HEINTZ.



MICHAEL G. HEINTZ.

CINCINNATI owes the beauty of her situation to the glacial period. Geologists have discovered that immense formations of ice bearing down from the North created the terraces, and moulded the hills upon which Cincinnati is built. But however enchanting and picturesque such a location may be, it presents practical difficulties in the laying out of an extended system of city streets. Thoroughfares must be shortened and directions changed, inclined planes built and viaducts erected, in order to make the streets and avenues conform to the natural surface. These difficulties have

been gradually overcome, until to-day Cincinnati may well feel proud of her system of streets and street paving.

Previous to 1885, the city streets were paved mostly with boulders, some few with wooden blocks, while the suburban avenues were made of macadam, or perhaps were unimproved. On April 25, 1885, the Ohio Legislature passed a bill which has been called "The Four Million Dollar Paving Law." This law authorized the Board of Public Works of the city to pave the streets, avenues, and highways, with granite block, asphalt pavement, or other material. The board was given the necessary power to change grades to conform to the improvements, and to compel the making of sewer, water, and gas connections. The act further provided the method of advertising for bids for the work, the way in which the contracts should be let, and the manner of payment to the contractor after the completion of the improvement. It is unnecessary to discuss those features of the law.

In order to provide a fund for the street improvement, the city was authorized to issue bonds in the amount of \$2,000,000 in the name of the city and payable in not less than ten years

and not more than twenty years from the date of the issue, bearing interest at five per cent. per annum. It was provided that one-half of the cost of the improvement was to be paid by the city at large, out of the funds arising from the sale of the bonds, and the other half of the cost was to be assessed upon the parcels of land abounding and abutting upon the streets improved. Thus while a bond issue of only \$2,000,000 was made, a fund of \$4,000,000 was created, and the act became known in common parlance as "The Four Million Dollar Paving Law."

Much opposition to the bill developed while it was pending before the Legislature. The bond issue was opposed because it would increase the burden of municipal taxation. The Hamilton County Court House had been burned during the riot of 1884, and a new and costly Court House was then being erected. The unprecedented floods in the Ohio river during 1884 and 1885 had submerged the lower business part of the city called "the bottoms" or first terrace, and had done incalculable damage to property and trade. Conservative tax payers argued that their misfortunes were already so great that a \$2,000,000 obligation would be unbearable. On the other hand there was a large proportion of energetic business men who believed that it was of prime importance to pave the city streets at once, and that the increased tax would be met by an equal or greater increase in the values of real estate, in rent, and in the volume of business. The Legislature adopted the latter view, and the bill became a law. From that time on the grind of the crusher, the splash of the concrete mixer, and the blow of the rammer became familiar sounds in the streets of the city. The following table taken from the annual report of Hon. August Hermann, President of the Board of Administration, which has succeeded the Board of Public Works, shows the amounts expended and the number of miles of improvements made during the term from 1886 to 1893 inclusive:

Year.	Amounts Expended.	Number of Miles of Granite, Asphalt, and Brick Paving.
1886	\$197,443.84	10.00
1887	\$213,673.06	21.50
1888	\$355,589.70	34.00
1889	\$254,758.68	35.00
1890	\$212,079.18	39.44
1891	\$210,131.85	42.78
1892	\$219,699.23	55.87
1893	\$526,672.50	70.60

1894 — The estimated cost of street work projected for the year 1894 is \$1,500,000.



Of the 70.60 miles of improved streets, 14.64 miles are of brick, 13.78 miles of asphalt, and 42.18 miles of granite. The mileage and character of streets in the city other than the granite, brick, and asphalt is as follows:

Boulder,	-	-	-	-	86.36	miles.
Macadam,	-	-	-	-	129.12	"
Macadam roads,	-	-	-	-	5.91	"
Limestone,	-	-	-	-	11.00	"
Wooden,	-	-	-	-	1.57	"

The "bottoms," or that part of the city in which the bulk of the wholesale trade is conducted, extends along the Ohio river, and is about 2000 feet in width. It is traversed by Water, Front, Second, Pearl and Third streets, running parallel to the river, and all of which are paved with granite. In the upper part of the city granite and asphalt alternate. Race and Plum streets are the only through streets having no car tracks, and they are both paved with asphalt and afford splendid driveways. The whole city is surrounded by a ridge of picturesque hills, crowned with suburbs, famous for their beautiful shaded avenues and magnificent residences. Some few of the suburban avenues are paved with brick or asphalt, but most of them are of smooth, well-kept macadam foundation.

Figures might be given to show the enhancement of real estate values throughout the city, and especially along the improved highways, but it is unnecessary. Suffice it to say that within a year or two after the enactment of the law some of the very taxpayers who had most strenuously opposed its passage were petitioning the Board of Public Works to improve streets upon which their property abutted. The spirit of improvement among owners of buildings has followed and kept pace with the street improvements. It was no unusual sight to see the owner of an old building begin to tear it down just as soon as the blockade in front of his premises, caused by the pavers, had been removed. Of course, drivers of vehicles select good streets, and often go out of their way to drive over a well-paved thoroughfare. It is more strange, but none the less true, that pedestrians seem to have the same inclinations, and prefer to travel over sidewalks adjacent to an asphalt street. Streets on which few stores have been located have been improved with asphalt, and immediately property owners have begun to remodel their residences by putting in new fronts and metamorphosing their homes into stores. The results are that values increase, rents go up, business prospers, and money paid as taxes to redeem the bonds becomes the capital of the real estate owner and the business man.

Most of the streets built under the provisions of the pavement law of 1885 have been constructed under the supervision

of Mr. H. J. Stanley, the present efficient City Engineer. The contractors, with whom he has had to deal during the progress of the work, universally recognize his efficiency and ability, and the citizens rest assured that their interests are carefully guarded. The board under which Mr. Stanley serves consists of four members, appointed by the Mayor, and is non-partisan. Mr. August Hermann, President of the Board, is the Committee in charge of the Engineer's department, which embraces all engineering, surveying, supervising, platting, record work and the construction of streets, sewers, bridges and sidewalks.

Besides the improvement of the streets, many of the alleys are to be paved with brick on a concrete base. The brick pavement will furnish an excellent roadway and make it an easy matter to keep the alleys clean.

The improvement of the sidewalks of the city has kept pace with the other improvements. During 1894 about 280,000 square feet of artificial stone sidewalks have been laid, and contracts for the same kind of walks have been let for the entire city. House numbers have been changed on the plan of one hundred numbers to the block, and the names of streets, on enameled iron signs with white letters on a blue background, have been attached to house corners at the intersections. In these various ways travel and transportation in and about the city has been greatly facilitated, and Cincinnati has assumed the appearance of a beautiful bride dressed for the marriage ceremony.

"IT IS NOT GOOD THAT MAN SHOULD BE  
ALONE."

A bachelor, old and cranky,  
Was sitting alone in his room;  
His toes with gout were aching,  
And his face was o'erspread with gloom.

No little one's shouts disturbed him,  
From noises the house was free,  
In fact from attic to cellar  
Was quiet as quiet could be.

No medical aid was lacking;  
The servants answered his ring,  
Respectfully heard his orders,  
And supplied him with everything.

But still there was something wanting,  
Something he couldn't command;  
The kindly words of compassion,  
The touch of a gentle hand.

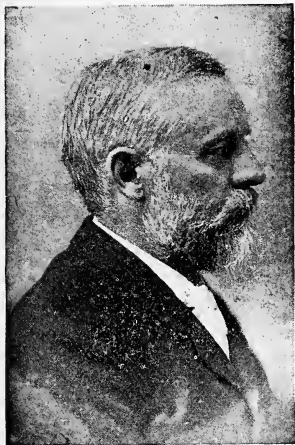
And he said, as his brow grew darker,  
And he rang for the hireling nurse,  
"Well, marriage may be a failure,  
But this is a blamed sight worse!"

— *Boston Courier.*

## THE NATIONAL ROADS CONFERENCE.

TO BE HELD AT ASBURY PARK, N. J., JULY 5 AND 6.

*A Few Words by Gen. Roy Stone, the Government Engineer in charge of Road Inquiry.*



GEN. ROY STONE.

IT was a happy thought of the New Jersey Road Improvement Association to propose a conference of all the kindred organizations and friends of good roads generally, to be held at the seaside in July, coincident with the meeting of the National Editorial Convention.

The motive, purpose and plan of the gathering are well set forth by the Secretary of the association in a letter to a State Commissioner of Agriculture, as follows :

“The conference is for the purpose of promoting organization for road improvement where such organization does not already exist; for strengthening the hands of existing organizations, and

for the gathering and diffusion of general information on the subject of road improvement.

“We, in New Jersey, have reaped the benefit of good organization and its results in practical legislation. Several of our counties have now complete road systems, and road building by State aid is fairly inaugurated. Full details of our experience will be communicated to the conference by those who have administered the State Aid law and those who have benefited by it.

“This is not to be a convention of delegates, but a conference of Road Associations, State, county and municipal authorities, corporations and individuals concerned in road improvement.

“We are in communication with Boards of Trade, Agricultural Societies, Wheelmen's Associations, Wagon and Carriage Builders, Manufacturers of Road Machinery, as well as Civil Engineers, Road Overseers and Supervisors of Roads, and

many citizens interested in but not officially connected with road improvement.

"We meet to interchange views and to give and get all the information we can to promote the cause of road improvement. Manufacturers of Road Machinery will be present with their plants to crush rock and lay down roads, materials for which will be furnished by the municipality.

"We trust your Bureau of Agriculture and your State will be represented.

"The National Editorial Convention meets here July 2 to 6, and delegates to the Road Conference; or those wishing to attend it, can arrange to represent newspapers, and thus get reduced railroad fare.

"Hotel accommodations will also be furnished at greatly reduced rates."

The call was endorsed at once by the National League for Good Roads, the Maryland and New York State Leagues, and subsequently by many other bodies and officials. The Secretary of Agriculture, seeing an opportunity in such an occasion to prosecute with advantage the inquiry with which Congress has charged him regarding the whole subject of road improvement, has exerted himself to promote the progress of the affair, and in general all the varied interests concerned are working together for its success.

The practical advantages possible to be gained are shown by the fact that the recent visit of the New York Legislative and Supervisors' Committees to the State Aid Road Districts of New Jersey resulted in the immediate passage by the New York Assembly of a liberal State Aid bill by a vote of four to one, which bill only failed by accident to become a law.

When, instead of two States, twenty or thirty come together to recount their successes and failures and compare their respective methods, it is impossible to estimate the outcome in benefits.

The Chicago Convention in 1892 resulted in organizing the National League and many State and local Leagues which are now active forces in the work of road improvement; the Washington Convention in 1893, among other services, procured the Government Inquiry, which is already bearing valuable fruit. The seaside gathering in 1894 promises greatly to exceed the others in numbers and in the definite value of its work. Actual road improvement is now progressing in many States, and a selection of the fittest from among the many plans in use is a consummation devoutly to be wished. If it should be reached through this conference the occasion will be one to be remembered in the history of the country.

## THE GOOD ROADS CONVENTION.

TO BE HELD AT ASBURY PARK JULY 5TH AND 6TH.

THE United States Department of Agriculture has sent out 20,000 bulletins to road associations and editors throughout the country calling attention to the Good Roads convention at Asbury Park July 5 and 6. A portion of the bulletin is devoted to a letter signed by E. G. Harrison, Secretary of the New Jersey State Road Improvement Association, in which he asks all road associations to further the movement, which cannot fail to result in ultimate good. The replies received thus far indicate the general interest taken in the convention, and there is every reason for believing that the affair will be well attended. On Tuesday a communication was received from Kimball & Co., large carriage manufacturers of Chicago, in which they say that the Carriage Manufacturers' Association of America will be largely represented at the convention.

The League of American Wheelmen will also be well represented. The New Jersey Division of the Highway Improvement Association has sent out notices to all cycling papers asking them to publish all timely news pertaining to the convention. Sterling Elliott, Chairman of the National Improvement of Highways Association, has been invited to be here with the other members of the committee.

Gen. Roy Stone, head of the Road Inquiry Department at Washington, was in town last night conferring with Mr. E. G. Harrison and several members of the Citizens' Committee relative to the proposed July conference. Gen. Stone said that the scheme was growing in interest, and he predicted that the convention would be the largest and most instructive of the kind ever held. For the manufacturers of road machinery, the switch or spur that runs into Mr. Bradley's pipe yard, between Fourth and Fifth avenues, will be utilized as the place for unloading the cars. Here, also, stone crushers will be at work. The stone will then be hauled where needed, and sections of road built. A circular letter has been prepared by Mr. Harrison, and next week copies will be sent to leading editors, boards of trade, grange associations and kindred organizations throughout the country.—*From a large number of Exchanges.*

THE THOMPSONVILLE PRESS CLAIMS THAT THESE EPITAPHS ARE "CURIOUS," IN WHICH, NO DOUBT, THE READER WILL AGREE, BUT WE ARE NOT TOLD WHERE THEY ORIGINATED.

Regardless of cost and regardless of pains,  
This stone is erected to mark the remains  
Of wife No. 1 of T. Patrick Malone,  
And wife No. 2 helped to pay for the stone.

\* \* \* \*

It was a little burro that Peter used to drive ;  
There were six little children, but now there are five ;  
For Peter teased the burro while playing on a hummock,  
And the horrid critter kicked him in the pit of his stomach.

\* \* \* \*

There was a man called Elon Smith,  
Who once lived hereabouts.  
But he is dead and buried here—  
That fact nobody doubts.  
He lived a long and checkered life  
And left a short and freckled wife..

\* \* \* \*

This is the grave of Orsemus Tate,  
Who died on good terms with the church and the state.  
They attribute his death to something he ate,  
From which he demised at a subsequent date.  
Of his virtues his friends delighted to prate,  
But his vices his enemies chose to debate.  
When Orsemus arrives at the beautiful gate  
He will find his name, with the elect, on the slate.  
He died at the age of seventy-eight.

\* \* \* \*

Beneath this green grass  
Sleeps Annabel Gilder.  
She was a fair lass,  
But kerosene killed her.

He was a tailor by trade,  
And his habits were loose,  
And at forty-two summers  
He gave up the goose.

\* \* \* \*

The kindling she soaked  
And the oil she ignited.  
It was the last fire  
Annabel ever lighted.

Here lies Jacob Smuggins,  
Some thought him a knave ;  
He lied when alive,  
Now he lies in his grave.

## A NEW USE FOR RELIGION.

We have recently received a 9 x 12 circular printed in large type, which we reproduce below, thinking it might be of interest to the readers of GOOD ROADS.

Our artist who was ill last month (and that was the reason why the office boy was employed to make the June Calendar heading) is all right now and gives a picture of the minister as he appeared on that memorable Sunday to which the circular refers.

We omit the names, for even if it should become proper for a bicycle maker to use the "livery of heaven" to advertise his goods, it will not be the policy of GOOD ROADS to be "an accessory before the fact."

### WHEELMEN ATTENTION!

You are invited to a Special Service

NEXT SUNDAY, JUNE 10th.

At 11 o'clock, in — Church.

The Pastor, Rev. —, has prepared an appropriate discourse to Bicycle Riders.

THE — WHEEL COMPANY BAND

WILL BE IN ATTENDANCE.

A responsible party will take charge of the wheels as soon as they arrive at the church door.

(As representing the highest degree of excellence in the manufacture of bicycles, two — wheels will be used in the pulpit by the pastor to illustrate points in his sermon. One, our Ladies' Model No. 10, of which the largest dealer in New England says: "It is the handsomest wheel made;" and the other, our Gentlemen's Road Wheel, Model G—not only the strongest—bearing 210 pounds weight with ease and safety—but the lightest, easiest running, and fleetest, as the records of recent meets will show.

———— WHEEL COMPANY.

In view of the rivalry between bicycle makers and the keen search for advertising novelties, we are not surprised that even the sanctity of the pulpit was considered as a possible advertising medium. And we are not surprised that a progressive

preacher should utilize so popular and practical a subject as the bicycle to illustrate things spiritual. While his desire to attract and interest wheelmen was most commendable. In fact, if the present progress of the bicycle continues, the preacher of 1898 *must* interest wheelmen and wheelwomen or put up his shutters.

In view of the above things which *did not* surprise us, the reader must have inferred that something *did*, and it was this: that any minister would have lent himself, not to mention the dignity of his pulpit and position, to so unnecessary and uncalled for a proceeding as the advertising of any man's goods at and during divine service.

A continuation of this thing to its legitimate conclusion might lead to something like the following:

### SPECIAL ATTENTION!

#### GREAT ATTRACTION AT THE COLUMBIA CHURCH.

Wheelmen, don't miss this the opportunity of your lives.

The Rev. Elyptic Geer will preach a specially powerful sermon on the importance of higher speed. During the sermon he will explain how he won the hundred yard championship on Bradstreet's track, and while the organist is letting the air out of the bellows to the tune of "Nearer My God to Thee," Rev. Mr. Geer will ride around the pulpit on a Victor Light Roadster having G. & J. tires.

Services will be opened by the reading of a chapter from GOOD ROADS Magazine, entitled "What doth it profit a man to build a good road and then spoil it with narrow tires."

The hymn books used on this occasion are from the well-known publishing house of Sharper Brothers, and the preacher will wear throughout the service a pair of green silk suspenders furnished by the well-known outfitters whose card will be found in each pew. The ushers will wear knit sweaters made by Holmes and the ladies of the choir will appear for the first time in Bloomer costume. The effect will be striking especially when they sing that good old hymn beginning

"Just as I am without one plea,  
O Lord I give myself to Thee."



## CYCLING.

ROBERT BRUCEISMS.

Wheelmen going abroad for the summer should take with them their code of Puritan principles; and remember as they return that the *path of duty* lies through the Custom House.

\* \* \* \*

IN PHILADELPHIA.

"I see that they are coaching from New York to Philadelphia."

"Yes, but I don't see as Philadelphia needs any 'coaching' from New York or any other city."

\* \* \* \*

AN ADDRESS WANTED.

SCORCHER — "I dreamed the other night that a member of an Illinois Cycle Club challenged me to a ten-mile race."

MCSPEEDER — "Of course you will accept."

SCORCHER — "The only difficulty is that I didn't dream his name and address. How can I find out where to send my acceptance of this challenge?"

\* \* \* \*

A TRAGEDY.

There is a Methodist minister in one of the sparsely settled regions of the far West, who preaches on the Sabbath at two different towns several miles apart, and not many months ago he began to make the distance by wheel. On his third trip he was murdered. The case was investigated by the coroner, and an eye witness of the tragedy was called to testify.

"How did it happen?" enquired the official.

"Well, you see, he stopped Jim Smith, the cow-puncher of the Montezuma Ranch and asked him if he was prepared to die." The murderer was unanimously acquitted by a jury of his fellows.

\* \* \* \*

STOLE THE RIDE.

A young Chicago man was very weary after a long day's work and started home on foot because no street cars went his way. En route he saw a wheel leaning up against a telegraph pole. The weary walker mounted that wheel and rode home. Not many days afterwards the thief was discovered and arrested. When the case came up in court, the lawyer for the defence argued that his client had stolen the ride and not the wheel. The jury agreed and the culprit was acquitted. Here is a tip for others who are caught with borrowed bicycles in their possession.

## CHAS. DICKENS' DESCRIPTION OF A CERTAIN ITALIAN ROAD.

**O**N reading the following interesting pen picture of an actual road, written by so able an author, we naturally wished that we might have a picture of it. We have photographs of about as bad roads as could well be imagined, but are glad to say that no American road so far heard from is equal in point of roughness to the one described by Mr. Dickens. We present, however, a picture, which, in the absence of something worse, will do fairly well. It is a regularly traveled thoroughfare and is within a mile of a town of 1,000 inhabitants. It is not necessary to locate it nearer than to say that it is in the central part of the United States.



VIEW OF AN AMERICAN ROAD THAT ALMOST "BEATS THE DICKENS."

Of the Italian Road, Charles Dickens says:

"But the road, the road down which the marble comes, however immense the blocks, the genius of the country, and the spirit of its institutions; pave that road, repair it, watch it, keep it going! Conceive a channel of water running over a rocky bed, beset with great heaps of stone of all shapes and sizes, winding down the middle of this valley; and that being the road—because it was the road five hundred years ago! Imagine the clumsy carts of five hundred years ago being used to this hour, and drawn, as they used to be, five hundred years

ago, by oxen, whose ancestors were worn to death five hundred years ago, as their unhappy descendants are now, in twelve months, by the suffering and agony of this cruel work! Two pair, four pair, ten pair, twenty pair, to one block, according to its size; down it must come, this way. In their struggling from stone to stone, with their enormous loads behind them, they die frequently upon the spot; and not they alone; for their passionate drivers, sometimes tumbling down in their energy, are crushed to death beneath the wheels. But it was good five hundred years ago, and it must be good now; and a railroad down one of these steeps (the easiest thing in the world) would be flat blasphemy.

When we stood aside, to see one of these cars drawn by only a pair of oxen (for it had but one small block of marble on it), coming down, I hailed, in my heart, the man who sat upon the heavy yoke, to keep it on the neck of the poor beasts—who faced backward, not before him—as the very Devil of true despotism. He had a great rod in his hand, with an iron point; and when they could plough and force their way through the loose bed of the torrent no longer, and came to a stop, he poked it into their bodies, beat it on their heads, screwed it round and round in their nostrils, got them on a yard or two, in the madness of intense pain; repeated all these persuasions, with increased intensity of purpose, when they stopped again; got them on, once more; forced and goaded them to a more abrupt point of the descent; and when their writhing and smarting, and the weight behind them, bore them plunging down the precipice in a cloud of scattered water, whirled his rod above his head, and gave a great whoop and hallo, as if he had achieved something, and had no idea that they might shake him off, and blindly mash his brains upon the road in the noontide of his triumph.

Standing in one of the many studii of Carrara, that afternoon—for it is a great workshop, full of beautifully finished copies of marble, of almost every figure, group, and bust, we know—it seemed, at first, so strange to me that those exquisite shapes, replete with grace, and thought, and delicate repose, should grow out of all this toil, and sweat, and torture! But I soon found a parallel to it, and an explanation of it, in every virtue that springs up in miserable ground, and every good thing that has its birth in sorrow and distress. And, looking out of the sculptor's great window, upon the marble mountains, all red and glowing in the decline of day, but stern and solemn to the last, I thought, my God! how many quarries of human hearts and souls, capable of far more beautiful results, are left shut up and mouldering away; while pleasure-travellers through life, avert their faces as they pass, and shudder at the gloom and ruggedness that conceal them!"

A SIGN WHICH OUGHT TO BE DUPLICATED  
MANY TIMES.

ON one of the writer's excursions into the country, this sensible advice was noticed painted in large black letters on a white board, and posted at the four corners of a country road:



Sensible, wasn't it? If each succeeding driver followed the same path as the preceding, the road will be worn into ruts and rendered less desirable as a highway. The road in question didn't have any ruts, but was evenly worn. Isn't it the same with the individual? If he follow the old, beaten track, in a little while he will find himself narrowed down into a rut from which it is difficult, if not impossible, to escape. Don't get into a rut! Strike out on new lines! Try new methods of doing the same old jobs, as well as new lines of work! Be wide-awake, and the road will grow smoother and better as you advance in life, instead of being filled with ruts! — *Rural New Yorker*.

If pigs have to live on frozen  
dishwater they should have the  
privilege of squealing.

## AN ADVERTISEMENT.



THE Editor of GOOD ROADS is very benevolently inclined. He was appealed to some months ago to contribute of his apparel for the comfort of divers and sundry

“sufferers” by name unknown to the deponent.

A hasty search of his apartment disclosed a pair of shoes, not new by any means, but still it was thought they might do very nicely for some one who otherwise had none. (We might explain that they were summer shoes and not the kind which the artist has shown.) The shoes were forwarded and the giver “put in” a very contented winter in the proud consciousness that some unknown “sufferer” was enabled, through his generosity, to indulge in the luxury of footwear.

At the time of the above donation, the Editor of GOOD ROADS (\$1.00 per year) had also a pair of *new* summer shoes which, (owing to his wearing rubber boots in the winter) were not wanted until this spring, and on the first hot day they *were* wanted. It took but a moment to discover the horrible fact that one of the new shoes had been sent to the “sufferer,” and that he had received but half of the pair which was intended for him.

Now the return of the well shoe is not asked, but if the present possessor of the other poorly matched pair will call at the GOOD ROADS office (No. 12 Pearl street, Boston), he will hear something to his advantage. He may have the good ones on the sole condition that he return the other old one, so that we may match up a pair to last us this summer. Please act promptly in the matter as we want to go to the Editorial and Good Roads Convention at Asbury Park, July 2 and 6 inclusive.

The charities that soothe and  
heal and bless are scattered at  
the feet of man.—*Wordsworth.*

## STUDIO NOTES.

A VETERAN TOURIST ON ENGLAND'S MACADAM.

*By Stanson.*

**I**T was my habit while on a cycling tour in England, one summer, to start and stop when it best suited me, and as I preferred to ride in the cool and best part of the day, generally started out about six A. M. ; that was two hours or more before you could get breakfast at any hotel, and I would ride delightfully till about eight, passing through several towns or villages, before caring for the morning meal. Often you could find coffee houses open soon after six, when in factory towns, to afford early breakfasts for the workingmen, so the cycling tourist need not fear he will go hungry, for there is no need to.

One morning the wheel carried me into Stains, one of those quiet old towns, so silent at eight that one would think it either Sunday, or that the place was deserted. Seeing a sign inviting cycling patronage, I entered, after putting the wheel where I could see it from the dining room, and be sure no boy would experiment with it at my cost. Even as late as it was, no breakfast was ready, and I asked for any cold meats handy. The landlady very soon brought on a bit of cold roast duck, with bread, butter, jam and tea, having been as she said "eaten out" the night before.

The cold lunch cost me 2s. 6d., about twice as much as it would at a coffee house, and it gave me to understand that where one wants to study economy on a tour, it does not pay to stop at high-toned places advertising for the shillings of wheelmen.

The high tariff and style vs. something to show for your money, was evidently played upon some cyclers I met one day just out of Buxton, who were so angry at their treatment that they felt it their duty to warn me to keep away from the hotel they had just left where they were charged 3s. 6d. each for lodging, all in one big room up next the roof. This was another house that advertised for the patronage of cyclists, as I had seen by its posters on rocks and trees. Thanking the men for their disinterested kindness, I looked at that house as I passed, and fancied I saw the sky bed room they had just paid so well for.

One can ride comfortably over there at a cost close to one dollar a day for meals and lodging, if he is not in the four-dollar-a-day set, and manages right.

And as for roads, they were so much superior to those of New England in general, that when I heard complaints, and any one grumbling at their muddiness or dust, it wearied me

more than did leagues of riding on them. English macadam roads are not only made properly, but kept up in good condition. I frequently saw and tried to talk with the solitary man by the roadside who was breaking stone, or repairing the fine road surface wherever it showed the least need of it. I said "tried to talk with them," but that was about as far as it went, for they were generally so dumb as to scarcely understand anything at all.

At one place in North Wales I found some so-called repairs where the coarse broken stone was merely "fired" upon the road, and left in a criminally careless way for Providence and the traffic to wear down, which it probably has never done.

That was much like too much of our own home ways of doing things that I felt quite at home, and in another place I fell, quite home-like, over some boulders on a descending bit of Welsh land. It takes an American to appreciate England's good roads, for at home he is so used to bad ones that his joy is unending over there.



"THINGS are seldom what they seem ;"  
 May have done in olden times,  
 For a poet who was green.  
 And rather pushed for truthful rhymes.

But now the world is wiser grown.  
 We look for facts, not idly dream.  
 Behold the pair as herewith shown :  
 These things are *always* what they seem.

## FOR LEAGUE MEMBERS ONLY.

The following explains itself, (or at least comes so near it that we think it safe to let it go as it is.)

### TO WHOM IT MAY CONCERN.

Be it known: that in order to hasten the joyful day when the

#### GOOD ROADS MAGAZINE

Should earn the money to pay its own bills, it was thought best, as a means to that end to ask those who were to receive the publication regularly, to pay for it.

The teeming brain of its editor conceived the happy idea that those most prominent in the organization to which GOOD ROADS belongs, were the ones who should be first called upon to subscribe. He accordingly wrote to those high in League authority, and asked them to "ante." With a single exception they did so. That notable exception was the treasurer, *W. M. Brewster*, familiarly known among the boys as "Pop."

Well knowing Mr. B's promptness and usual interest in League matters, we cannot believe that he would have failed to subscribe for GOOD ROADS except on account of lack of funds. This conclusion has touched "our" heart, and we accordingly start this subscription paper for the purpose of furnishing Mr. Brewster with GOOD ROADS for one year. In order to do this, it will be necessary to find ten men who will subscribe five cents each. Will you kindly put your stamps in enclosed envelope and forward to some "friend of the cause" who will in turn do the same.

And we would ask that the tenth man return the paper and stamps, together with any comments, to GOOD ROADS Office, 12 Pearl Street, Boston. The greatest promptness is desirable, as Mr. Brewster cannot hope to enjoy the *exquisite pleasure* of receiving GOOD ROADS until the amount of fifty cents is raised.

Brethren, who is there among you who would refuse to assist a man so deserving?

NAME.		REMARKS.
STERLING ELLIOTT,	5 Cents.	"Blessed are they that mourn for they shall be comforted."
ABBOT BASSETT,	5 Cents.	"Blessed are they who freeze for they shall be blanketed."
D. J. POST,	5 Cents.	"Blessed are they who give freely for the League is in need."
LOUIS A. TRACY,	5 Cents.	"Blessed are they who put their trust in the League for its 'trust or bust.'"
GEO. COLLISTER,	5 Cents.	"Cast thy bread upon the waters, &c., &c.,"
WILL. F. SAYLE,	5 Cents.	"Blessed are they who cough up, for 'Pop' is in need."
C. R. OVERMAN,	5 Cents.	"A fool and his money are soon parted."
BILLY HERRICK,	5 Cents.	"Do unto others as you would be willing to ask them to do unto you."
D. J. CANARY,	5 Cents.	"To my old friend 'Pop.' I willingly and cheerfully part with my little five-spot."
W. C. MARION, JR.,	5 Cents.	"I jes simply put in me nickel and say nothen, See!"

On being shown this "touching" evidence of the esteem in which he is held by his fellows, Mr. Brewster was deeply moved. In fact he was moved from Quincy to St. Joseph, and yet he gives evidence of being in his right mind for he seems to realize that sooner or later he will meet the "contributors" who have so kindly lent their generous aid, and while each of them has



“put up” but five cents, he can hardly hope to “stand them off” with anything so inexpensive as beer.

Our intentions were good, but we can see now that although we succeeded in gathering 50 cents from others to pay Mr. B's subscription, it might have been the height of economy for him to pay it himself. But he didn't know about this thing in time to stop it.

The following letter looks like an honest effort to *show* gratitude without the advantage of being able to feel it.

DEAR ELLIOTT:—

ST. JOSEPH, Mo., June 5th, 1894.

No man is poor who has friends such as these; I ought to, and I think I do, appreciate them; but, just the same I have a well defined impression in my mind, which grows stronger, — (the impression, not the mind) — with each recurring moment—that these contributions, given so willingly, not to say cheerfully, will sooner or later be heard from again.

Indeed, one of the contributors with more candor than tact perhaps, boldly announces that in his case at least, it is “casting bread upon the waters” and he is not a person that ordinarily has any use for waters either.

Of course, I shall always enjoy reading the Magazine, because I can never do so without thinking of those noble hearts to whose generosity I am indebted for it, and when I think of the good fellows who came to my rescue, in my hour of need, I shall not overlook the Abou Ben Adhem of the lot.

Gratefully yours,

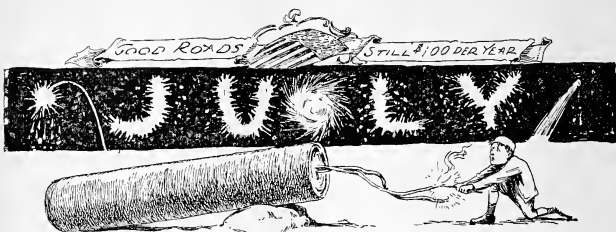
W. M. BREWSTER.

### CAN HE READ ENGLISH? AND DOES HE READ GOOD ROADS?

Two years ago a city in Iowa elected to the office of city engineer a man who had, for six years, worked in the sash factory at \$1.25 per day. This year they elected a tailor, who is said to be little better, except that he can speak English.—*Municipal Engineering*.

The Atchison Globe says there are lots of wives in the world who never know that their husbands are “jovial and whole-souled” except when they see it in the papers. It may further be remarked that there is often a great difference in the personal appearance of the “best girl” after she becomes a wife.

AND that brings to mind a very pertinent remark made by Carlyle “There is more religion in not contending, than there is in those things we contend about.”



Day of Year.	Day of Month.	Day of Week.	Length of Day.		SEVENTH ▲ July, 1894 ▲ MONTH
			H.	M.	
182	1	S.	15	14	As you sow, so shall you reap.
183	2	M.	15	13	Borrowed garments never fit well. [it.
184	3	Tu.	15	12	Confession of a fault makes half amends for.
185	4	W.	15	11	Deliberate slowly, execute promptly.
186	5	Th.	15	10	Experience is the mother of science.
187	6	Fr.	15	09	First deserve, then desire.
188	7	Sa.	15	08	GOOD ROADS make quick markets.
189	8	S.	15	07	He doubles his gift who gives in time.
190	9	M.	15	06	It is a long road that has no turning.
191	10	Tu.	15	05	Judge not of men or things at first sight.
192	11	W.	15	04	Kindness is lost upon an ungrateful man.
193	12	Th.	15	03	Let the cobbler stick to his last.
194	13	Fr.	15	01	Many words will not fill the bushel.
195	14	Sa.	15	00	Nothing is impossible to a willing mind.
196	15	S.	14	58	Open rebuke is better than secret hatred.
197	16	M.	14	57	Procrastination makes bad roads.
198	17	Tu.	14	56	Quit not certainty for hope.
199	18	W.	14	54	Ratify promises by performances.
200	19	Th.	14	52	Silence does seldom any harm.
201	20	Fr.	14	50	Talking alone will not build roads. [effort.
202	21	Sa.	14	49	Universal prosperity comes from universal
203	22	S.	14	47	Valor is worth little without discretion.
204	23	M.	14	45	Where the king sits is the head of the table.
205	24	Tu.	14	43	Xport mud, import gravel.
206	25	W.	14	41	You should subscribe for GOOD ROADS.
207	26	Th.	14	39	Zealously work for improvement
208	27	Fr.	14	37	& don't forget it.
209	28	Sa.	14	35	Now sow turnip seed.
210	29	S.	14	33	You can't "sow turnips" as
211	30	M.	14	31	You are advised by other almanacs.
212	31	Tu.	14	29	GOOD ROADS for August mailed to-morrow.

# LEAGUE OF AMERICAN WHEELMEN.

..... Organized 1880. ....

A voluntary organization having for its object the systematic improvement of the public roads, and the protection of wheelmen against unjust legislation. The present officers of the League are as follows :

*President.*—CHAS. H. LUSCOMB, 280 Broadway, New York.

*First Vice-President.*—A. C. WILLISON, 47 Baltimore Street, Cumberland, Md.

*Second Vice-President.*—GEO. A. PERKINS, 15 Court Square, Boston, Mass.

*Secretary.*—ABBOT BASSETT, 12 Pearl Street, Boston, Mass.

*Treasurer.*—W. M. BREWSTER, 411 Francis Street, St. Joseph, Mo.



## GOOD ROADS MAGAZINE.

Published on the first of every month by the League of American Wheelmen.

**Devoted to Highway Improvement.**

STERLING ELLIOTT, *Managing Editor.*

Publication Office, 12 PEARL STREET, - - - - BOSTON, MASS.

Correspondence relating to advertising only  
should be addressed to 167 Oliver Street.

Entered at Boston Post Office as second-class matter.



Please send Good Roads for \_\_\_\_\_ year \_\_\_\_\_

To \_\_\_\_\_

Street \_\_\_\_\_

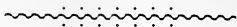
Town \_\_\_\_\_

Amt. enclosed \_\_\_\_\_ County \_\_\_\_\_

Beginning with \_\_\_\_\_ State \_\_\_\_\_

Single Copies, 10 cents.  
League Members, 50 cents.  
\$1.00 per year.

# Opening of a Chestnut Burr.



## A NEW PARLIAMENTARY RULE

"And now," said the new secretary, "yez may all rize, an' whin I call the roll ivry wan who is prisint may sit down; all the rist remain sthandin'."

—*Elmira Gazette.*

## CONCERNING WHISKEY.

Where will the increased whiskey tax come from? We can tell you where some of it will come from. Go down to that drunkard's house, where a thin wife is starving to death and where little children are shivering before a chill grate, and that's where part of it will come from.

—*Business Education.*

THE above sounds very touching, and as far as it goes, is true. But *is* an increased tax on whiskey such a bad thing for the drunkard?

We assume that in the case referred to, the man spends all his wages for liquor. Drinking interferes with his earning capacity, at least down to the point where he has no earning capacity, and as it is the *quantity* of whiskey that kills him, the less he can buy for his money the better off he is.

The poor man doesn't buy much champagne and who shall say that it is because he doesn't like it? If the price of whiskey was placed high enough there wouldn't be so many "thin starving wives," because those husbands being forced to drink water might in time get used to it and like it.

## BROAD TIRES

On heavily laden vehicles are both essential and beneficial, but the right of the State to prescribe the size of tires is certainly questionable.—*Exchange.*

IF THAT SORT OF REASONING  
WAS CORRECT HOW WOULD  
THIS DO?

MUDDY boots on rough boys are very damaging to a parlor carpet, but the right of the housewife to keep them off from it is certainly questionable.

## WHO SAID HE WAS?

A tea-kettle can only sing when it is filled with water. But man, proud man, is no tea-kettle.—*Exchange.*

FOR THE REASON OF THIS SEE  
"ROAD BUILDING AS A  
STUDY" IN JUNE NUMBER.

The difference between a babe in arms and a woman trying to do her own housework is that one cries and fusses while the other fries and cusses.

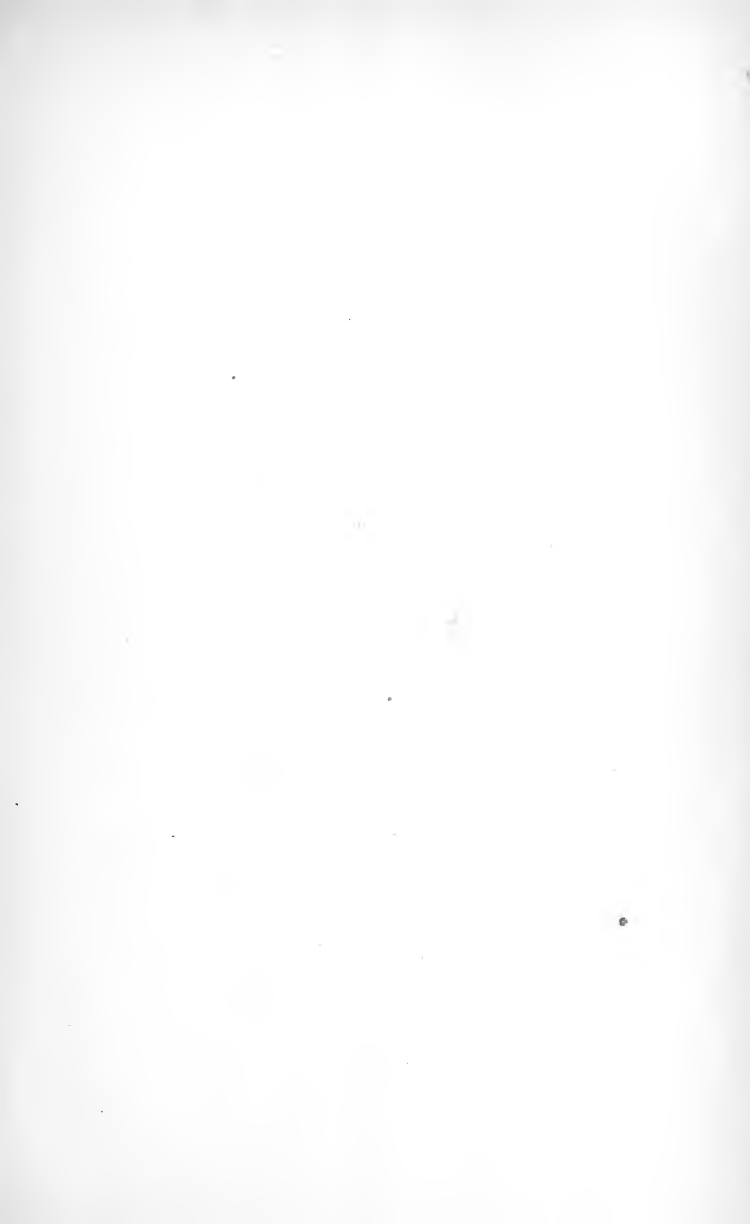
An Irishman on visiting a cemetery, noticed on a tombstone the following inscription: "Sacred to the memory of a lawyer and an honest man." "By the powers," said Mike, "that's a strange custom, to bury two men in one grave?"

THE above reminds us of an Irishman (all the witty things are said by that nationality,) who saw the old inscription, "Not dead but sleeping." "By heavens," said he, "If I was dead I wouldn't be ashamed to own it."



IF the style of advertising referred to on page 43 should become popular, GOOD ROADS submits the above as being still more permanent and impressive. We sincerely hope that neither the pulpit nor the tomb will be prostituted to the base uses of "trade" as a regular thing, but should the tendency be in that direction, GOOD ROADS (\$1.00 per year) claims priority for above suggestion.







COL. ALBERT A. POPE.



# GOOD ROADS.

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Vol. 6.

August, 1894.

No. 2.

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## SOME ROAD PROBLEMS.

IT is comparatively an easy matter for a community having plenty of money, and plenty of good rock, and situated on high gravelly soil, to enjoy all the blessings arising from good roads, for it is but a question of the taking hold of a work, the importance of which is now so well understood. To such communities, GOOD ROADS (\$1.00 per year) would say: "Go ahead and you will be all right, for it goes without saying that people having money and a high gravelly soil, must have also intelligence enough to employ such means as will insure the careful and judicious spending of their appropriations to the end that their improvements will actually improve.

The first requisite in the building of a road would seem, to the superficial observer, to be money.

Surprising as it might appear, it does not cost anything to build and maintain good roads, indeed there is in many cases, an actual profit in doing it. To be sure all the work done must be paid for, but taking a long range view of it, there is no expense attending the maintenance of a good road. This applies more forcibly, however, to such localities as are fairly well populated and have within reach, suitable road material.

Speakers and writers on road reform are apt to refer to the "old system under which the farmer 'worked out' his road tax." Would that we could truly call that the "old" system in the sense that it is no more. But unfortunately it is the *present* mode of doing things in many parts of this otherwise progressive country.

Assuming that the farmer's time is worth something as is also the time of his ox; and assuming as we may safely, that if he wasn't working on the road he would be doing some useful thing which he better understands, it follows that the road tax can be paid in cash as well as to have it "worked out" and with no hardship to the farmer.

Then have the road built properly, under competent superintendence and with money borrowed at a low rate of interest, as it always could be by the State. Take the tax money and use it to pay interest on the bonds and you will have enough left to provide a sinking fund which at the end of say twenty years will wipe out the debt. Meanwhile you have had good roads to use.

This is a good time to say that in the spring while the roads are bottomless the farmer can't do much on the farm, while with good hard stone roads he could haul his stuff to market at a time when the prices are high and thus be a gainer in two ways at a season of the year when at present he can do little else than play checkers.

In those parts of the country where stone do not abound and the most available road material is prairie mud, the first, best and cheapest relief is to use wide tires. Next, put in under-drains and keep the road well shaped up. Such a road properly looked after comes very near being right for sparsely settled prairie country, and during a large part of the year is good enough for anybody, but it is absolutely necessary to use

#### WIDE TIRES

and what is more it is profitable to the user in that he can haul double the corn out of the field that he could have hauled with narrow tires and he can get to town with a very much larger load, even when he is the only user of wide tires over that road, and as soon as the flat footed wagons become general, it is not necessary to spend one-half the amount in keeping up even a common dirt road.

#### DRAINAGE.

With proper drainage and wide tires, a long step is taken in the direction of going to town in the spring and fall. Few localities are so low that drainage is not practical, and even in the lowest "bottoms" a road properly raised, with suitable side-ditches and cross tiles will be in good shape most of the time, but no such road can stand narrow tires.

Get proper highways as soon as possible, but get wide tires!

#### NOW.

The meanest road is made better,  
 A fair road is much improved,  
 A soft road is kept smooth,  
 A good road is left so,  
 A hard road is made harder,  
 A smooth road is made smoother,  
 A rough road is leveled,  
 And all roads last longer,  
 Larger loads can be hauled,  
 Larger bank accounts may be maintained,  
 Better profits for the farmer,  
 Better prices for the consumer,  
 Better nature will prevail, and  
 Better citizens are made  
 By the use of

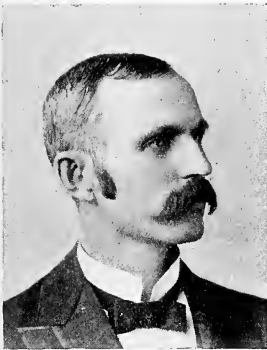
#### WIDE TIRES.

Therefore get wide tires first and good roads will be easier of attainment.

## THE HOME OF MINNEHAHA.

BY A. B. CHOATE.

*President Minnesota Road Improvement Association.*



A. B. CHOATE.

THAT which we call a rose, by any other name would not smell as sweet, and there are other names which have many things bound up in them quite as important as the odor of a rose, which would be lost by change of name. Such are many Minnesota names. It was only about thirty years after the Indians released the title of the land, that the West Hotel, one of the finest in the United States, was built in Minneapolis upon the land so recently occupied by the Indians, and there may be found to-day in Minnesota, every grade of civilization, from the

half savage Indians in the woods, to the refined and educated inhabitants of large cities, who compare favorably with those of any city or State in the Union.

A squaw, sitting in a primitively built wigwam, making herself a dress on a sewing machine, is a novel sight, which may be seen in Minnesota, and which illustrates the influence of civilization upon the Indians.

On the other hand, the influence of the Indians upon the development of the State is manifest by the Indian names which have been given to its cities, rivers and lakes.

The name Minnesota is made up of two Sioux words: Minne which means "water," and Sota meaning "cloudy."

There are 10,000 lakes in Minnesota, so clear and crystal-like that passing clouds casts their reflections upon the surface of their waters like pretty faces in a mirror; which it is said, gave rise to the name Minnesota or "cloudy water."

This is so pretty an explanation that it seems too bad to spoil it with the truth, but an explanation more in harmony with the un-poetic character of the Indians is, that the Minnesota River which runs through a rich, black soil, is cloudy and



TWO VIEWS OF LAKE MINNETONKA.

This beautiful lake is 200 miles in circumference, and is one of the most delightful summer resorts in the country.

Hotel Lafayette is shown here in the background, though it really occupies a place in the front rank of hotels.





"LAUGHING WATER"

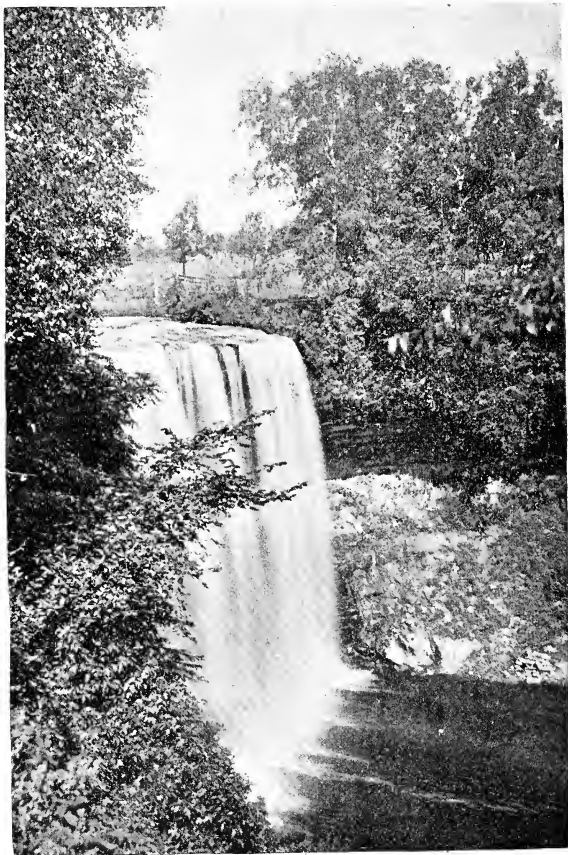
As seen from the lower level.

muddy, and the Indians called it Minnesota, and the name was borrowed by the white settlers for the name of the State.

There are no mountains in the State, but just enough ruggedness of surface to break the monotony and make some of the prettiest waterfalls in the world, among which is Minnehaha Falls, "laughing water," immortalized by Longfellow. Since Longfellow wrote of the fair Indian maiden, "Minnehaha," the city of Minneapolis has come into existence and included within its limits the renowned Falls of Minnehaha. A park has been laid out with the Falls for a sparkling center-piece. There is a deep, cool gorge leading from the Falls to the Mississippi River, where lovers walk and talk in unconscious commemoration of the wooing of Minnehaha by the young Hiawatha.

Lake Minnetonka (big water) looks, on the map, like an irregular ink blot. This lake with its 200 miles of tortuous shore line, wooded islands and clear water, full of fish, is the the most popular summer resort in the State. Situated 15 miles west of Minneapolis, it is connected with the city by four lines of railroad, and several fairly good wagon roads.

Large hotels supply all the wants of fashionable tourists, while the shores of the lakes are lined with pretty summer cottages of all colors, which peep out from among the trees at the pleasure parties which ride upon the lake in all manner of water-craft.



MINNEHAHA FROM ABOVE.

Any one who has seen this bit of nature, can readily understand how Longfellow was inspired to write the famous poem "Hiawatha."



A BIT OF MINNESOTA SCENERY WHICH LONGFELLOW PROBABLY DIDN'T SEE.

No prettier picture was ever painted, nor brighter colors ever used, than may be seen from a boat on Lake Minnetonka, in the fall of the year after Jack Frost has applied his brush to the abundant foliage about the lake. But Minnetonka is only one specimen of 10,000 lakes in Minnesota which together with the large forests, ocean-like prairies and balmy summer weather makes Minnesota one large, delightful summer resort.

One of the oldest cities in Minnesota is Winona, the Indian word for (eldest daughter.) Winona is a beautiful city situated among the highest bluffs in the State between lake Winona and the Mississippi River. From a cyclists standpoint, Winona is the gayest city in the State. She boasts the only cycle track in the State, sidewalk riding is there legalized by ordinance, cyclists hold office, and hold the fort generally, and those who do not like it, do well to practice economy, by holding the breath they would waste in complaining.

Shakopee and Chaska, the names of two neighboring villages, recall two well-known Indian chiefs, while a lake but a few miles distant, bears the Indian name of Minnewashta (good water,) and Kandiyohi lake, and county by same name, which is the Indian name for a kind of fish, indicate the abundance of the game of which the red men are so fond.

Enough has been said to show that in Minnesota, at least, there is something in names, but it must not be supposed that Minnesota is entirely given over to Indian romance and summer tourists.

"Care to our coffin adds a nail no doubt;  
And every grin so merry draws one out."

The lighter, sportive side of Minnesota serves to draw out the nails driven by the cares of business, for Minnesota is not lacking in business. Minnesota is one of the largest States in the Union; she has the largest flouring mills in the world; has the largest logging and lumbering companies in the world, and added to this, the State has recently found itself to be the owner in fee of rich mineral lands which rendered a direct income to the State treasury of \$184,528.95 in the year of 1892, which from present indications is but a faint foreshadowing of the wealth to be realized from this source in the future.

"By wisdom wealth is won,  
But riches purchased wisdom, yet for none."

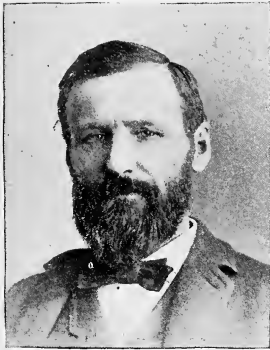
With all her natural wealth and beauty, Minnesota has not shown great wisdom on the subject of road improvement. The leading business men of the State, including the best farmers, are ready for an advanced step in the road reform movement, but the average farmer is inclined to be suspicious of everything indorsed by the city men and the daily papers, so that in this State it is simply a question of how long it will take to remove prejudice, and educate the obstructionists to the wisdom and importance of the reform, now heartily indorsed by our leading men. This educational work is being done as rapidly as circumstances will permit.



## COLORADO ROADS AND SCENERY.

BY EDWARD B. LIGHT.

*Secretary Denver Chamber of Commerce.*



EDWARD B. LIGHT.

**I**N the April Number of GOOD ROADS I had the pleasure of accompanying your readers from their New England homes westward 2,000 miles to Denver.

After sight-seeing for a few days in that city, we took a hurried trip through the State, at which time I promised to review in another article the country we passed through.

Anxious to learn more of Colorado, soon after the League Meeting has adjourned, we mount our wheels for a ride through the country. Turning our faces northward, we follow the right

bank of the South Platte river, 19 miles, over smooth roads to Brighton, where our friend Houghton insists that we dismount at his creamery and refresh ourselves with a glass of buttermilk from sweet cream, milked at the ranches since 4 a. m.

We hurriedly mount, as we are eager for the ride before us over as good a natural road as was ever ridden by wheelmen, and the one on which 25-mile annual road races are run. We fly past golden fields of wheat and green alfalfa, and witness the second cutting of this crop now in process. We pass historic Fort Lupton too rapidly to recall the scenes of early settlers as they greeted the Flag in 1859 and 1860, after weeks of anxious travel across the plains on foot, and by teams, in constant fear of an attack by Indians. But to-day we are as children, quickly forgetting the past, hopefully anticipating the future. Just ahead is

### PLATTEVILLE,

a small village surrounded with an ideal farming community, happy and prosperous, and in possession of what many people of the arid regions are praying for — abundance of water.



BLACK HAWK, THE PLACE WHERE GOLD WAS FIRST DISCOVERED IN COLORADO.

On we spin and soon cross the Platte river and pass Evans, a pretty town on our right, named for Hon. John Evans, who was appointed Governor of Colorado by President Lincoln in an early day, and whose energy and keen sagacity secured to Denver her first railroad, the Denver Pacific, in sight of which we have ridden all the morning. As we pass the limits of the town and raise the gentle hill, we sight

GREELEY, TWO MILES DISTANT.

Those born prior to the forties will remember Horace Greeley's trip and letters when he crossed the American desert, en route with others for "Pikes Peak or Bust." The reported gold mines of Colorado were then a question of National importance, and Greeley determined in the interests of the readers of the "Tribune" to investigate their richness. Over land he went, travelling day and night, writing letters and making speeches by the way, and finally bought a salted Gilpin County gold mine which some wags sold him for the fun of the thing. Colorado owes Horace Greeley an unpaid debt for his constant friendship and those valuable letters, which interested thousands, and turned back the tide of those who were homeward bound because of false rumors.

Upon Greeley's return to New York, "Father Meeker," as familiarly known in Colorado, decided to organize a colony and locate at the foot hills on the great American desert. When he advertised for colonists, Greeley sent for him to come to his office, where they met for the first time, and Meeker unfolded his plans for the Greeley Colony. After they had been fully explained, Greeley said: "Meeker; I will endorse your scheme and back it with the Tribune if you will go in for



MANITOU DEPOT, PIKES PEAK RAILROAD.

## NO RUM, AND NO FENCES.

Adopting these principles, Greeley, the most successful colony in Colorado, was founded, and is probably the most prosperous town of 5,000 inhabitants in the United States to-day. The original fence surrounding the colony was 80 miles long, inside of which no fence was built. As the colony grew, the ranches extended beyond this fence. Then a county Herd Law was enacted. That wise provision saved the citizens a great and useless expense.

The hospitable Greeleyites will insist that after our 52 miles ride, we shall spend the night with them, and enjoy the undefiled air of a strictly temperance rural town. As we wander about the well shaded streets, on each side of which runs a small irrigating ditch, our attention is attracted by the stone jail with its door ajar and one hinge broken, suggestive of the difference between "No rum, no jails," and "Free rum, full jails."

In addition to their numerous grammar and high schools, here is located the State Normal School, a very substantial building, well adapted for its uses and well patronized. Greeley is situated in Cash'La Poudre Valley, near the junction of the Platte river. It is the centre of a magnificent farming area. Ten miles to the north is the progressive agricultural town of Eaton, named for the Ex-Governor, the great ditch builder and farmer of Colorado.

Governor Eaton is one of our pioneers who can show a good record since the time when he freighted his young wife across



HIGH BRIDGE. THE RAILROAD WHICH CROSSES THIS BRIDGE IS THE SAME ONE WHICH PASSES UNDER IT AT THE LEFT.

the plains on a "prairie schooner," drawn by ox teams, in 1859. He has been good to himself and helped many a worthy man to his feet. If he is at home, we run the risk of a reception at his house and an invitation to ride over his broad acres.

Few have not heard of or eaten Greeley potatoes, the demand for which gradually increases, from Chicago, Cleveland, Buffalo, Boston, New York and Providence. Last year 4,000 car loads or 80,000,000 pounds were shipped to the Eastern States. Other crops grow equally as well, but the great demand for Greeley's superior potatoes, affords in the growth of the tuber, better returns than can be obtained from any other crop.

Early next morning we ride westward directly toward the mountains, passing up the broad, fertile valley of Cash La Poudre, which I have often thought had not its equal in the Union for attractiveness and agricultural resources. More productive farms the sun does not shine upon than we shall pass on our way to

#### FORT COLLINS.

What has been said of Greeley applies with equal force to this enterprising town, but as it lies 26 miles nearer the mountains, it has the commercial advantage of a larger mountain trade and the quarries in the foothills, from which hundreds of car-loads of building stone are annually sent to Denver, Omaha, Kansas City and elsewhere. Here we take dinner, after which we must ride out to the Agricultural College, and see the perfection of experimental crops growing in this latitude. We



LONGS PEAK, WHERE SNOW IN AUGUST IS A REGULAR THING.

must glance at the certificate of first prize for the best acre of wheat grown in the world, and which was captured by this College farm, and hangs upon its wall. The certificate was awarded by the *Rural New Yorker* about 1872, when it offered a premium of \$500 for the best acre of wheat the world could produce.

We now set our face toward Denver and soon reach

#### LOVELAND.

Riding over good roads parallel with the mountains, which are about twelve miles distant. This village of 1,000 inhabitants was located a few years since in the centre of farmer Barne's wheat field. Colorado's agricultural resources are not generally known, and I must give you here a few statistics, which will bear investigation and comparison with older States.

We now have cultivated lands (irrigated) 2,000,000 acres; cultivated lands (non irrigated) 1,000,000 acres; hay lands (non irrigated) 1,000,000 acres; her agricultural products, including her live stock, according to the latest revised and most conservative statistics for the year 1893, amounted to upwards of \$76,000,000. Strangers to Colorado suppose her chief resources are gold and silver, which amounts annually to only one-third of her agricultural products. Twenty years ago, Farmer Barne raised yearly more wheat than many counties in the great agricultural States of Wisconsin, Illinois, Michigan, Ohio and Indiana.

A part of our excursion will remain here over night; the remainder will distribute themselves between the towns of



ESTES PARK.

## BERTHOUD AND LONGMONT.

The latter is an enterprising village of 2,500 inhabitants, supported mainly by an agricultural community, and situated on the St. Vrain River. This town was settled by a colony from Chicago soon after the settlement of Greeley. Both of these towns were settled before Denver was known.

All lovers of mountain scenery, having a few days' time at their disposal must turn west from here, and make a flying trip to Estes Park, the most beautiful and inviting of all Colorado parks, but not the largest. It is only six miles wide by ten miles long, through which several streams, filled with "speckled beauties," so much sought for by skilled anglers. At the south end of the Park rises Longs Peak in all its majesty and grandeur, with a sentinel on either side nearly equal its height. The altitude of the Park is 7,500 feet.

We leave our wheels at the hotel and drive up to Lamb's Ranch, where we spend the night at an elevation of 10,000 feet.

At sun-rise the next morning, mounted on horseback, with an experienced guide in the lead, we ride up to timber line, where we picket our horses and commence the climb of the Boulder Fields, necessitating much courage and determination, as these boulders are angular rocks of solid granite, and run in size from a chicken coop to a modern dwelling. In the centre of this Boulder Field, we pass the slab recording the death of Carrie Welton of Connecticut, who a few years since unwisely insisted upon the guide accompanying her to the Peak too late in the season. When returning they were caught in a severe gale and blinding snow storm. After suffering, as only one can suffer, when surrounded by that intense loneliness, stung by



ON THE WAY UP.

the pangs of cold and cravings of hunger, her life was sacrificed. The trusty guide, for hours, made supernatural efforts to carry her over those almost impassable rocks, until at her request he left her, to bring a rescuing party from the ranch, which upon arrival, found life extinct.

Following the guide we pass through an opening called the "key hole," and emerge beside an unwelcome precipice. We carefully pick our way along the brink, which requires all our nerve and resolution, but yet is not as tiresome as the loose sand and broken rock, rising at an incline of 45 degrees, just beyond. By perseverance and an occasional rest, we are enabled to reach that ugly precipice on our right, and by using both hands and feet, we make the summit, where we stand speechless with wonder and admiration. Hard as it was, we would make the same heroic effort a hundred times were it necessary, to witness the grand scene before us.

Nearly 8,000 feet below is Estes Park, enshrined in all its beauty. To the northwest is North Park, the sportsman's Paradise; to the west is Middle Park, and Hot Sulphur Springs; to the south, South Park. Beyond these peaks we see the range for a distance of over 200 miles. With the aid of our glasses we discern Gray's Peak, Mount Lincoln, Mount Evans, Pikes Peak and Old Ouray in Marshall Pass, some of which are 200 miles distant. What a scene it is; what an ocean of mountain billows, in contrast to which we turn to the east and see an ocean of plains. The one as quiet as the peaceful sea in a calm. The other as tempestuous as the tossing billows.



GRAYS PEAK, SIXTY MILES FROM DENVER.

Never was time more valuable than now; so much to be seen. Such a picture to paint in our minds so that it may never fade. Think of making this impression indelibly upon one's mind, covering this panoramic view of 200 miles in either direction of plains, valleys, parks, and mountains, of growing fields of wheat, and far distant cities, of snow capped mountains, of magnificent forests and crystal streams.

Again and again we sweep the horizon and study a landscape, no painter can paint, no speech can express. Before



PIKES PEAK.





A CARLOAD OF WHEELMEN RELUCTANTLY RETURNING FROM PIKES PEAK.

returning we must look at the souvenir deposits of visitors. Here is a shingle by Major Powell, who with William N. Byers were the first to make the ascent in 1868. Here is Anna Dickinson's card, the first woman to ascend the peak, also of the party who climbed the Peak in 1878, to witness the total eclipse, together with thousands of visitors' cards.

The top of the Peak is level, covering a few acres, and we wonder that a house has not been built there for the accommodation of those who might wish to remain over night and see the sun rise. Before returning we must take one look over the crater wall, which has a perpendicular descent of 3,000 feet. How nervously we approach the edge, step by step, until our strength fails us and we can go no farther.

Trembling with fear, we return from this stupendous scene, bewildered with mixed feelings of pleasure and fear. Before making the descent, we take a final view, the like of which we shall never again see. We retrace our steps, and having passed the most dangerous places, courage is restored and we reach the Park after nightfall! so tired, and with such a longing for our couch, but with the feeling that we would sacrifice anything reasonable rather than deny ourselves to Longs Peak, but having once made it, nothing would tempt us to climb it again.

After a day or two's rest, sight-seeing and fishing in the Park, we return to Lyons, and follow the foot hills to Boulder, leaving Longmont to our left. This enterprising town is a mixture of agricultural, mining, manufacturing and intelligence. A few miles west are some of our richest gold mines. Boulder



SCENE ON A COLORADO "ELEVATED ROAD."

Valley is one of the oldest and richest farming communities. Across the Boulder River, which during the late freshet was a Niagara, but now a quiet and peaceful stream only a few yards wide, is situated the State University, so favorably known among the educational institutions of the great West. From Boulder we go to Lafayette and Louisville, where we are surprised as we ride across the level plains, to learn that from beneath us comes nearly all the coal mined in Northern Colorado, for the supply of Denver, Kansas and Nebraska. These barren plains, which appear to have no value, when irrigated and cultivated, produce bountifully on the surface, but from the veins of coal beneath are taken greater treasures, often yielding in royalty \$2,000 per acre for coal mined.

Instead of returning to Denver direct, we must go by the way of

#### GOLDEN

and see its smelters, its manufacturing plants and the State School of Mines. This little town of one thousand inhabitants was the capital of the State, when Denver was a straggling settlement. Here Horace Greeley saw the first attempt at agriculture in 1859, made by D. K. Wall, who came across the plains with his plow and seeds, and made more money from growing crops the first few years, than did the miners from their mines.

We have now a run of 15 miles over gently descending and inviting roads to Denver. In our run of a little over 200 miles,



MOTHER GRUNDY.

(So named because of the profile seen  
in the overhanging rock.)

try was settled; nor of that magnificent Valley of the Grand, thus named because grand in extent, grand in resources, grand in scenery and grand in climate.

Although I have not space to describe these very interesting, and in many respects, totally different communities, I must urge you if possible, to take time and see them all, as you can by leisurely travelling on the cars, for which round trip tickets will be sold to wheelmen during the meet, at special prices.

we have covered but a small portion of the State. I have not the space to tell you of Monument on the Divide and her annual potato bake, of Rocky Ford in the Arkansas Valley, surrounded by an immense tract of exceedingly fertile country, or of her "annual water melon day," at which time are contributed car loads of

#### WATER MELONS,

besides fruit and other eatables for the masses who gather from the surrounding cities and States to celebrate the day with her. Nor of the San Luis Valley, where at an elevation of 8,000 feet, luxuriantly grows every product of the farm, except corn, which is retarded by the cold nights; nor of Delta and Montrose counties, where the very perfection of fruit is annually grown, not a failure having been known in the harvesting of a crop since the coun-

## THE ADVANTAGES GAINED BY SPRINKLING COUNTRY ROADS.

READ BEFORE THE GOOD ROAD CONVENTION HELD IN SAN FRANCISCO, CAL., MAY, 1894, BY A. GREENINGER, MEMBER OF THE BOARD OF SUPERVISORS OF SANTA CLARA COUNTY.

*Mr. President and Gentlemen of the Convention :*

A FEW days ago I was notified that I was expected to say something to you on the subject of sprinkling public highways. The notice was too brief to enable me to prepare such a paper as should be presented on this important branch of the subject for the discussion of which we are here assembled. The impelling cause for assigning to me this topic is, probably, found in the fact that I have the honor of being a representative of the only county in the State and, perhaps, in the Union, that has, for any considerable length of time established and used a general system of watering country roads. It is now sixteen years since Santa Clara County made the first experiment in this direction; but the inauguration of the system dates back only about eight years. That it has been successful as regards comfort, convenience, and economy, is proved by the demands of the taxpayers for a still further extension of the system. The first impression produced by the suggestion of watering public highways is that of convenience and comfort. At the first blush it has the appearance of a luxury too expensive to be indulged in by communities of ordinary resources. Santa Clara County has demonstrated that it is scarcely less economical than comfortable. I do not expect to enlighten the convention as to theories of road sprinkling. You are familiar with them. I understand that it is information as to the practical application of those theories that is desired and, to accomplish that object I can do no better than to detail to you the experience of Santa Clara County in this direction.

Many years ago the road connecting the city of San Jose and town of Santa Clara, the historic "Alameda," was sprinkled; but the first real effort toward watering outside roads in that county was made on the public highway leading south from the city of San Jose and known as the Monterey road. Three miles distant from the city is located the principal cemetery of the county, and it was for the convenience of the people visiting that place that the road was sprinkled. It is the main traveled thoroughfare leading to the southern county limits. The three miles of sprinkled road to the cemetery gave the property owners, farther out, an opportunity to compare the sprinkled with the unsprinkled highway. The result was an

arrangement with the supervisors by which the system was extended two miles farther, the property owners making up a subscription to pay for the water plant and the county paying out of the Road Fund, the expense of applying the water. Soon afterwards another section was added, and then another, and then came applications from owners of property on other roads for like service, and the system has grown until now there are about 200 miles of the country road in Santa Clara County watered at the public expense, and the system is being extended as rapidly as water can be procured for the purpose.

The supervisors have ascertained that the only problem to be solved is that of obtaining water and, in the solution of this problem, they have been compelled to employ several methods. In some instances they have sunk wells at convenient intervals, raising the water directly into the wagons by means of a horse-power attachment driven by the teams employed to haul the vehicles. In other cases they have purchased water from the company whose mains extend from the southwestern foot-hills to San Jose. The mains are tapped and stand pipes erected from which the wagons are filled. The price paid to the company for water is 12 1-2 cents per 1000 gallons. In other instances the water is raised from wells by pumps operated by engines, into a large tank at a central station and thence distributed by pipes to smaller tanks at convenient intervals, and from which the wagons are filled.

In still other instances creeks on the high grounds are tapped, the water conveyed by pipes to supply tanks along the road at lower levels. In some cases water is taken from artesian wells, either directly into the wagons or raised by hydraulic rams into tanks. Hydraulic rams are also employed to lift the water from creeks where opportunity affords.

As to the cost under the several methods, I present the actual figures as they appear on the records. In other counties the expense might be less or greater according to the natural facilities presented :

## FIRST.

As to a watering station where the water is lifted by horse-power directly into the wagon :

Sinking 10-inch well 60 feet at \$1.75 per foot.....	\$105 00
Horse-power.....	175 00
Centrifugal pump.....	75 00
Setting up pump, etc.....	50 00
Total. ....	\$405 00

The wagons used hold 800 gallons and deliver the water over a surface 20 feet wide, or they can be regulated to any less width. The wagons cost \$250 each and are furnished by the

county. The county also pays a driver, who furnishes his own team, \$70 per month. One wagon and team will go over five miles of road, practically twice a day. The stations under this method are one mile apart. The team that hauls the wagon is also used to operate the horse-power. It requires about ten minutes to fill the wagon, and fifteen minutes to distribute the load and return to the station.

## SECOND.

Where the water is raised into a central tank and thence led by pipes into smaller distributing tanks. In this case the pump is operated by gasoline engines of from 4 to 8 horse-power, according to the distance through which the water is to be lifted.

Sinking twin 11-inch wells and pit for pump.....	\$ 250 00
Centrifugal pump.....	75 00
Setting up pump.....	50 00
Engine complete, about.....	700 00
20,000 gallon tank and frame.....	383 00
	<hr/>
Total .....	\$1458 00

A station of this capacity, properly located, will furnish water for ten miles of road, sprinkling the same practically twice per day. To accomplish this there should be fourteen distributing tanks of a capacity of 5,000 gallons each, with pipe and connections, the expense of which will be:

For pipe and laying same.....	\$6,000 00
Fourteen 5,000 gallon tanks at \$110.....	1,540 00

Making a total for the system of \$8,998, or about \$900 per mile. There must be added to this the cost of gasoline for the engine and \$2 per day for an engineer. Under this system the loading stations are closer together, the wagons can be loaded more rapidly than by horse-power and more water can be distributed on the roads per day. This must be set against the greater cost of the central system. The expense for wagon and driver is the same as by the other methods.

## THIRD.

Where the water can be taken from creeks or other sources of natural supply at a sufficient altitude to permit of its being carried by gravitation to tanks at proper intervals along the road to be sprinkled. Where this can be done the expense of the central station, including well, engine, central tank, etc., is avoided. The expense for distributing tanks, pipe and connections will be about the same. It will be seen that the principal cost of any system of watering roads is the expense of producing water. In Santa Clara county this expense has

amounted to about \$130,000; but, as it has been distributed through a period of about eight years, the tax has not been onerous. It is generally conceded that good roads are as profitable to the cities and towns in which they center and other portions of the county, as to the particular communities through which they pass. Recognizing this principal, the legislature of 1891, while reorganizing the general road law, placed therein a provision authorizing boards of supervisors to pay for water supply, machinery and plants for sprinkling roads, out of the general fund. This has enabled the county of Santa Clara to advance her system to its present state of efficiency, without any material increase in the rate of taxation for road purposes. It will enable most of the other counties to do as much.

The foregoing is a brief statement of the expense of sprinkling roads in the county which I have the honor to represent. It is proper that a statement of the benefits that accrue should also be represented. These benefits cannot always be estimated in dollars and cents; but they are of such a character as will be appreciated by every intelligent mind. Every person who has had experience in the country districts of California knows the horrors of traveling the ordinary country road during the long, dry summer season—the roadway, cut up into innumerable ruts and chuck-holes and covered to a depth of four to ten inches with dust ground into an impalpable powder, which rises in clouds at every motion of horse or vehicle, filling the mouth, nose, eyes and ears, and penetrating even to the lungs, covering the perspiring horses with a plaster of mud; obstructing the feet of animals and the wheels of vehicles; permeating and befouling the clothing and covering with nastiness everything not hermetically sealed. We all know the trouble and expense entailed by the efforts to protect our persons, our teams and our loads from this insufferable nuisance. A trip to town, even from a distance of only three or four miles, necessitates elaborate preparation for the encounter with the dust, and, even, with the greatest precautions, a general cleansing operation must be performed before we are presentable in public. With our public highways properly sprinkled, this nuisance is entirely abated and travel over our country roads becomes a pleasure. In Santa Clara county a journey to town demands no elaborate and troublesome preparation for an encounter with the dust. The horses travel without inconvenience, the clothing is not soiled, the lungs are not injured nor are the eyes and ears offended. The load in your wagon arrives at its destination as immaculate as when it commenced the journey and the feeling of cleanliness that pervades your person gives you a sense of comfort worth more than all the tax you pay to establish and maintain the road sprinkling system.

The flying dust is not the only nuisance abated by the effi-

cient sprinkling of the public highways. The ruts and chuck holes, so wearing on animals and vehicles, disappear and the smooth road bed that is substituted saves many a dollar to the taxpayer in the way of wagon repairs and horse flesh. The cost of transportation by wagons depends largely on the character and condition of the roads over which the hauling is done. This proposition is well illustrated in Santa Clara County. Before the roads were generally sprinkled it was estimated that an ordinary good team would haul a load of from one to two tons. Over the sprinkled roads the load is from two to four tons. Then the cost of hauling for, say, ten miles, was estimated at \$2 per ton and upward, according to circumstances. Now it is about \$1 per ton. The latter estimate is made from actual prices paid for hauling fruit; \$1 per ton being the amount allowed the seller for hauling when the point of delivery does not exceed ten miles in distance from the orchard. In this connection it is but fair to state that sprinkled roads are probably of more value to a fruit growing county than to a community devoted to other interests. Fruit demands careful and clean transportation. On roads not sprinkled, it requires vehicles with an elaborate system of springs and of costly construction to prevent bruising, while the most careful covering will scarcely exclude the dust. Nor can such large loads be hauled. On the sprinkled road there is almost no accumulation of dust, while a simple and inexpensive arrangement of springs, on an ordinary farm wagon, insures a delivery in good order. This means an absolute saving to the fruit grower of more money than he pays toward the expense of sprinkling the roads. Another benefit, and one that is by no means insignificant, comes to the property owner, the taxpayer and the community generally, from sprinkled roads. They attract settlers and capital, and increase the value of property along their routes. People are willing to pay a considerable higher price for land situated on a sprinkled road and, in many instances, intending purchasers make this a *sine qua non*. The convention will I hope, pardon me if I seem to intrude Santa Clara County too prominently into the discussion of a subject which is of interest to the whole State; but, as I understand, the convention wants facts and not theories. I am obliged to draw these facts from the only county that has a general system of road sprinkling in practical operation for any considerable length of time.

I do not wish to be understood that sprinkling will of itself make good roads. The road bed must first be made smooth and the ruts and chuck holes leveled up. Otherwise the water will stand in the depressions and greatly aggravate the evil. But when once the road bed is made level, and the water properly applied, the cost of maintaining it in that condition is but a trifle in comparison with that on unsprinkled roads. In addi-



tion to the fact that the water aids materially to prevent the roadway from breaking up under heavy and continuous use, it places it in such a condition that fractures can be mended as soon as they appear. This is not possible on unsprinkled roads. In the latter case attempts to fill depressions in the dry season are worse than useless. But, in a public highway that is packed and moist from a judicious application of water, a few shovelfuls of gravel or broken rock will prove to be the "stitch in time that saves nine."

As to the manner in which the water should be applied. On narrow roadways the 18-foot throw from the wagons will be of sufficient width for all purposes if deposited in the middle of the roadway. On wide roads the water should be first applied to one side and then the other, giving a lap in the centre. This gives a thorough and uniform wetting, the centre of the roadway, on which there is usually the most travel, getting the most water.

The statements of the facts on a subject of this importance must necessarily be incomplete in the limited time that can be afforded here. The proof of the pudding is said to be in the eating. Santa Clara county is but a short distance from where we now are and we cordially invite you to visit us, and by actual inspection, satisfy yourselves as to the great advantage of this method of maintaining and improving public roads. We invite you to make this visit now and, if your honorable body will also appoint San Jose as the place of holding the next annual meeting of the convention, we will esteem it a great honor.

#### A NOSE OUT OF JOINT.

We've got a baby at our house,  
 A perfect little fright;  
 I think that is the reason  
 It came so late at night.  
 His eyes keep shutting all the time,  
 His head is awful bare;  
 And he makes so many faces,  
 It gives me quite a scare.

Mamma says he is beautiful,  
 Her precious, darling boy.  
 Papa calls him his jewel bright,  
 His life, his light, his joy,  
 I used to have so many names,  
 I can't remember all,  
 But since that red-faced baby came,  
 I'm plain Samantha Hall.

— *New York Mercury.*

## RURAL FREE MAIL DELIVERY.

BY JOHN M. STAHL.

*Secretary of the Farmers' National Congress, and Editor of the Farmers' Call, Quincy, Ill.*



JOHN M. STAHL.

THE farmer is not near so unintelligent as is supposed by those people who get their ideas of him from *Puck's* caricatures.

My acquaintance among farmers is greater than among city people, yet I know of more city business men that have been swindled by means of "salted" mines or worthless stocks, than farmers that have been robbed by lightning rod men or pretended purchasers of farms.

There are some very ignorant and prejudiced farmers, as there are some very ignorant and prejudiced miners or moulders; and I have met

some lawyers, physicians and ministers that could only "talk shop," because they knew nothing else.

It is a gratifying evidence of the good sense and unusual penetration of the wheelmen that in general they have treated the farmer with all the respect that he has deserved. Though doubtless often provoked by his indifference or hostility to road improvement, they have neither sneered at nor patronized him.

There are some farmers who are satisfied with the roads that we have. This shows that some farmers stand in sore need of great enlightenment. There are very many more farmers who much desire good roads, but do not think that they can be made at bearable cost. This shows that very many farmers need enlightenment on road making.

In this the farmers are not alone. By far the greatest obstacle in the way of good roads is the general ignorance of how to make them, *in this country*. Roads can hardly be constructed at a cost of \$7,000 to \$10,000 per mile when the contiguous farm land sells for \$25 to \$75 per acre, with improvements. It is true that we must use more money on our highways; but much more than this must we stop *wasting*

money on our highways. There are roads that are a disgrace to civilization that would be tolerable if the money that has been expended on them during the past twenty years had been wisely employed. We must have more money for roads; but even more must we have better methods. And this, again, shows the need of enlightenment.

This is neither marvellous nor shameful. In general, it may be said that the greatest need always of a people ruling themselves is more and better knowledge. The schoolhouse is, as is often asserted, the bulwark of our liberties. The press is the force that serves the guns.

In no other way can intelligence in the rural districts be more effectually or economically increased than by extending into them free mail delivery. This would multiply the papers and letters received on the farms and in the villages. Especially would it greatly multiply the number of daily papers taken by the farmers. Not only the cause of road improvement, but all philanthropic movements and wide reforms, would be far advanced by the greater intelligence, the closer touch with the world, and the readier apprehension of rural people due to daily mail communication with the great centres of human activity, bringing into the rural home letters and periodicals, especially daily papers.

City people have in this an interest that should preclude their indifference. The general influence and the reflex action would be momentous; and as for direct result it may be said that merchants, manufacturers, produce commissionmen, publishers, lawyers, doctors and bankers are as much interested in getting their letters and papers promptly to their correspondents and subscribers as their correspondents and subscribers are in receiving letters and papers promptly.

Rural free mail delivery is but a matter of justice. Rural people pay their full share of taxes, and should not be grievously discriminated against in mail facilities.

It is not proposed to add much to the cost of the post-office department.\* The tests made by Mr. Wanamaker showed that rural free mail delivery would soon increase to such an extent the volume of rural mail that the rural free delivery would pay for itself. Analogous reasoning brings us inevitably to the same point. When Rowland Hill first advocated penny

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\* The resolutions adopted at the last meeting of the Farmers' National Congress read as follows;

RURAL FREE MAIL DELIVERY.

WHEREAS. It has been proved by actual test that free mail delivery can be extended to the villages and the more thickly settled farming communities with but little if any increase in the net expense of the post office department, therefore

*Resolved,* That we are heartily in favor of rural free mail delivery, and we hereby call upon the Congress of the United States and the post-office department to extend the

postage he was supposed to be crazy; but when cheap postage became a fact, it was soon found to be the more economical. In our own country, the reduction of letter postage to six, to four, and then to two cents an ounce, the several reductions in newspaper postage to publishers to a cent a pound, and the various reductions in the postage on other classes of mail matter, have been followed in every case by an increase in the volume of the mail that has soon compensated for the lessened postage rate. Probably for a time rural free mail delivery would increase the cost of the post-office department, but there are now many mail routes in the more sparsely settled regions that do not near pay the cost of transporting them, and no one questions the justice or expediency of maintaining them. In truth, the mail has become so essential in business and to decent living that every person living under our enlightened government should have good mail facilities, though the post-office department showed a considerable deficit. That department certainly benefits us as much as the Department of War or the Navy; and there is no better reason why it should be self-supporting than they.

Rural free mail delivery would be valuable as an object lesson, as a demonstration. To it there is only one objection urged—the cost. This is the one objection urged against road improvement. Twenty years ago, yes, only ten years ago, the papers in the bustling, enterprising cities of the second and third classes were filled with indignant letters and alarming editorials about street paving. It was vehemently declared, and frequently believed, that these cities could not endure the costs of paving their streets with granite, or brick, or cedar blocks; and to pave streets by the special assessment of abutting property was declared to be confiscation that would be fought in the courts to the bitter end. But the streets were paved; the cost was found to be bearable, and street paving was found to be a good and profitable investment. So, when rural free mail delivery is tried, it will be found, not only that the cost is bearable, but that it is a good investment, bearing a greater income than four or six per cent. per annum. And then one step more—the most expensive—but when we have a fair start in real road improvement it will be shown that the cost can be made bearable and that good roads are profitable.

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free delivery of mail into the country as fast as the same can be done without an onerous increase in the expense of the department.

*Resolved,* That there should not be any lowering of the present rate of letter postage until mail is delivered at least three times a week throughout all townships having a population of ten or more to the square mile.

The resolutions were introduced by Mr. Stahl, and were adopted by a unanimous vote. On motion of Mr. Savage, of Pennsylvania, seconded by Hon. Daniel Needham, of Massachusetts, Gen. Burkell, of Mississippi, and others. The vote was taken standing to make it all the more emphatic.

The routes of rural free mail delivery must be good roads, hence that delivery will bring the National Government into contact with road improvement.

### COLONEL POPE ON FREE MAIL DELIVERY FOR THE COUNTRY.

**T**HE great importance of improving the mail facilities of the country cannot be overestimated or exaggerated.

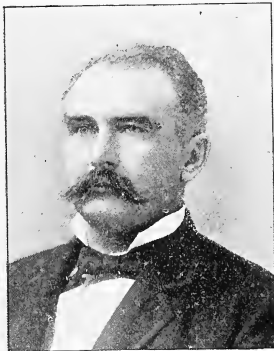
The Post Office Department has already made some experiments on this line, especially in the smaller towns and villages, and the general results have proven the practicability of greatly extending free delivery. It is, however, true that anything like universal free delivery will have to be postponed until there are better means of communication through the sparsely settled districts.

I believe that the department should follow up this matter and that proper mail delivery should keep pace with, if not a little in advance of, the improvements of highways.

Anything which will bring the country people in closer contact with the centres of civilization is worthy of consideration and will be of mutual advantage to all classes of our citizens. In improvements of this nature the strictly financial side of the question should be made of secondary consideration. In other words, the general benefits of free delivery should outweigh the actual money returns, as shown in the local post office accounts, and for this reason the Post Office Department should be managed with the view of securing the greatest benefits to the greatest number of people rather than with the idea of its paying expenses or making money.

## WHY PEOPLE SHOULD BUILD THEIR OWN ROADS.

BY GOV. CLAUDE MATTHEWS (*of Indiana.*)



GOV. CLAUDE MATTHEWS.

FULLY recognizing the necessity and importance of good roads, I have felt much interest in the movement to accomplish this purpose. The vast importance of this cannot be overestimated, affecting as it especially does the internal commerce of a Nation of seventy millions of people. It seems singular that to any person of ordinary intelligence there should be the necessity of argument to convince him of the utility and benefit. Your persistent efforts through, and the splendid articles in, the GOOD ROADS Magazine are fast doing this. I am not in favor

of a work of this kind being undertaken by the General Government — not by States — but rather by Counties and Townships. My chief objection to aid from the General Government, is owing to the paternal feature of such enterprises, and the injustice to an overwhelming majority of interests and the people, that could not share directly in the benefits accruing.

The building of good roads should be done by the people directly benefited by the improvements — and wholly interested in the cost and care. For several years we have been operating in this State under a law providing for the construction of free gravel and macadamized roads. Where the material for this is readily accessible, such roads have been rapidly built, until now in such sections of our State all the principal roads are graveled and the people are turning their attention to the by-roads or less important ones. I believe these roads will receive more care — a greater proprietary interest being felt, from the people who were taxed for their construction.

It is so easy to establish a dangerous and perplexing precedent from a seemingly innocent step — that it would be difficult to see where aid by the General Government in this direction might lead to.

## AN OPEN LETTER TO THE LEAGUE.

FROM STERLING ELLIOTT..

IT is not too early and never can be, to discuss things which might be of use to the League of American Wheelmen. There are two important things which I feel sure ought to be done at the next regular meeting of the National Assembly, and to that end I hereby give notice that I shall offer amendments to the constitution and by-laws which will enable the assembly to take such action as it desires to on each of these questions :

### BICYCLE RACING

is becoming a thing of such extensive and complicated proportions that it is not, in my opinion, proper that the League should continue to handle it on just the same basis as heretofore.

The labor performed by the Racing Board is getting to be something appalling. I believe that there are many mercantile and manufacturing establishments which do a hundred thousand dollars' worth of business in a year and which do not have nearly so extensive a correspondence as Mr. Raymond is now taking care of for no compensation. I congratulate the League on having found this man Raymond, but it is not likely that he will continue indefinitely, and the supply of such men is by no means large.

Although Mr. Raymond and the other members of his board work for nothing, it still costs the League about \$1,500 per annum to pay the expense of maintaining a racing board.

The advisability of taking care of racing interests I do not care to debate, but will assume for the purposes of this argument that it is as important as anything that the League of American Wheelmen has on hand.

A proper tribunal backed by the power and influence of the League can control racing, but there is *no reason why the League should pay the bills*. Racing men and race promoters should pay for the work which they, and they alone incur.

In view of the large number of sanctions and other favors which are granted by the Racing Board the fee for each one would be small. It would not be enough in any individual case to lessen the number of *necessary* requests and it would shut out a great many things which are asked for simply because they cost nothing and which are not really wanted.

If Mr. Raymond or some other man is willing to do his part of the work for nothing, it might be poor business policy for the League to pay anybody for doing it, but I predict that the time is not far away when it may be necessary to pay someone for

being chairman of the Racing Board, but in any event, the expense *whatever it is* should be borne by those who get the direct benefit.

“RENEWAL SEASON.”

The average man in his normal everyday condition does not always see the importance of joining the League of American Wheelmen any more than he sees the importance of subscribing for GOOD ROADS (\$1.00 per year) or of paying his pew rent. Now when through any influence whatever a man gets to the point of being willing to subscribe for GOOD ROADS, why we just take his money and let him in on the ground floor and he will get the full benefit of his subscription (12 numbers.) But many a man has got to the joining point when the League of American Wheelmen renewal season was over, and his friend, the missionary, could but admit the disadvantage of joining then. And by the time the renewal season comes again he may for some reason conclude not to join. In other words, the longer the time in which a man *may* join the more apt the League is to get him for a member.

Eight or nine months of the year the Secretary can get along with a comparatively small force, all that is done is done by people who are experienced; each in their particular line and things go smoothly and well, then comes that relic of an interesting past the “renewal season,” and things get into a feverish and abnormal state, new people must be hired, work, even though it be done with comparatively few errors cannot be done to advantage. The Secretary has to go into the nights of labor (how’s that) and I have even had him decline to go to church with me because he——was so tired from the work of Saturday night.

Let a member pay his or her annual fee and let that payment extend the membership for a year from that date whether it be June or January. It is not only as easy to do it that way but it is much easier and cheaper and as can be clearly shown, it would help to increase the membership and lessen both the cost of running the office and the chances of error. Why not do it? Those in favor will please go to the Assembly and vote for it.

Those opposed please write at once to GOOD ROADS Office, No. 12 Pearl Street, Boston, Mass.



## ROAD QUESTION IN RHODE ISLAND.

BY GOV. D. RUSSELL BROWN.



GOV. D. RUSSELL BROWN.

**I**N Rhode Island there is evidently a strongly increasing sentiment favorable to the construction and repair of our highways under the central authority of the State. We have no county government and the roads are now built and maintained by the cities and towns without concerted action. While a few towns during the past five years have made great advances in the direction of better roads, the general result of the present system is no more satisfactory here than it is in other States.

A commission has for two years been engaged in investigating the condition of our highways. It has authority to report a system of road improvement. Differences of opinion among the commissioners and the legislative complications of the past year have delayed the presentation of a report. I am, however, hopeful that the next General Assembly which has a republican majority in both branches, will consider the question and that the State will soon undertake the control of its main highways. I do not mean to intimate that the question is in any sense a political one with us, but rather to suggest that it is easier to obtain the necessary legislation when both branches of the General Assembly are controlled by the same party.

The most powerful obstacle which we, who are interested in the crusade for good roads, have to overcome, is the intense jealousy of the towns of any infringement of their rights, and the fear that they may be called upon to contribute toward improvements which may prove more largely beneficial to the cities.

I am confident, however, that within the next few years this subject will receive in Rhode Island the consideration it deserves. Good highways will add greatly to the natural attraction of the State's many summer resorts, and will bring the farmers in closer connection with their markets in the thickly settled manufacturing villages. My predecessors have kept the question before the people, and if no definite step should be taken during my term of office, those who come after will not permit the cause of good roads to suffer. It cannot be displaced from among the vital questions of State policy.

COL. ALBERT A. POPE.

(FRONTISPIECE.)

**I**N writing the story of famous men it is customary to mention the important, and we might say indispensable, fact of their having been born, supplemented by the date on which it occurred.

On account of his extreme youth (and probably on this account alone) Colonel Pope's birth was not attended with any unusual circumstances. Though from that time on, his similarity to the average boy and man became much less marked.

It is said, that poets are born and not made, and this is no less true in many other lines, beside the lines which are intended to rhyme with each other.

At the age when most boys are playing marbles the Colonel (which was to be) devoted himself to laying the foundations for his future success as a business man.

When he had reached the ninth year of his childhood, he accepted the responsible position of pilot on board of a horse which was employed to haul a corn cultivator in Brookline, Mass. The old gentleman who "held" the cultivator says: "that the horse's course under the guidance of the embryo bicycle magnate was straightforward and that he was *kept moving*."

The mercantile instinct which developed to such rare proportions later, was very much in evidence even at the tender age of twelve years, when he did quite a business in the buying and selling of garden produce and employed other children to help him. It is remembered that he never allowed any part of the stock to decay on his hands, and that he usually sold it for something more than it cost him.

Imagine a boy of nineteen years acting in the responsible capacity of second lieutenant of a military company in actual service at the front, and yet that was Albert A. Pope in 1862.

He took active part in many important battles including those of South Mountain, Antietam, Sulphur Springs, Fredericksburgh, Vicksburgh, Jackson, Miss., Knoxville, Petersburg, and Poplar Springs Church.

March 13th, 1865 (at the age of twenty-one years), he was brevetted Major "for gallant conduct at the battle of Fredericksburgh, Va.," and Lieutenant-Colonel "for gallant conduct at the battles of Knoxville, Poplar Springs Church and in front of Petersburg,"

"Peace hath her victories  
No less renowned than war."

and when the war had ceased Col. Pope returned to Boston,

where he soon started himself in the business of selling shoe manufacturers' supplies.

Shortly after the bicycle appeared in England, the far-seeing Colonel came to believe that "there was something in it" and with his usual promptness, took steps to introduce the new conveyance into this country.

After looking carefully into the subject, he imported a few machines in 1877, and in 1878 gave the first order for bicycles to be made in America. It was for fifty machines, and was given to the Weed Sewing Machine Company of Hartford, Connecticut. (That company's plant has since been purchased and greatly enlarged by the Pope Manufacturing Company.)

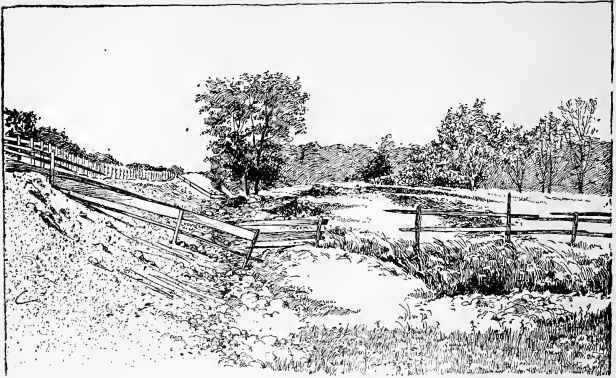
Col. Albert A. Pope occupies an important and decidedly unique position in the business world. He is not only president (in fact as well as in name) of what is without doubt the largest and most successful bicycle manufacturing concern in the world, but he is prominently connected with many other important enterprises.

Probably no one man now living, has done so much toward road improvement as has Col. Pope. He has spent his money freely and given a great deal of time and energy to the cause.

The League of American Wheelmen may attribute much of its success in that direction to the active and earnest co-operation of the great bicycle manufacturer. He gave at one time, \$6,000 to the Massachusetts Institute of Technology to be used in establishing a department of road engineering. The monster petition presented to Congress last December, asking that the Government establish a Road Department (which has since been done) was originated by, and circulated at the personal expense of Col. Pope. This petition was a most remarkable one, it was nearly four-fifths of a mile long and contained the signatures of one hundred and fifty thousand business men, including the governors of seventeen states.

Col. Pope combines in his make up many of the more desirable qualities of both the lion and the lamb, he is a fighter of the most persistent kind, and yet he has the heart of a woman. He is one of the great kings of commerce, though in his private life he exhibits traits of tenderness which are as commendable as they are rare.

He is a generous and philanthropic man and many thousands of dollars are given annually by him in charities of which the world knows nothing. He is loved by all who know him best, always looked up to and admired by his friends, and treated by his enemies with profound respect. He has been of much value to the world in many ways, but will, no doubt, be remembered longest for the great work he has done to stimulate and extend the cause of highway improvement.



### A REMARKABLE RISE IN REAL ESTATE.

**I**N extending the great boulevard system for which Boston is becoming famous, a very peculiar and interesting freak of the usually stable and quiet earth has been developed.

Just beyond Cottage Farm and near the Boston & Albany Railroad, it was necessary to fill with gravel a depression on the line of the Commonwealth Avenue extension.

Although this land was lower than that on either side, it was not a swamp, and was not, to look at it before the "eruption" a piece of real estate which would have been expected to behave in the unseemly and unusual manner shown above.

One night after the grade was completed and the contractor was dreaming what he would do with the money he was to get for it, the underlying soil, which, so far as the neighbors know, had not moved in ten thousand years, became uneasy and oppressed under the heavy load of gravel that had been placed upon it, and being mostly loam, and feeling, as loam usually does, that it should be on the top of the gravel and not under it, this, 17,000 cubic yards of "upper stratum," proceeded to crawl out from under the grading of "sub stratum" which man in his imperious style had placed over it.

In crawling it went out under a private estate shown at the right of the picture and caused about a quarter of an acre of good farming country to rear up into the air from four to nine feet, and now the owner of the farm wants "damages" (as though he hadn't enough already.) He didn't mind having the price of his land raised by the boulevard, but when it came to having the land itself raised he didn't like it.

It will be an interesting question for the court to decide and if it takes as long as some of the legal questions do, that land which slid out from under the boulevard, may conclude later not to stay under the farm. The Editor of GOOD ROADS (\$1.00 per year) is watching it daily to see what it will do next.

## THE NATIONAL GOOD ROADS CONFERENCE



ET at Asbury Park on July 5 at 9 o'clock A. M. in the Westminster Presbyterian church.

The ever popular Gov. Fuller of Vermont was chosen Chairman, and E. C. Harrison, Postmaster of Asbury Park, Secretary.

Some appropriate remarks by Chairman Fuller opened the meeting, which was mainly devoted to talks by representatives of various States and Territories. These various speeches told what had been done by the States represented, in the matter of road improvement, and all showed that the subject was a live one and that most of the States are taking some action looking in the right direction.

Vermont, said the governor, now has all road taxes paid in cash, and but one road commissioner for each town. State Board of Commissioners holds meetings each winter, and invites farmers to bring bags containing samples of the soil, gravel, etc., in different localities. Layers of these various forms of earth are placed together in proper proportions and used as object lessons to illustrate the lectures.

Gov. Werts of New Jersey could not be present, but he was ably represented by Edward Burroughs who has had so much to do with New Jersey road improvement. He said that although Gov. Werts was full of enthusiasm on the road question he was glad to see that we had with us a governor who was Fuller. He thought that as the Government expended so much money in the improvement of streams which were often nothing more than rivulets it was vastly more important that some money should be used to improve the roads, and he suggested that the money raised from taxes on whiskey and tobacco be applied to highway improvement.

At this point a delegation of 50 New Jersey farmers came into the church and the Chairman made them welcome, while seats were provided for them in the front pews.

Gen. Roy Stone said that the United States Secretary of Agriculture was very sorry not to have been able to be present, but he was with us in spirit.

Gen. Stone, whose position as head of the Government Office of Road Inquiry makes his statements valuable, says that there are about 500,000,000 tons of freight hauled over roads annually in the United States, and he estimates that at least 60 per cent. of the present cost of doing it is due to the bad condition of roads.

In many cases the value of a farm has been increased \$20 per acre by improving the roads over which its products must be hauled to market.

He further stated that the loss from poor roads in this country would aggregate no less than \$623,000,000 yearly.

Mayor Clute of Schenectady, N. Y., referred to the great variety of roads in that State. He spoke of the great importance of proper drainage and crowning of the centre of country roads. Education is needed among the farmers. They should be taught to do the work properly. He cited instances where abutters had been literally forced to have good roads and now wouldn't be put back to the old condition for twice amount of the expenditure.

D. E. De Hart of the north side Board of Trade, New York City, told of a case in his district where it cost the city \$50 to inspect a certain street and finally decide to fix it, and the actual cost of doing the job was but \$5.00.

At another time a committee was investigating a bad piece of road to see whether they should report a bill for its improvement. The carriage containing the committee got stuck in the mud, with the result that the report was favorable to a new road. (Another instance of the advantages of an object lesson.)

Prof. J. Holmes, State Geologist of North Carolina, stated that out of 90 counties in his State, 40 have no rock, and many of them have no gravel, and that they had no educated road engineers. Many of the best cirizens there are waking up to the importance of roads and good results are expected.

Col. Tipton said that the convicts are worked on the roads of North Carolina and with good effect. He told of a road over which two bales of cotton had been hauled with difficulty, and on being made as it should be the same team could haul ten bales.

Martin Dodge, President State Road Commission of Ohio, talked of his plan for building steel roads. An elaborate article by him on that subject may be found in May, 1894, number of this magazine.

Mr. Collins, of Minneapolis, said that the farmers in Minnesota wanted better roads, the only question was how they were to be paid for. He didn't think the farmers of his part of the country were in very bad shape and that good roads were sure to come.

Mr. Darling, of the Commercial Club of St. Paul, said that club could be counted on to back up whatever the conference did. He said that a convention of farmers in his State once passed a resolution to the effect that they would not build roads for the benefit of "bicycle dudes."

Mr. Rhown, of Philadelphia, said he was surprised and pleased to note the interest taken by nearly everybody in the road question, but he saw room for still further work; for instance, he said, "I saw a load of corn stuck in the mud on a down grade in front of my house last spring."

Halstead Smith, of Rome, Pa., said that under the system in vogue in his section every male person (ministers excepted) who has two legs must work 15 days each year on the road. Convicts to the number of 44 are also employed in road building.

An interesting fact in connection with the above was that in the last 12 years the taxable property in the State had doubled in value.

Mr. White, of Florida, said that Jacksonville was the most prosperous town in the country, that it had an aggressive Board of Trade and was bonded for \$250,000 for street and road improvement.

Wharton Smith, of Maryland, whose baldness had been alluded to by some one, excused it on the ground that he was born so. He said his State was famous for infamous roads. He thought as we now had an "Arbor Day" it might be well to have a "Road Day" to be devoted to road discussions and suggestions.

Isaac B. Potter, of New York, said that this country had the poorest roads in the world, and that the best were to be found in France. He advocated a "campaign of education." He stated that he had personally made extensive investigations into the subject of foreign roads and had now in his possession much valuable data which was obtained during his trip.

Geo. A. Perkins, of Massachusetts, gave an interesting description of the working of the Massachusetts road laws and also of the Massachusetts Highway Commission, of which he is chairman.

The success of this conference warranted its members in voting to perpetuate it by annual meetings of a similar character. In view of existing bodies it was not thought best to make this in any sense an organization, but rather what its name implies, a "conference," which may consist of delegates from State organizations and in fact anybody who is interested in the road work.

A Central Committee was elected, consisting of

Hon. Levi K. Fuller, Governor of Vermont, Chairman; General Roy Stone, Department of Agriculture, Washington, D. C., Secretary, and Col. Edward H. Thayer, editor of *The Age*, Clinton, Iowa.

An Advisory Committee consisting of one member from each State and Territory was also provided for.

A practical working exhibition of road machines was made during the two afternoons of the conference. Two rock crushing plants with elevators, screens, bins, etc. One steam road roller and one horse roller. Three road scrapers, together with wagons, carts, etc. As a whole the conference was interesting and instructive and promises to be even more so at its next annual meeting.

## GOOD ROADS BICYCLE TOURNAMENT,

TO BE HELD AT ASBURY PARK, THURSDAY, FRIDAY AND SATURDAY, AUGUST 30 AND 31 AND SEPTEMBER 1.

**T**HIS is a series of bicycle races which will be of the most exciting and interesting kind; all of the big racing men will be there. (The term "big" as applied to world beaters is no longer exactly the thing, since the mile record is now held by one of the smallest men on the track.) Those who go to Asbury Park to see exciting races between the fastest men will not be disappointed.

In that feature the Good Roads tournament will slightly resemble other large and successful race meets.

It has, however, a character which is all its own, and which is winning for it an unusually large share of public approval and support.

The entire proceeds are to go to the Good Roads Department of the League. The use of the grounds and track has been given freely by the Asbury Park Athletic Association. The prizes, most of them, if not all, are being donated by companies and individuals, so that the success already assured for the tournament cannot help netting a neat sum, which will go toward the carrying on of the road work of the L. A. W.

Bicycle manufacturers and others have not been called on this year to help support the Good Roads end of the League, and should they now be asked to do something in the way of prizes for this tournament, we feel sure that they will contribute handsomely and consider it the laying up of treasures which will surely return to them many fold.

The League is not "in need," as has been stated, but it is in a perfectly solvent condition and is getting better all the time. It is not a question of getting along,—we can do that in good style,—but the more we have to do with the more work can be done.

A very interesting feature of this tournament is that the League takes no chances, pays no part of the expenses, and then gets all of the profits.

The idea of doing such a thing originated with "Senator" Morgan, of the *American Wheelman*, whose hustling abilities are well known to all who are in the bicycle swim.

He asked the League to take a direct part in the promotion of the scheme. It was decided, and we believe wisely, that the League of American Wheelmen as an organization should not take an active part in such a tournament.

But the "Senator" was not a man to be discouraged when he had once decided to do this thing. The question arose at once



how can the *American Wheelman* afford to do all the work and give the League all the profits? The answer is easy. The "Senator's" paper will get considerable advertising out of it, and advertising is another name for profit. GOOD ROADS (\$1.00 per year) believes that advertising is a good thing, and any man should be entitled to all the advertising he pays for, and furthermore that any concern which does what the *American Wheelman* is doing for this Good Roadstournament is paying for all the advertising it can get out of it.

The most active man in the details of this affair is

W. M. PERRETT,

who is known all over the country as the "champion clerk of the course." He is now a member of the *American Wheelman* staff and Secretary of the Good Roads Tournament.

EXECUTIVE COMMITTEE.

Isaac B. Potter, former editor of GOOD ROADS.

H. L. Saltonstall, Business Manager of *American Wheelman*.

W. J. Morgan, Editor *American Wheelman*.

ADVISORY COMMITTEE.

Chas. H. Luscomb, President L. A. W.

Howard E. Raymond, Chairman National Racing Board.

Sterling Elliott, Editor GOOD ROADS (\$1.00 per year).

All communications should be sent to W. M. Perrett, *American Wheelman* office, 23 Park Row, New York.

P. S.—All subscriptions to GOOD ROADS magazine should be sent to 12 Pearl street, Boston, Mass.



POLITICAL ITEM.

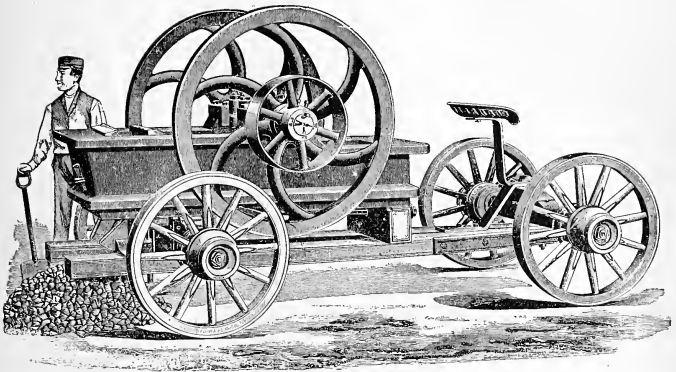
"He has about decided to run and is in the hands of his friends."

## FARMERS' NATIONAL CONGRESS.

HERE is one farmers' organization that has been steadily in favor of good roads. It is the Farmers' National Congress. It is composed of Delegates appointed by the Governors of the several States — one delegate from each Congressional district and two at large from each State. Each agricultural experiment station and each State Board of Agriculture is entitled to send a delegate, also. The delegates appointed by the governors are men of prominence, ability and influence, hence the Congress has great influence among farmers and with the Congress of the United States. The *Chicago Daily Times* recently stated that the Farmers' National Congress had more to do than any other agency with the insertion of the item in the post-office appropriation bill providing for tests of rural free mail delivery. The Farmers' National Congress is not so well known as some farmers' organizations, it is not so notorious, because it is not a political organization and it has not advocated two per cent. loans, sub-treasuries or the abolition of the national banking system; but it has the respectful attention of Senators and Congressmen. At each of its last six meetings more than thirty States have been represented. Its president is Hon. B. F. Clayton, of Iowa, its vice-president is Major G. M. Ryals, of Georgia; and its secretary is Hon. John M. Stahl, of Illinois. In 1891, it met at Sedalia, Mo., and Mr. Stahl made an address on "Transportation of Farm Products," in which he pointed out the advantages of good roads. A resolution in favor of road improvement, presented by him was adopted. In 1892, the Congress met at Lincoln, Neb. Mr. Stahl spoke on "Highway Transportation," and his resolution in favor of highway improvement was adopted. In 1893, the Congress met at Savannah, Georgia. Mr. Stahl again made one of the formal addresses before the Congress, in the course of which he said:

"While the railway charges seven times as much as the waterway, the highway charges twenty times as much as the railway. The greatest obstacle to good roads is our ignorance of how to make them at bearable cost. As chairman of the Committee of Education of the Illinois Highway Improvement Association, I have found, that as for experimental knowledge of hard roadmaking in our State, we have none. Recognizing the great profit there would be in judicious road improvement, this Congress should pronounce in its favor; but it should also demand the establishment of highway experiment stations, that the people's money may not be wasted."

Again the Congress adopted a resolution strongly favoring road improvement and calling upon State Legislatures to enact needed legislation. The next meeting of the Congress will be at Parkersburg, West Virginia, October 3-6, next.



## THE AUSTIN ROCK CRUSHER.

**T**HE frame of the Austin crusher is made of one solid piece, heavily flanged, which renders it rigid and practically unbreakable.

The crushing movement of the jaws is obtained by an application of the toggle joint principle, the most powerful principle known for securing great power coupled with speed. The application of this principle in the Austin Crusher is different from that of any other crusher in distinctive features, whereby the capacity is increased, power necessary to run it lessened, life of the crusher prolonged, and the cost for repairs reduced to a minimum.

The whole jaw does not, as on other crushers, move backwards and forwards, as a pendulum, and on each recurrent stroke, crush with its whole surface; but moves with a divided motion, as it would were it pivoted to a moving centre, always either advancing at the top while receding at the bottom or advancing at the bottom while receding at the top. Herein lies the secret of the Austin's wonderful efficiency. It is always crushing, continuously and unintermittently, the whole power of the machine is being applied to some part of the jaw, and some part of the jaw is always crushing stone.

This remarkable movement is obtained by the shaft to which the swinging jaw is pivoted, moving horizontally in slots, and the combined oscillating and vibrating movement

resulting. On account of this motion of the machine with steadiness, the jaws operating on the stone continuously, there is but little jar, and the working is as smooth as could be expected in a machine which has to do such severe and peculiar work as the crushing of rock.

We saw one of these machines working at the Good Roads Conference in Asbury Park and were much impressed with the ravenous appetite which it seemed to have for trap rock.

One who has lived much in boarding houses could not help appreciating the cheerful and enthusiastic manner in which this steam actuated set of molars chewed up whatever was put into its mouth, and what was equally interesting, it never said a word.

#### WHAT DO LAWYERS GET PAID FOR ANYWAY?

I've been list'nin' to them lawyers in the courthouse where they meet,

An' I've come to the conclusion that I'm most completely beat.  
Fust one fellar riz to argy, an' he boldly waded in,  
As he dressed the tremblin' pris'ner in a coat o' deep-dyed sin.

Why he painted him all over in a hue o' blackest crime,  
An' he smeared his reputation with the thickest kind o' grime,  
Tell I found myself a wond'rin' in a misty way and dim,  
How the Lord had come to fashion sich an awful man as him.

Then the other lawyer started, an' with brimmin', tearful eyes,  
Said his client was a martyr that was brought to sacrifice ;  
An' he gave to that same pris'ner every blessed human grace,  
Tell I saw the light o' virtue fairly shinin' from his face.

Then I own 'at I was puzzled how sich things could rightly be;  
An' this aggervatin' question seems to keep a puzzlin' me;  
So, will some one please inform me, an' this myst'ry unroll —  
How an angel an' a devil can possess the self-same soul?

—*The Green Bag.*

## HOW THEY DID IT

(IN BERGEN COUNTY, NEW JERSEY.)

*By M. T. Richardson.*

*Editor of Good Roads:*

**Y**OUR letter of the 19th ult. was received in due time, inviting information as to the progress of the good road movement in my locality, (Ridgewood, Bergen County, New Jersey.)

The year of the great blizzard, (1888,) Ridgewood township, largely made up of New York business men, after considerable opposition, secured an appropriation of a thousand dollars for macadam on the principle street.

The township Committee purchased blue limestone from the Hudson River region and simply spread it on the road, depending upon the public to ride over and roll it down.

For weeks people drove on the sides of the road rather than travel over the broken stone. Finally in a fit of desperation the township Committee covered the stone with about two inches of gravel. Then the people were willing to ride over it, and it was soon in good condition.

It formed an excellent roadbed, which has lasted up to the present time in fairly good condition, although it was never rolled except with the wheels of vehicles.

The next year an appropriation of \$1,500 was voted for macadam and the amount was expended on the same street in about the same manner. The following year \$2,000 was secured and the year following \$2,000 more.

These different object lessons awoke the people to the necessity for a systematic treatment of the roads of the township and a proposition to bond the township for \$30,000 was carried by a large majority.

The writer happened to be chairman of the township Committee the year this \$30,000 was expended and hence is in a position to assert, that at the present time Ridgewood has some of the best roads in Bergen County, built largely from a species of hard granite from Bloomingdale near Pompton.

A great deal has been learned concerning road construction since Ridgewood first started in with its thousand dollar appropriation.

The second year of our experiment, a small crusher company was started in the town and the macadam for two years was laid by this company and rolled with a two-horse, three ton roller.

When we came to the \$30,000 appropriation the writer insisted upon the work being done with a steam roller. He was

told by contractors in the city of Paterson that just as good work could be done with a good two-horse roller, but an inspection of the Paterson and Passaic roads by the Ridgewood Committee did not bear out the statements of the contractors.

Ridgewood adopted the steam roller and the contractors who secured the job were forced to buy a new 12-ton roller to do the work. They had never had occasion to use anything but a horse roller before. Now nearly all roads in this vicinity are built with steam rollers, as the people are able to see the difference.

Ridgewood's example of road building proved to be contagious. The adjoining township of Saddle River woke up and bonded for \$90,000. Then followed Orvil on the north with \$30,000 and Midland on the east is now considering the question of bonding for \$50,000.

Where six years ago there was not a foot of macadam in the western part of Bergen County, there are now miles and miles of beautiful macadamized roads, which it is not only the delight of the city folks to ride over, but of great practical value to the farming community, which has long since realized the benefits to be derived from good roads.

Farmers, who years ago found it impossible to pull more than a moderate load into Paterson with two stout horses going at a walk all way, can now take all they can pile on their wagons and in many cases can trot their horses comfortably.

It is difficult to say whether there is more truth than poetry in this, there is much of both.

You may talk about your editors who sit in easy chairs  
 And try to boss the whole machine and put on lots of airs,  
 And seek to make the people think it's what they have to say  
 That keeps the business on the move and makes the paper pay;  
 But don't you ever think it, for the whole truth simply is  
 The editor's not in it with that huge conceit of his  
 For there's only one essential in the whole newspaper plan—  
 Success depends alone upon the advertising man.

The men who edit telegraph and write the local stuff  
 Within the little fields they fill may answer well enough;  
 The sporting and dramatic men and small fry such as those,  
 Who gobble all the passes and who visit all the shows;  
 And likewise, too, the poets who insist they must rehearse  
 The simple things they have to say in blind and halting verse,  
 They, one and all, have understood since papers first began  
 That they were mere assistants to the advertising man.

'Tis true the advertising man has naught to do but talk.  
 Yet he's the one who, after all, permits the ghost to walk,  
 For while the editors their pens in trashy stuff engage,  
 He toils on something worth the while—the advertising page.  
 And if you'll but investigate sufficiently you'll find  
 He works more men and hours than the others all combined,  
 To him belongs the victor's crown—this brave catch-as-catch-can,  
 Keen, money-getting, business-booming advertising man.

—Nixon Waterman in Chicago Journal.

## DRY ROADS.

### HOW TO HAVE THEM.

**A** POSITIVE idea positively set, a rest for the weary. Col. D. W. McClung's May Number dry road, is a good road. "Practice is nine-tenths" and practice backs the Colonel's every word.

If the road is shaped up right, and the loose stones off, and iron sluice pipe set for proper drainage, and the roadbed rolled down hard with an ordinary farm roller, the water will run off from, instead of soaking into the road and then it is dry and good. Surprising what a few iron sluice pipes and a day's work with a farm roller will do.

Get your road shaped up and iron sluice pipe set so a rider or driver never knows where a sluice is, roll it down and you have a hard dry road that is a thing of beauty and a joy forever at an expense that is nearly "nil."

—OLD ROAD MASTER.

### HIS SECOND WIFE.

As story-writers often say: "Once on a time there lived a man,"  
Who got it in his head that he was built on a superior plan.  
He fancied that to him belonged the best of all there was in life,  
And everybody bowed to him until—he got his second wife,

And then—  
Ah, then!

He climbed from off his pedestal and she was seated there instead,  
And like a rooster soundly whipped he found his greatness all had fled;  
The sky that had been fair and bright was hidden by a somber cloud:  
"I can't see why," he'd often say, "a mortal spirit should be proud."

His first wife toiled and slaved for him while he ruled like a petty king:  
She'd spare and save and make and mend, and wait on him and fetch and bring.  
But by and by she weary grew, and left this sorry world of strife—  
He mourned her absence ninety days before he got his second wife.

And then—  
Ah, then!

He learned a simple truth or two, but, oh! the irony of fate  
That brings us what we ought to know so well a little bit to late.  
He found that when he should have smiled he often gave a chilling frown,  
And did not prize the golden light until, alas! the sun went down.

How often did he say that when his days on earth had all been spent;  
Whatever wealth he left should then be used to build his monument!  
That was before his first wife died, but when his final summons came  
He left his second wife a will and everything was in her name.

And then—  
Ah, then!

She put him in a plain pine box and buried him where land was cheap,  
And she'd so much to think about she really hadn't time to weep.  
She took a trip to Europe with the wealth his first wife toiled to save,  
And all the widow's weeds there were grew six feet high above his grave.

—Nixon Waterman, in *Chicago Journal*.



### ASBURY PARK BABY SHOW.

**W**HETHER or not the tariff is a local issue, as has been alleged, it is certain that the annual exhibition of babies at Asbury Park is not only a local issue but is the

#### EVENT OF THE SEASON.

The Good Roads Conference was held while the Asbury citizen went about his usual duties.

The editorial convention was but a mere incident.

The Fourth of July races drew 5000 people to the grounds without diminishing perceptibly the appearance of the streets and avenues of that beautiful city.

The fireworks on the evening of the national anniversary were well attended, but still here and there were to be found people who seemed to be following some regular business. But on the morning of the

#### BABY SHOW

What a change was there in the atmosphere of Asbury Park. The listless, tired out citizen of the day previous was suddenly seized with a new style of locomotion, and had in his or her eye a strangely luminous anxiety, while the usually active and stall fed summer boarder was observed to be engaged in the act of thoughtfully thinking of some definite thing, and all were looking and walking in the direction of the ocean.



The editor of GOOD ROADS (\$1.00 per year) being a stranger within the city's gates and noticing the unusual excitement, asked a policeman "what was up." His answer was short enough, but the look that went with it was expressive even for an Asbury Park copper. He looked as though not certain whether he was being made the possible victim of a joke, or whether he had struck a real backwoodsman. He gave the benefit of the doubt, however, and said "Baby Show" in a tone which clearly indicated his opinion of so absurd a question.

There was no trouble in locating the centre of attraction; in fact it would have been difficult to go in any other direction.

On what a Chicago friend was pleased to term the "Lake front" we found a large portion of the inhabitants of New Jersey, but it was impossible to see what they were looking at, owing to the density of the crowd. At one end of the pier was a sign which stated that "The pavilion was for representatives of the press only." GOOD ROADS is printed on a press in view of which it seemed proper that its representative should sit in the pavilion. A short talk with the doorkeeper took the place of the otherwise necessary badge, and GOOD ROADS was placed in view of the long stretch of board walk over which was soon to take place the greatest show that the season affords.

We learned from an old resident that when this baby parade was started, back in the sixties, it was provided that prizes should be given for the handsomest babies. He remarked incidentally that none of the original promoters of the scheme are now living. This, however, may be only a logical result of perfectly natural causes.

The prizes now are given for the best decorated baby carriages without reference to the occupant. It is said that when the personal appearance of the infants was what must be passed upon it was difficult to get judges, finally it became impossible, hence the change.

#### THE PARADE

Consisted for the most part of baby carriages decorated in various degrees of elegance, and occupied in each case by the sweetest little youngster in town. (This last statement may do in a report of this kind, but you can see how the judges might have to be more explicit.) The line was over half a mile in length and showed in a startling and not unpleasant manner how tastes differ. A beautifully and very expensively trimmed carriage contained a young baby whose face was entirely unprotected from the blazing sun. Another was so loaded down with decorations that the tiny passenger was nearly smothered for lack of ventilation.

A majority of these exhibits were evidently from those to whom fortune had been kind, yet there was also seen the gaunt

hand of poverty. A few little cabs from which the shine of varnish had long since vanished, cabs which had in their time done duty for more favored babes, and which now had been turned over, let us hope gratuitously, to little ones who otherwise could not have known such a luxury. A few green leaves with here and there a penny flag showed as did also the light step of the neat but cheaply clad mother-nurse, that the spirit of baby day was by no means a matter of worldly goods but was born of that independent patriotism which makes of the American citizen what it will.

Who can predict the relative social and commercial relations of those two classes of little folks for the next 50 years? No one, and herein lies the charm of our American plan of doing things.

The feature which most impressed GOOD ROADS was the little patrol wagon shown at the head of this story. W. H. Stauffer, the photographer of Asbury Park is not only at the head in his line, but he is an all round good fellow and ever ready to help anything or anybody connected with the League of American Wheelmen; so it was an easy matter to secure his assistance in getting the photograph.

The picture is a good one, but it lacks the effect that was so interesting in the driving through the streets of these tots, the clanging of the little gong, the impressive dignity of the driver as well as the twenty inch mite who stood as straight as an arrow on the tailboard. A remarkable thing about these boys is that they are brothers aged three, five, and seven years and that their birthdays come on the same day. Their names are Francis, James, and George Ross, of Asbury Park.

The dignified little "cop" who is holding the goat is a son of the mayor of Asbury Park. With his red "sideboards," he formed a very striking headlight to the parade.

Dogmatism is puppyism  
grown up.—*Ex.*



## A DOCTOR'S STORY.

A REPUTABLE physician who usually gets a job whenever there is any sickness in the GOOD ROADS family, and who has had in his time many experiences, has a way of relating them to his patients, that no doubt at times benefits them fully as much as medicine can.

Many of the world's greatest men have considered laughter among the healing agencies, and have claimed that every laugh adds to the human life. If this thing is true, (and the columns of GOOD ROADS (\$1.00 per year) are not open to the man who would disprove it), then why should not a physician employ various forms of jollity to assist in the relief of his patients.

But to the story: Dr. ——— was being particularly hard worked, not because Newton is an unhealthful place, but because he is a popular doctor, and on one of these busy days, nearly exhausted in body and mind, he sought the rest which only sleep could give. It was after midnight when his slate was cleared of orders, and he literally tumbled into bed, soon to be given up to dreams of whatever kind a doctor is subject to. About 2 o'clock the telephone bell reminded him that he was still of the earth earthy, and with that feeling of which the reader needs no explanation, he dragged his weary frame out of bed and took hold of the telephone. "H-c-l-l-o-!" and his drowsy ear caught the voice of an excited female at the other end:

"Hello! Hello! is that Dr. ———? Oh, doctor, my baby is crying the whole time, and I can't do anything to stop him."

Doctor. "Possibly a pin may be pricking it."

E. F. "Oh dear, no! I am sure there isn't. I have looked her all over carefully."

Doc. "Well, it may be hungry. When did you last feed him? Won't she eat anything?"

E. F. "I fed her last about 7 o'clock."

Doc. "Well, try it, perhaps she needs food." And the exhausted M. D. fell back and prayed for more charity, pending the receipt of which he once more fell into that "downy sleep which is death's counterfeit." He dreamed that he had reached the pearly streets and was scurrying here and there to escape a scattered throng of anxious mothers who were rushing on him from all directions and having their arms full of crying babies; at last, when hope of escape had left his dreaming soul, and dark despair had claimed him for its own, he heard what seemed to be the wild clanging of the gong on a police patrol wagon; visions of a station house paved with whooping cough and measles, soon gave way to a dim awakening, and the doctor realized that it was the telephone bell. With feelings that would not look well in print, he managed to get hold of the instrument of torture, and in response to his haggard "hello," he again heard the voice of the excited mother, but this time the excitement was of a different kind, and this is what she said:

"Oh! say doctor: that *was* what was the matter."



# AUGUST

August is the hottest month,  
And has the hottest days.  
It also has the hottest weeks,  
And hotentotest ways.

The August heat is hotter  
Than the hottest heat we know,  
If there's any other heat so hot  
We never want it so.

Good Brother Moody tells us  
Of a somewhat hotter place,  
From which escape is only had  
By means of saving grace.

If the great hereafter  
By weeks and months is rated,  
The man who dies in August  
Is in luck to be cremated.

Day of Year.	Day of Month.	Day of Week.	Length of Day.		EIGHTH ▲ August, 1894 ▲ MONTH
			H.	M.	
213	1	W.	14	27	<b>C</b> od help the rich the poor can beg.
214	2	Th.	14	24	<b>O</b> f two evils choose the least.
215	3	Fr.	14	22	<b>O</b> ld friends are best.
216	4	Sa.	14	20	<b>D</b> oing nothing is doing ill.
217	5	S.	14	18	SUBSCRIBE FOR GOOD ROADS.
218	6	M.	14	16	<b>R</b> eckless youth makes rueful age.
219	7	Tu.	14	13	<b>O</b> ne ounce of discretion is worth a pound of
220	8	W.	14	11	<b>A</b> nger dieth quickly with a good man. [wit.
221	9	Th.	14	09	<b>D</b> illigence is the mistress of success.
222	10	Fr.	14	06	<b>S</b> trike while the iron is hot.
223	11	Sa.	14	04	ONE DOLLAR PER YEAR.
224	12	S.	14	02	<b>M</b> odesty is the handmaid of virtue.
225	13	M.	13	59	<b>A</b> full purse never lacks friends.
226	14	Tu.	13	57	<b>G</b> ood council is above all price.
227	15	W.	13	54	<b>A</b> little leak will sink a great ship.
228	16	Th.	13	52	<b>Z</b> oology ignores the human hog.
229	17	Fr.	13	49	<b>I</b> n a calm sea every man is a pilot.
230	18	Sa.	13	47	<b>N</b> ever quit certainty for hope.
231	19	S.	13	44	<b>E</b> xperience is the mother of science.
232	20	M.	13	42	LEAGUE MEMBERS 50 CTS.
233	21	Tu.	13	39	<b>B</b> etter be alone than in bad company.
234	22	W.	13	36	<b>O</b> ne never loses by doing a good turn.
235	23	Th.	13	33	<b>S</b> eldom seen, soon forgotten.
236	24	Fr.	13	30	<b>T</b> hink of ease, but work on.
237	25	Sa.	13	28	<b>O</b> ne eye witness beats ten hearsays.
238	26	S.	13	25	<b>N</b> one know the weight of another's burden.
239	27	M.	13	23	12 PEARL STREET, BOSTON.
240	28	Tu.	13	20	<b>M</b> any hands make light work.
241	29	W.	13	17	<b>A</b> bad workman blames his tools.
242	30	Th.	13	15	<b>S</b> tart the good roads work and then
243	31	Fr.	13	12	<b>S</b> tand by it till finished.

# LEAGUE OF AMERICAN WHEELMEN.

..... Organized 1880. ....

A voluntary organization having for its object the systematic improvement of the public roads, and the protection of wheelmen against unjust legislation. The present officers of the League are as follows :

*President.*—CHAS. H. LUSCOMB, 280 Broadway, New York.

*First Vice-President.*—A. C. WILLISON, 47 Baltimore Street, Cumberland, Md.

*Second Vice-President.*—GEO. A. PERKINS, 15 Court Square, Boston, Mass.

*Secretary.*—ABBOT BASSETT, 12 Pearl Street, Boston, Mass.

*Treasurer.*—W. M. BREWSTER, 411 Francis Street, St. Joseph, Mo.



## GOOD ROADS MAGAZINE.

Published on the first of every month by the League of American Wheelmen.

**Devoted to Highway Improvement.**

STERLING ELLIOTT, *Managing Editor.*

Publication Office, 12 PEARL STREET, - - - BOSTON, MASS.

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\$1.00 per year.

Please send Good Roads for \_\_\_\_\_ year \_\_\_\_\_

To \_\_\_\_\_

Street \_\_\_\_\_

Town \_\_\_\_\_

Amt. enclosed \_\_\_\_\_ County \_\_\_\_\_

Beginning with \_\_\_\_\_ State \_\_\_\_\_

# Opening of a Chestnut Burr.



THE CONNECTING LINK.

WE criticised the artist for showing *two* connecting links, only one being ordered, but he insists that the "link" is the small part in the centre. Can any of our readers settle the question?

IT'S AN ILL WIND, &C.

THE practical workings of anarchy, stimulate the demand for arnica.

A PAIR

OF 16TH CENTURY JOKES.

A young peasant who thought himself very smart, saw an old woman driving some asses along a country road.

"Good morrow! mother of asses," said he.

"Good morrow, my son," said she.

"Ah!" said a conceited young parson, "I have this morning been preaching to a congregation of asses."

"Then that must have been why you called them *my beloved* brethren," said his devoted wife.

GEOGRAPHICAL NEARNESS  
NOT ALL THAT IS REQUIRED.

To have your sweetheart far away,  
It makes existence dark and drear;  
But it is worse — alackaday —  
To have her distant when she's near.

— *Unknown Exchange.*

RUM, RHEUMATISM AND RE-  
CRIMINATION.

"Since you take me to task so roundly for my failings," said the physician, somewhat nettled, "let me ask why you don't restrain your son. He gambles, drinks, and plays the races."

"Ah, yes," said the clergyman with a sigh. "We don't seem to exert much influence over our own families, do we? By the way, Doctor, please convey my warmest sympathies to your wife and say to her I am sorry she is still unable to find any relief from her rheumatism."

— *Unknown Exchange.*

THAT'S ONE REASON WHY WE  
ARE POOR.

My son, if you are flush, associate with the well-to-do, for they are not likely to borrow; but if you are broke, keep on good terms with the poor, for they are more willing to lend.—*Puck*

PERHAPS HE WENT UP THE  
OTHER WALK.

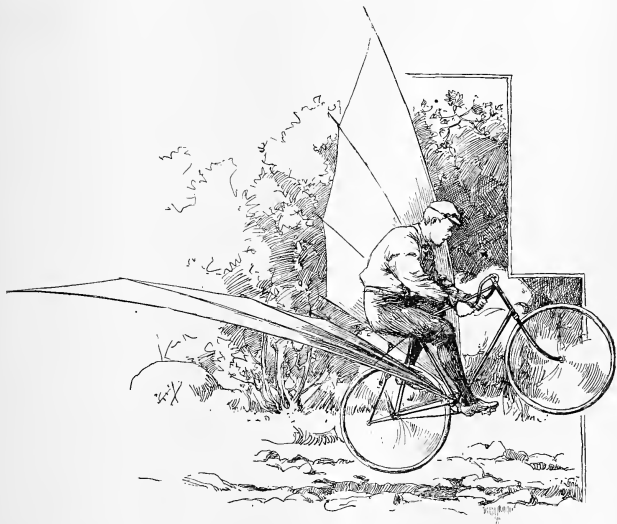
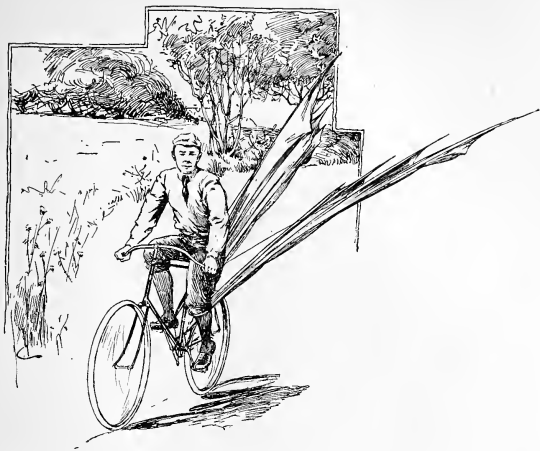
A little four-year-old created a ripple by remarking to the teacher of her Sunday-school class: "Our dog's dead, and I'll bet the angels were scared when they saw him coming up the walk. He is so cross to strangers."—*Zion's Herald.*

HOW CAN THEY QUARREL OVER  
WHAT THEY HAVEN'T GOT.

Sunday-school Teacher—"What are the heathens?"

Bright Boy—"Heathens are people who don't quarrel over religion."

— *Good News.*



In view of the interest being taken in flying machines (GOOD ROADS, \$1.00 per year), makes the above suggestion. The bicycle is all right on a good road, and the air over a bad road is smooth enough for flying purposes. Why not combine the two modes of travel? GOOD ROADS would like a partner with large capital (which he could spare) for the development of this brilliant idea.









GOV. LEVI K. FULLER.  
Of Vermont.

# GOOD ROADS.

Vol. 6.

September, 1894.

No. 3.

## GOOD ROADS AND THE TARIFF.

**D**URING a recent visit to Washington the writer occupied a sleeping-room next to one of the hotel parlors, which parlor was being used for some sort of an informal meeting, and contained a number of gentlemen who were having a pleasant time, drinking ice water and talking over the political situation.

They seemed the best of friends and were in a very frank and talkative mood. There was a rather loosely fitting door between the parlor and sleeping-room and to avoid hearing much of the conversation it would have been necessary for me to cover up my ears; in view of the warm weather, however, it was not difficult to decide between courtesy and comfort.

Although I heard no names I soon gathered from the talk that at least three of the occupants of the parlor were members of Congress and the others, perhaps five or six, were friends "from home" who were in Washington for a visit, and incidentally for the purpose of seeing what could be done toward fixing up various items in the tariff bill, which was pending and had been for several months.

One of the visitors who was evidently interested either in the mining or selling of coal, said, "of course to put coal on the free list would, for the time, be a rather bad thing for us and no doubt lessen our profits, but we must admit that for those who use coal, which means everybody, it would be a good thing to have the price of so necessary an article made as low as possible. If the coal miner of Nova Scotia can supply coal to New England cheaper than we of Pennsylvania can do it, I see no reason why our countrymen in that part of the States should not have the benefit.

"Then do I understand you," said a man whom I took to be a member of Congress from the district of the first speaker, "that you would like to have me vote for free coal?"

"Certainly! so far as I am concerned, I, as a consistent and Christian Churchman cannot advocate a thing simply because it would be to my personal advantage, so long as it is obvious to me that it would be to the direct disadvantage of many others."

A third speaker who was a manufacturer of something the name of which I did not hear, said :

“My product is protected by a duty of nearly fifty per cent. To be sure, I have made some money that I could not have made in open competition with foreign goods, but I don't mind admitting to you that there is another side to it. The money we make, over and above what the goods *might* be sold for, comes out of somebody who is being taxed as much as the price is higher, for the purpose of making me wealthy. I enjoyed it for a time, but as I get older and have to realize the end of things, I am beginning to wonder whether after all, the satisfaction which comes with the possession of wealth is not considerably modified by the thought that we have not rendered a full equivalent.”

“But how about the wages paid to your workmen, have they not been kept at a higher figure on account of a protective tariff,” said another of the party. “Well,” said the manufacturer, “I have been in business now for over forty years, have employed a very large number of men, and of course have seen many ‘strikes, lockouts, boycotts, &c.,’ and through it all we have done just what all other manufacturers have done. We have paid for labor just as we have paid for material, viz: whatever we *had to pay* to get it *and no more*. If the demand for workmen was brisk and our men could go elsewhere and get more than we were paying them, we simply had to meet the advanced price or let them go, and when the demand for labor was light and we could hire more men than we could use, we never thought of raising our scale of wages, but on the contrary a continuation of those conditions always means a cut down.”

“But when on account of a protective tariff your goods were in demand at an advanced price did you not at once increase the pay of your employees?” asked a mild voiced gentleman who had not before joined in the talk.

“No manufacturer voluntarily pays more than the market price for anything, if he did, his rating would not, for long, warrant any extended credit. We have made a great deal of talk about ‘American wages for American workingmen,’ but I don't mind telling you, though it seems strange that it should be necessary to tell anybody, that a manufacturer cares nothing for his help beyond what he may be able to make out of them. Of course he may seem to be generous and furnish them with pleasant quarters, give them special excursions, &c., but do you think for a minute that it is because he loves them personally? Why should he have a warm personal feeling for a workman of quite ordinary intelligence and who is a total stranger to him, whose name or face he does not even know, when he will despise with an undying hatred his business rival who may be his equal in every respect? Business! my boy! business.”

“But you give as a reason when asking for a high tariff

that you want to see the American workman get good pay."

"Why certainly! How else could we hope to get his vote? You don't hear us talking that sort of stuff just *after* election do you?"

"How about the argument that cheap foreign goods would be of no use to the American workman if he can earn no money with which to buy them?" came from the M. C.

"Well, as you have stated it, it is unanswerable, but who says the American workman would have no money, even under free trade?"

"Who says it? Why every protectionist says it."

"I have no doubt, and many seem to believe it. Why I used to say it myself. I talked it for years after I knew better, but it was, and is, profitable to me to have people think so, though, as I said before, I am beginning to feel ashamed of it.

A country which consumes, as our does, nearly all that it produces, and which has resources superior to any country in the world, and an acreage equal to all the rest of civilized Christendom, does not longer need a *protective* tariff.

Free trade, or a low tariff for revenue, if accomplished at once, would of course bring temporary distress on some of our people (a comparatively few), but doesn't the Bible say that "it is better that one of our members should perish than that our whole body should be cast into hell fire?" At this point a rap was heard on the outer door and another Member of Congress was admitted.

After the usual salutations the new comer said:

"Gentlemen I have just come from a caucus at which both of the great political parties were well represented. The result of the meeting was that we decided unanimously to go into the Capitol building to-morrow with the earnest determination to do something at once.

To waive all selfishness and personal feeling.

To ignore the lobby.

To vote *with* our conscience instead of *against* it.

To concede to each other enough points to insure a perfectly just, fair and Christianlike tariff, based on the most good to the greatest number.

We have decided to bury all sectional hatred.

To forget all party prejudice and simply take a broad view of things and *do right*.

We further agreed unanimously that the most burdensome tariff at present paid by the American people, is paid solely on account of *bad roads*, and that we will at once, both individually and as a body do all that may properly be done to hasten the day of *Good Roads*.

We have concluded that in the past we, as Congressmen, have spent too much of our constituents' time and money in wrangl-

ing about selfish and local matters and that in the future we will "——"

Bang. Bang. Bang.

"Seven o'clock, sah!"

And the GOOD ROADS man woke up.

#### THE OLD COUNTRY ROAD.

Where did it come from and where did it go?  
That was the question that puzzled me so,  
As we waded the dust of the highway that flowed  
By the farm like a river—the old country road.

We stood with our hair sticking up through the crown  
Of our hat, as the people went up and went down,  
And we wished in our hearts as eyes fairly glowed  
We could find where it came from—the old country road.

We remember the pedler who came with his pack,  
Adown the old highway and never went back;  
And we wondered what things he had seen as he strode  
From some fabulous place up the old country road.

We remember the stage driver's look of delight,  
And the crack of his whip as he whirled into sight,  
And we thought we could read in each glance he bestowed,  
A tale of strange life up the old country road.

The movers came by like a ship in full sail,  
With a rudder behind in the shape of a pail,  
With a rollicking crew and a cow that was towed  
With a rope on her horns, down the old country road.

And the gypsies—how well we remember the week  
They camped by the old covered bridge on the creek;  
How the neighbors quit work and the crops were unhoed,  
Till the wagons drove off down the old country road.

Oh, the top of the hill was the rim of the world,  
And the dust of the summer that over it curled  
Was the curtain that hid from our sight the abode  
Of the fairies that lived up the old country road.

The old country road! I can see it still flow  
Down the hill of my dreams, as it did long ago,  
And I wish even now that I could lay off my load  
And rest by the side of the old country road.

—*Ladies Home Journal.*

## WHAT OUR COPYRIGHT MEANS.

A COUNTRY editor writes to say that he would like to reprint an article which he finds in GOOD ROADS but as it is copyrighted he "didn't dare to do it." We appreciate and applaud the spirit of fairness which prompted this conscientious editor to stay his hand, ere he plucked the fairy flower referred to. Such careful regard for the rights (copyrights) of another is not less to be commended because there is so little of it to commend that we are liable to get out of practice.

GOOD ROADS (\$1.00 per year) is copyrighted, not to prevent the use of its matter, but only to obtain credit for such use.

We are not only willing, but *particularly anxious* that our exchanges should make use of as much GOOD ROADS matter as they will, only asking that proper credit be given.

A western farm paper recently went so far as this:

"The following article is taken from GOOD ROADS Magazine, published by the League of American Wheelmen, at Number 12 Pearl Street, Boston, Mass., \$1.00 per year, Sterling Elliott, Managing Editor."

The other extreme is like this:

"There are many towns in which the majority of the voters are not in favor of building good roads, yet in most places there is at least some one responsible man whose heart and head are both right, and these men (sometimes there are several) are doing what they can to overcome the obstacles which stand in the way of voting the necessary money, says GOOD ROADS for May." We are even satisfied with this style of credit, when it pleases the editor to do it that way.

The League of American Wheelmen is running GOOD ROADS for the purpose of helping along the Road Movement, and for no other reason. The more road matter is published, from whatever source, the better it is for the cause, and the more successful will be that thing for which we are working.

It is said that corporations have no souls, this however, does not apply to the League of American Wheelmen. It has a soul, not one of those intangible and hard-to-get-hold-of souls that we hear so much about, but a real useful, live soul, which is firmly attached to a very robust and progressive body.

"WE WANT BETTER ROADS."

We are doing all we can to get them.

We are getting them.

The procession moves.

We are in it.

Are you?

And if not, why?

\$1.00 per year will keep your name enrolled among those who are "with us."

## CHEAP VS. GOOD ROADS.

BY GOV. BROWN OF MARYLAND.



GOV. FRANK BROWN.

THE improvement of roads and the laws to properly construct and maintain the same in the most economical manner, are being discussed through the press, road conventions, and road leagues in all parts of the United States.

This agitation of the subject must lead to important changes in our road systems, and eventually to the general improvement of the roads of our State and country.

Under the system in vogue in Maryland large sums are annually expended without adequate benefits. In most instances, partly from the want of scientific

knowledge on the part of many of the supervisors, and in nearly all cases for want of sufficient funds to enable the supervisor to properly grade, pave and improve the roads.

The first difficulty can be easily overcome by enacting general or local laws, thereby placing the control of the roads in the hands of competent road engineers. But the great obstacle in the way, is to provide for the heavy cost attending the improvements desired.

Therefore it has been suggested that the State co-operate by creating a road loan to mature in fifteen years, so as distribute the burdens of taxation.

Then there comes the question as to whether the tax payers of the flat and sandy sections of the State (where road improvement is not so material) would be willing to co-operate in the issuing of the State loan to be redeemed by general taxation.

All of these questions and many others naturally come into the discussion.

A further suggestion has been made that the statutes of the State be so amended as to place all the roads under the supervision of a competent State engineer.

And further, that the local laws of the counties of the State be so amended as to assess benefits and award damages



to the property holders through whose property the roads of the State pass.

Experience and observation have taught the citizens of the State that lack of foresight has been too frequently displayed in the opening of the country roads, especially through the rolling and mountainous sections of the State. It has been too frequently the custom to follow the boundary lines of farms, and thereby always increasing the length of the road, and in instances adding immensely to the grade. This is accounted for by the fact that the Commissioners who are authorized to open the roads do not wish to do damage to the land owners along the line of the proposed opening, and hence the custom has been to follow most any route that the owners of the property would donate, rather than to make a direct road from point to point regardless of the ownership and any slight damage that might attend the same.

Road making is an art which can properly be applied only by those who have been especially trained in the theory and practice.

It is evident that the people of the State are much interested in this question; and recognize that the general improvement of the road system would result in increasing the taxable basis of the State, by the general enhancement of the property values in the rural districts, and further, by the general advantages gained in many directions by good roads.

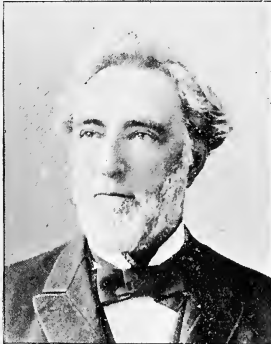
**T**HIS IS AN ADVERTISEMENT and we put it here because we consider this a good position. We wouldn't sell this space to an outside advertiser, and we wouldn't use it ourselves except for a most worthy object.

But those volumes of *GOOD ROADS* which we are just having bound are very neat. The whole set to July 1st, (twenty-nine numbers) are handsomely bound in cloth, five volumes, for one dollar per volume. Just the thing for a public or private library. In fact, a library without them, would be sadly incomplete so far as road literature is concerned.

# THE HISTORY AND CONSTRUCTION OF OUR HIGHWAYS, AND WHO SHOULD BUILD THEM.

BY HON. N. G. SPALDING.

*Commissioner Appointed by Gov. Flower to prepare the New York State Highway Manual.*



HON. N. G. SPALDING.

IT has been well said that the condition of the highways of any country forms the true index of its civilization.

Savages have no highways, they follow trails through forest and fen. Marked trees and mule paths point out the way to the semi-barbarian. The wild Arab follows the footprints of camels left in the sands of the great desert. But advancing civilization always brings improvement to highways.

The ancient Carthagenians made clearings for the transportation of troops and military supplies—but well-defined roads did not exist until the golden

age of the Roman Empire.

In no one thing does Roman civilization appear to a greater advantage than in the durable and massive structure of her highways. Among these roads the most important was the "Appian-Way." This famous road extended from Rome to Brandisium, a distance of three hundred and fifty miles, and marks the transition between barbarous and civilized Rome. It was constructed by digging two parallel trenches two or three feet in depth, at the bottom of which were placed two layers of flat stones in mortar. Then came a course of pebbles or concrete. Over this were placed large, flat blocks of smooth lava well joined together, and though two thousand years have passed since its construction, yet ruins of its splendid viaducts are still extant. Traces of these old Roman highways are still found in England and other parts of Europe. But the fall of the Empire brought an end to road improvement.

During the Medieval age the highways of Europe were wretched indeed, and became practically useless. Macaulay says, "that in the fifteenth century, the royal coaches, even in sight of London, have often stuck fast in the mud."

But with the revival of art and literature, some attention began to be paid again to highway construction and improvement. In the sixteenth century, a law was passed in England for the appointment of two Commissioners of Highways in each parish, with authority to compel the people to work on the highways. This was the origin of our present system of "working the roads," and I have thought if it "worked" no better than it does at the present time, it was a signal failure.

The first modern scientific plan of road construction, however, was devised by Thomas Telford, a Scotch engineer, who lived about the middle of the eighteenth century. This plan was really a copy of the old Appian-Way. It consisted in digging a trench from thirteen to eighteen feet in width, and from twelve to eighteen inches deep. At the bottom was placed in cement or pitch a layer of flat stone. Above this were two layers of pebbles. On each side of the trench were placed flat stones set on edge and rising to the surface of the road, which acted as curbstones to keep the whole mass in position. The smaller pebbles were placed on top and then thoroughly rolled. Telford supervised the construction of a road after this plan extending from London into the North of England, a distance of nearly one thousand miles. This is known as the *Telford Road*, and is even now pointed to with pride by all Englishmen.

The Macadam road superseded the Telford. John Loudon Macadam, the inventor, was also a Scotchman and died as late as 1836. He repudiated the Telford theory that the road needed a stone foundation, which has led to a valuable revolution in road construction. He maintained that the soil itself—mother earth—when properly drained, formed a sufficient support for the heaviest loads. He drained the roadbed thoroughly, rounded it well, and then covered it with a surface of not less than seven inches in thickness of small crushed stone not to exceed the size of a walnut.

Macadam was the first to discover that stone broken into small segments would concentrate into a solid mass under pressure, and form a durable surface. This was a great improvement in road construction, as it did away with the expensive stone foundations of the Telford road and the old Appian-Way.

The popularity of this road soon became wide-spread; over twenty thousand miles of it being built in England alone the next ten years.

It is now generally conceded that the stone road on the Macadam plan—that is a well drained bed, covered with small, uniformly broken stone to the depth of from six to eight inches, well pressed with heavy rollers—is the best and cheapest road that can be built on our great thoroughfares.

The French boulevards are mainly constructed on this plan.

The famous roads of Staten Island and of Union County, New Jersey, are built on the Macadam plan. Many thousands of miles of this kind of road are already constructed in the United States.

It is therefore evident that the time is rapidly approaching when this system of road making will become universal for all the great thoroughfares of the nation.

But while discussing the importance of the two best systems of highways, it must be borne in mind that the cost of these roads is such as to preclude their general introduction into the great agricultural districts of the country. They may and should be utilized for the great thoroughfares leading to our cities, it is true—but they cannot be introduced into the more sparsely populated districts. A cheaper plan must therefore be substituted—what shall this be? My answer is the gravel road. The cost of a well constructed Telford road is from ten to twelve thousand dollars per mile, while the Macadam road cannot be constructed for less than seven thousand dollars per mile. But a well constructed gravel road can be built for from five hundred to one thousand dollars per mile. We cannot too earnestly press the importance of thorough drainage. Were I asked what is the first requisite for a good road, my answer would be drainage. Were I asked for the second or third requisites, my answer would be in every case, *drainage*.

Let our country roads be thoroughly drained on the Macadam plan with a well defined ditch on each side, then covered with gravel from six to eight inches in thickness, well rolled, and we have a road on which a king might be proud to travel. It is not a few beautiful speedways laid out through the several States at a fabulous cost, but it is the ten thousand cross-roads where the people live, that need improvement. This is the problem to solve! How shall these roads be built? By the nation? We answer no. Colonel Pope deserves much praise for the zeal he has manifested in road improvement, and for the monster petition he rolled into Washington, asking for a government department “for the purpose of promoting knowledge in the art of constructing and maintaining roads.”

We need no national highways. [Henry Clay once said, “the States should be connected ‘with a cordon of national highways.’” But this was uttered fifty years ago. We had no railroads then. But now the iron rail forms the *cordon* that binds the States together, crossing and recrossing at every angle. They now form our Appian-Ways. They are the Telford roads of commerce, and therefore supersede the necessity of national highways. The traction on the rail has reached its minimum. A mill per mile per ton is the actual cost, while the traction on the best Macadam or Telford road is such as to make the cost from five to ten cents per mile; competition is therefore out of the question.

We have one million and five hundred thousand miles of roads in these United States. To Macadamize or Telfordize these roads at national expense is preposterous. It would beggar the nation! Not even Coxe's whole army could accomplish this herculean work in a thousand years.

Shall we build these roads solely by the aid of the State? We are confronted with the same objections. In the State of New York there are one hundred and twenty thousand miles of public highway. It may well be asked if the State is to Macadamize these roads, from what source is this vast expenditure to be derived? Where are we to begin? When shall we end? And what generation will see it completed?

Our road improvement to be made a success must be localized. It must be brought into sympathy with the people. The county is therefore the largest unit of territory that can be successfully worked.

With a competent engineer in each county, under the direction of the Board of Supervisors of the towns, who shall have the supervision of the county and town roads, with our road tax paid in cash, and every pathmaster and commissioner of highways amenable to the engineer, our highways would be improved under a system of self government where the people will have a voice in the improvement of the roads and the expenditure of the funds, and efficiency and intelligent management must be the result.

We have nearly fifty thousand pathmasters in this State. Under the supervision of the proposed County Engineer let only thirty rods of first-class gravel or Macadam road be built each year, and an aggregate of five thousand miles a year of first-class road would be constructed without an extra dollar's cost to the State. Here rests the solution of our problem.

It is urged by the advocates of national and State aid, that Europe surpasses America in the grandeur and magnificence of her highways. But with this system of local self government and intelligent management of our highways, in a few years America would surpass Europe, not in a few costly speedways, built by her tyrant kings in past generations with the cheap toil of her pauperized peasants, but in the beauty and symmetry of her ten thousand cross-roads running from the farms of her free people to the markets, built for the people, by the people, and with the people's money, and no additional expenditure of the public funds.

## THE ROAD OF THE FUTURE.

BY W. L. S. BAYLEY, C. E., CHICAGO.



W. L. S. BAYLEY.

**D**ISCLAIMING any intention to animadvert upon the practice of imitation as illustrated by the custom, almost universal, of building as others have built, notably in adopting the methods of Macadam and Telford; I yet do not see my way clear to avoid exposures of the really fatal errors of the one, or the half-way re-adjustments of the other.

Telford saw that when Macadam crushed stratified stone he exposed the material to almost certain death by the inevitable shocks of traffic; thus accentuating chemical action; the effect of which, on limestone in particular,

was to crush it, grind it, dry it, powder it and blow it away at the rate of one-half inch of surface in each twelve months; so that he (Telford) used broken stone for his foundations of yet too small a cubical area: or, to illustrate—Macadam considered crumbs as proper road food, while Telford thought that half-loaves were better for sustaining road life, while we of to-day know that nothing short of the whole loaf, will furnish a true support for roadway traffic.

In the line of limestone we are understood to mean that nothing smaller than wall rubble will be self-sustaining, and if not self-sustaining how can it be sustained?

The art imitative appears to have been co-existent with the present life of the world; the beautiful, the poetic and truthful effusions of those whose duty it was to write of the present period of the earth's history, have so often received scientific endorsements that it is safe to say that about 6,000 years have passed since this old wanderer in space was rehabilitated and made fit for the existence of man, who, finding suitable conditions for his reasonable comfort, came. It is not strange that when the gates of Paradise clanged behind the guilty but not unpardonable couple, it became the mournful duty of Adam to build a road for the unshod but dainty feet of the deposed queen mother.

Taking our stand at or near that gate and at that time, we note that man's character and habits were of a high or low degree, in accord with his environments. This is to say complete isolation made, and will make a brute of him; while a higher and better life is insured by social contact. The view that we get is through a vast cornucopia whose apex was near the Garden of Eden, and whose length is, to date, 6,000 years.

It is the law of our being, that whatever is required, is produced; hence primitive man had little need of good roads. They are the essential elements of an advanced civilization; so that whether in Babylon or Peru roads were builded, not so much for commercial as for social effects.

In imitating, it is essential that we thereby improve upon the pattern, else advancements are lost.

We are, in our professional life as road makers, imitating the two English engineers, but not with, I fear, the wisdom which would have been theirs, if in the order of life's providences they had been allowed to live on and on to our time. If such a miracle could have been, Macadam would not have killed limestone by crushing; neither would Telford have insisted upon geometrical shapes. In condemning the practice of crushing soft, stratified rock, we as distinctly intend to recommend for foundation purposes, a combination of concrete made of Portland cement and quartzite, under a pressure closely analogous to the power of gravity which builds worlds. We say quartzite and purposely discard granites because of a disintegrating parasite known as mica which never did and never will, affiliate to produce a perfect concrete.

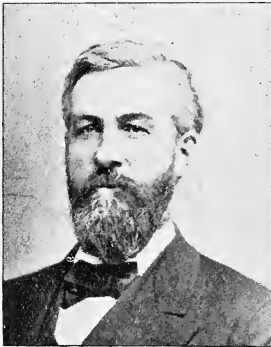
Of ways, means and methods by which we are to be saved from ourselves, there is no accentuating cause so great as the turning of the wheels. God bless the wheelman and his physical requirements. He must have a road as nice and clean as the proverbial kitchen floor.

The signs of the good road zodiac appear to, in fact do, determine that he shall have the road he wants.

If thou bear thy cross willingly it will  
bear thee. If thou bearest it unwillingly  
thou increasest thy load, and yet thou  
must bear it.—*Kempis*.

A PLAN TO INCREASE THE CIRCULATION OF CUR-  
RENCY, AND MAKE BETTER THE ROADS  
OF THE COUNTRY.

BY SIMON SCHRIVER.



SIMON SCHRIVER.

THE people of the country are desirous that there shall be an increase of money in circulation—and in the absence of any thing better, have largely advocated an unlimited coinage of silver, that certificates may be put in circulation against it. There is no doubt but they are right on the question of more money, for the population is increasing while the paper money is growing less, except as certificates have been issued in payment for silver.

Unlimited coinage of silver is a dangerous expedient, and would be disastrous if long con-

tinued. If something better can be devised, it will be hailed with satisfaction by the people of the country. Reflecting on this fact, it has occurred to me that relief can come, and in a way with which the great majority of the people will acquiesce.

As the question of good roads is becoming so prominent before the people of the country, this cause could be promoted by the suggestions that I shall offer. I would recommend a National Convention (and the Congress could resolve itself into such convention), representing by one or more delegates every Congressional District of the entire country, to discuss and decide upon the necessary amount of money to be put in circulation to conveniently do the business of the country—naming the fullest amount without being redundant.

It has been said by prominent men who have given thought to this question that the people require \$50 per capita.

This seems to be large, and that \$30 might be sufficient. Assume that the latter sum be agreed upon, that would equal about two thousand millions of dollars for the entire country. I believe the majority of the people would favor this amount. If the people by their representatives so decide, the General



Government can with propriety issue the money. And having done so, I would have the Government by loan apportion it among the different States in proportion to population, and take from each State a bond at four per cent. interest for the amount of its loan. I would have the State in the same way divide the money with the counties according to population, and take the bond of the county at four per cent interest. Would next have the county divide with the towns giving each \$30 per head, and take the bond of the town at same rate of four per cent. The proper officer of the town, say Loan Commissioner, should loan this money to the freeholders of his town that could give sufficient and approved security at the above rate of interest. The whole to be done to agree with a prescribed form furnished by the State for the loan and security of this fund. I would have the Commissioner on receiving interest on this loan, deposit the same in bank, take a certificate of deposit and forward to the County Treasurer; who, on receiving certificates from the several towns in the county, would deposit the same in bank, take a certificate for the amount, and send to the State Comptroller; who, on receiving certificates from all the counties in the State, would also make a deposit, and for their sum would send a certificate to the General Government, which, on receiving it would give credit to the State for the same, and would then return it to the State with a *coupon* that would be evidence that the interest had been paid—such coupon to be filed as the voucher.

The Comptroller would surrender the certificate to bank, and take up the certificates of all the counties of the State, and to each Treasurer respectively would send back the one received from him together with the *coupon* as above. The County Treasurer would return to the bank the certificate it gave him, and take up those against the towns of his County\*, and return to the Loan Commissioner of each town respectively, its certificate and coupon.

The Commissioner would next present the certificate to his bank, and at the same time draw his check for the amount payable to the order of the Commissioner of Highways, who would use the money for making good roads in the town in which this interest had been paid. The clerical labor for the Government, State Comptroller, and County Treasurer would be very light, as they would handle it as a whole.

The greatest labor would fall upon the Commissioner in making the final loan, and there would be required the greatest care for its security.

That the Government might be assured that the object of the loan had been carried out, is the reason for the prescribed form of deposit from town, county and State—and such requirement will make it obligatory upon each town to raise promptly its interest, or take from its tax levy, if but temporarily. As the

interest is to be used in making good roads, I would make it as high as the loan would bear—hence not less than 4 per cent.

As it would result in a benefit to the public the loan would be given the preference, and would be applied for by all that are debtors, and better roads would be the result. As a consequence of this Government issue the banks would have no circulation, but would do business on their capital and deposits. This large sum would of course become deposits of the banks. There are many things might be said as to the manner of procedure, but the main thing is to make the loan, and at as high rate as can be, and to use the interest for the making of good roads. That there might be no conflict as to where this money should be expended, I would have the State prescribe the direction of its use. I think it should be first used from the populous village in each town in the direction of the shire town of the county; and from each shire town on the most direct road toward the capital of the State. As two thousand millions of dollars is \$30 per head for the population of the country, the amount of interest would be eighty millions a year, and would build 20,000 miles of road at \$4,000 per mile, and without tax; and would be paid by the borrowers of this money at two-thirds the usual rate, saving to the debtors forty millions of dollars, besides having \$80,000,000 expended in making better the roads, and all in one year *without tax*, and to be repeated year after year. To this may be added work for 400,000 men at \$1.50 per day for six months at twenty-two days each.

This plan can certainly do no injustice to anyone, and is to be commended for that reason, and from the fact that the beneficial effects upon the business of the country would be simply immense; and would greatly relieve and lessen present debtors, and immensely stimulate the industrial activities of the country. As the country's wealth is measured by the days work its property represents, the resultant increase of real property would soon make it without an equal in wealth among the nations of the earth.

Having made better the roads to the extent mentioned above, if it were considered not rapid enough, it might be increased, say as much again, by dividing the cost with the town, county, and State, each paying one-third, and at same cost per mile would build in each year 40,000 miles with an inappreciable local tax, besides giving employment to 800,000 men for six months in each year, making an expenditure of \$160,000,000, half of which in labor and expense would be done as never has been done before, *without tax*, and with no injustice to anyone. As to the constitutionality of a loan for such purposes there can be no doubt, as the founders of the Government, and the spirit of the Constitution, have contemplated a national expenditure to make suitable the roads for postal and military purposes. To

make this a national question, and to reduce road making to contract work under the most approved method, would correct the loose and slovenly way in which the highways of the country have been worked. The interest on New York's proportion (fifty millions) of this loan might be used for the construction of rapid transit, and continue to be used until the work was completed; together with necessary issue of construction bonds by the city, with a provision for their redemption after the work was finished of the two millions a year, besides the net earnings of the road until the bonds were extinguished, which would give the road to the city *without debt and without tax*; besides giving an immense amount of work to the laborers of the city and others who would furnish the materials for its construction.

There can be no doubt but that the Government can with propriety make such loan to a State, and take the State's bond, for there would be no partisanship in it, and could cause no centralization of power; but would simply be a condition by which the State would hold the same relation after as before to the General Government. The practical work could not be carried on by the General Government successfully, for there would be too much detail, and for other reasons; besides, this should be the work of localities. This scheme is a plan without tax, except in a small way to the town which accepts the loan. Such town will be required to loan and collect, and to keep this fund intact, and the assessed real and personal estate of the town shall be liable to the county; the county to the State; and the State to the General Government. This fund may be perpetual, or a time fixed for its payment, or left to be determined by future legislation. I would have this issue redeemable in gold on demand, and acceptable for all dues public and private, including duties on imports; which would tend to make the gold of the country gravitate toward the National Treasury.

I would make any collusion between two or more persons, which would indicate a purpose to embarrass the Government, a misdemeanor, with a proper penalty for the offence. As the Government is the people; and as this loan would be at the request of the people, by their representatives delegated for the purpose—for the benefit of the people, there would be no self-embarrassment by individuals presenting this money for redemption in gold; but gold would chiefly be required to pay foreign indebtedness when the balance of trade was against us. The issue of such loan would so revive industries and business as to make our securities advance, and foreign creditors would regard them the most desirable investment of any in the world, and cause gold to flow in this direction.

Time passes rapidly—can we comprehend the result of this plan for ten years? It would build a road equivelant in miles of eight times around the world, and without tax or debt.

This plan is further to be commended for the reason that in it there is no class legislation — there are no exactions from the rich for the benefit of the poor, but it is simply a national act for the public good.

Any individual benefit will be simply incidental, and yet individual benefits will be very great among both debtors and laborers, and no wrong will be done to creditors. To view the question in a philanthropic as well as business sense, it becomes our duty to legislate to alleviate the hardships of the debtors, especially when by so doing we are not unjust to the creditors. As it is an axiom that to give increased employment to the working people at full pay will bring relief to such as may be in debt; so will financial aid to the business world redound to the commonweal of the whole people.

It might be well to further consider the loaning of this money by accepting bonds of a public indebtedness that have been issued for sanitary purposes; or for public water works; or for the building of schoolhouses; or for other public benefits that have been or may be created in the town that has accepted this loan, and whose bonds are not less than four per cent interest.

As the amount of money at present in circulation must be considered in this plan, I would suggest, that after the amount required has been determined upon, that there be as much less issued as shall be equal to the amount at present in circulation. Or, if the aforementioned amount be agreed upon and issued and found to be excessive, that the excess in present circulation be retired as rapidly as practicable. The public understanding these facts, their business affairs would shape themselves accordingly. While I would recommend that the interest on this loan should be entirely used in making good roads; still it might be expedient not to make it mandatory, but that each State, or locality, should decide for itself the kind of public improvement it would make. There could be no anxiety for this fund beyond locality of final loan, for when the Loan Commissioner gives public notice that he has sent to the County Treasurer his certificate, and presently announces the return of the certificate, the people of the county are satisfied that the purpose of the Government has been carried out.

## ATTRACTIVENESS OF GOOD ROADS.

BY GOV. SMITH OF NEW HAMPSHIRE.



GOV. JOHN B. SMITH.

THE question of Good Roads is a very important one before the American people to-day, and this in itself is an encouragement.

It is certainly an important question, and we feel it is especially so in New Hampshire. I have taken a considerable interest in the subject and have recommended it to our Legislature, and commend it to our people on all suitable occasions.

Nothing would be of more advantage to our own State, and to our communities than the improvement of our highways.

One-fourth of one per cent. of the assessed valuation is expended upon our public roads—

twice that amount ought to be devoted to that purpose. Our towns and municipalities could well afford to incur debt for the immediate improvement of the leading highways. One such in each town should be made a model of its kind. The benefit to accrue from Good Roads is incalculable, increasing the pleasure and comfort of the people—adding largely to value of village and rural estates. Strangers are attracted to our State by the beauties of her natural scenery—which is God's work—Good Roads, the work of man—would be an added attraction of no small consequence.

These transient residents—the summer visitors—would be induced to come in larger numbers and prolong their stay. The farmers especially would be benefited. A great saving in expense of transportation of farm products to market and railroad would result. A saving of wear and tear of harness, and cart and carriage, and a mercy to beasts of burden.

Let us keep this question continually before the people. We welcome your GOOD ROADS Magazine. Let the good work begin and let it go on. Every wheelman is a believer in Good Roads and we are sure of his alliance and help.

## ASBURY PARK GOOD ROADS CONVENTION.

BY MISS BERTIE KNIGHT.



BEATRICE E. KNIGHT.  
11 Years Young.



Y papa being appointed by the Government as Stenographer at the Convention for Good Roads at Asbury Park, took mamma and I with him.

We started July 3d. Papa, Uncle Charley and my cousin Cecil rode down on their wheels, and mamma and I went on the 4:35 express train from Broad street and reached Asbury 6:30, as our train was delayed half an hour by an accident; the train ran over an Italian woman who was just returning from her day's work of picking berries. She was not on the track that the train was on, but stood on the one next to it waiting for the train to pass, but just as the train got to her it switched off on the very track she was on and instantly killed her.

We spent a very pleasant Fourth, and on the evening of the Fifth we went with papa to the Convention, at Westminster Church, but it looked to me more like a theatre than a church. We did not stay very long as we were tired, but we stayed long enough to hear the Governor of Vermont make the opening address, in which he spoke about what they were doing to make good roads. Then a gentlemen from Kentucky began to tell about the roads down there, but I did not understand it and got so sleepy that mamma and I went to the hotel.

On Friday afternoon they closed the Convention resolving to get the people all over the United States to make good roads.

After they had closed the Convention papa and his friend Mr. Elliott came to the hotel and took mamma and I to see them make a road. The stone crusher in which the stones are crushed is worked by something which looks a little like a steam engine, the stones are put into something like a nut cracker, only a great deal larger, and are crushed into small pieces which fall into what looks like little carts going around like the chain on a bicycle, and empty the stones into a sifter, and they drop from there into a dump wagon which scatters them along the road, and the roller then rolls them down. When we saw the roller Mr. Elliott told me to put my foot on the ground and let it roll over my foot. I told him if he would put his foot under first I would mine afterwards, but he didn't, so I didn't have to.

After we had seen all we wanted of the road making we went in an electric launch, and we went under four low bridges; when we went under them we had to put our heads way down and have the awning pulled down over us.

On Saturday, July 6th, there was a baby parade and Mr. Elliott being with us we got seats on the Editorial Stand and had a fine view of it.

The roads at Asbury Park are very good; I had my safety with me and rode quite a good deal.

We returned home on the 9:05 train in the evening, and as we were going to the depot we saw the Boat Carnival which was very pretty.

#### TAX LAND VALUE ONLY.

*Editor of Good Roads:*

I KNOW of a place on Long Island, where a new highway was opened through woodland, with the result that the wild land adjoining it has more than doubled in value. Land which previously could be bought for ten dollars an acre is now worth twenty-five dollars, and yet it will not be assessed a penny more until it is improved. The man that clears and builds will be punished by a heavy tax and the assessor can see him with both eyes—but the double value of the wild land is wholly invisible to him. So the way of the improver is made doubly hard—first by the increased purchase price, then by the heavy tax—while the same discrimination helps the useless speculator to hold his land idle at a profit. The expense of improving roads should be taken from the place where the benefit goes, namely, the *land value*. It always increases the price of land, but nothing else. Crops are not higher in price, and wages are not higher, but the land value is increased. It is wrong that the speculator should pocket what the farmer earns. Tax land value only.

J. H. WELLS, *Brooklyn, N. Y.*

## HOW A WOMAN BUILT A WAGON ROAD.

BY EDWARD W. PERRY.

(Continued from July Number.)

**D**ON'T imagine that we heard no adverse criticism. People who lived beyond the direct influence of our improvements sneered, and predicted failure, and called us visionary; and that drew out retort, argument and emphasis at times, from those who felt compelled to defend themselves from imputation, that they had made fools of themselves by giving up good money for worthless stock; and so our new stockholders became ardent missionaries in the cause.

The village trustees made no great difficulty about letting us have the privilege of macadamizing the Avenue, at our own cost; but it is a fact that some tried to fight even that proposition.

With the money we got from sales of stock we improved Decatur avenue, as far as we had lots beside it. Then the Company stopped work. There was a difficulty, you see, about deciding which of several streets we should follow to reach the railroad station and the court house. That question was unsettled for some time, although there were folk enough who undertook to decide it for us. The liveliness of their interest grew into a discussion that was pretty hot.

Before the matter was settled, several men who did business on the streets which might be used, discovered that they would like to become owners of a few shares of stock of the Good Roads Company; and they also learned that none of that stock was for sale in small lots. The Company had possession of all small lots which were not fully paid for, and they could not be sold. But it had a large block or two which might be sold, if enough were bid for it.

"How much do you want for the stock?" they asked.

The figure named was enough to pay for the whole cost of putting a good telford from Decatur avenue to the station.

Then they *were* mad. We were trampling on the rights of the people; we were grasping monopolists, greedy capitalists, who were cunningly getting control of the best streets in town; the people should at once wrest from us the streets we had stolen; they should not only take from us the control of those streets, but should also compel us to give up the miles of main thoroughfare we had gobbled; the village should control and improve its own streets, and the county should do the same



with the country roads. Before election the village was in a ferment over the question.

Meantime we had macadamized streets, and built half-a-dozen pretty cottages on Section Twelve, and people were living where a few months before there were only an old orchard and a muddy cornfield. Some of our village shareholders had ventured to buy an acre each, and to build neat homes on the opposite forty, beside our road. They had no stone streets on their property, but would get to them in time.

One of those men rode to and from his business on a bicycle, and that led others into getting wheels. They got more fun out of the new road than we older folk had got in all the years we had used them. At last some of the more daring of the girls ventured to ride, and were gossipped about pretty sharply. That stirred up other girls, and before fall half-a-dozen had got into the habit of making up parties which rode out to one place or another on our road. Of course every one of them was an ardent advocate of good roads; but their elders, who had to pay for the wheels, didn't see the beauties of the improvement.

When the mud of winter came, the townships wanted to find out what we would ask for the road that lay along the top of my gravel ridge. They couldn't condemn it, you see, because the old road lay there, where it had been for years in use, and and there was no doubt that it could be macadamized and so made a good road, if the townships saw fit to do the work. But our Company couldn't see its way to selling its road. People were quite welcome to use it, however, on condition that all who owned land and hauled produce from beyond the end of the road, should pay for a share or more of our stock, each year. Transient passengers were more than welcome to use it freely.

Well, that raised a howl from all the farmers and small merchants living beyond our road. The Good Roads Company had put up a mean job to rob them. Everybody who wanted to go to town with a load must bleed for the benefit of an infernal monopoly. We were collecting tolls illegally, while pretending to sell shares. The making of a part of the stone road through private property was only a scheme to keep people off of good roads that should belong to the people — did belong to them if they only had their rights. They even consulted lawyers to see if they couldn't compel us to throw open our gates, and allow them to go over our property, and were laughed at. And every time one of the kickers rode over the only good road he or she had ever seen, he or she had as good an object lesson as we could give.

People came dragging wearily through miles of mud canals, that winter and spring, to strike our macadam. Most of them would stop to say a good word to us, and assure us that they

would vote for road improvement. They were usually invited to come in and warm themselves, and if there were women along, they had some refreshment, if no more than a cup of tea or coffee. I needn't tell you that my wife had more influence over them than all the rest of us together — she has the happiest faculty for catching an opponent, and when she has caught him he is the bound slave of her cause before he knows it. It's her tact.

A week or two before election we flooded the county with copies of the county paper that was with us. It was well filled with arguments, statistics and other matter favoring road improvement. The thing had become a question of local politics, as it will in time become a factor in our national politics.

On election day we had speakers on the court house steps, addressing the people in favor of our scheme for having the county undertake the work of general improvement of the highways. My wife and Kate sat in our light wagon in the edge of the crowd, watching affairs, when the speaking had been running all our way for half an hour. Then Molly sent a boy for me.

"There is old Mr. Swain," said she, "wants to say something. Don't you think that it would be well to let him make a speech?"

"Which means that you think that it would be a good plan. But I don't know that I agree with you."

"I think that it would. He is so excited, and so eager to attack the road improvement, that he will be almost sure to say things so extreme that they will turn people our way."

Well, you know, that we think a great deal of Molly's opinions. So I suggested the idea to the speaker.

"But I've said all I wish to say now," he declared, without an instant of hesitation. "I propose to give the other side a hearing, that is, if there is anyone here who thinks that there's anything worth saying on the other side. Here's Mr. Swain; perhaps he will favor us?"

"Yes, Swain, Swain!" the crowd shouted. "Let's hear from a man who's on the other side."

Mr. Swain had been for many years superintendent of Sunday schools, bible-classes and other associations of the kind, so had no hesitancy.

"I'm dead agin this hull scheme," he cried, after talking a few minutes and becoming well warmed to the subject. "Yes, I call it a *scheme*. It's an unrighteous robbery of the taxpayers. It is an imposition, an' plundering of the poor tiller of the soil. Ef ye vote them bonds ye'll bring ruin on every farmer in the county. They'd better jes' give their lan' away at onct.

"And what is this hull thing but a scheme — that's what I call it, a scheme — to put money into the pockets of the rich, at

the expense of hard workin' folks, who live by the sweat of their brow as they was commanded by Scriptor. They pretend to be philanthropists, and get a lot of women who'd better be 'tendin' to their children, to help rope in other folk. And they work up a big hurrah 'mong a lot of boys that goes straddlin' around the country, doubled up on spider-web wheels, like a lot of monkeys doubled over a bellyache, when they ought t' be sot to work hoein' corn, like I was when I was a boy. 'F you fathers don't look out you'll see your girls flyin' about the roads on them indecent things, an' meddlin' with politics an' business that belongs to men. They'd ought to tend to things at home, and not keep a lot of gals to do the work, while they gad around."

I looked at my wife, to see how she enjoyed this flow of eloquence that she had been the cause of loosing. She looked indignant and determined.

"Yes, fellow citizens," continued our orator, "I tell ye that if you don't vote against this iniquity, ye might as well give away your homes, your farms that ye've worked so hard for. They won't be worth the taxes, 'f these here bonds is voted. For one I'd be willin' to sell for half what my farm's worth to-day."

"What'll you take for your quarter section, Swain?" demanded Tom Burns.

"Yes, what'll you sell yer farm for, 'f things is so mighty bad?" cried one of the hearers derisively.

"I'll take — I'd sell the hull quarter for — for —"

"Spit it out, man!"

"Show yer pluck, Swain! Don't let 'em bluff ye!"

"Yes, let's see how much ye think the bonds *will* hurt ye!"

"He's a humbug! He don't dare to speak up! He wants more than he did a year ago for his place: that shows what *he* is!" yelled the crowd.

"Yes, I dare to speak right out," shouted Swain desperately. "I'll sell the hull for fifty dollars an acre — a hundred an' sixty acres of good lan' only a mile from the town, for fifty dollars an acre. An' it was worth a hundred dollars before they begun this wicked scheme for saddlin' poor folks with debt they can't ever pay off. That proves what I think."

"That's what he calls giving away his land," cried some one. "That's being ruined by improvements!"

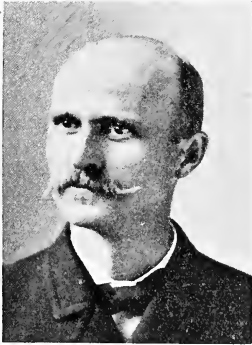
"It's all a bluff. He don't mean a word of it. He'd crawl into his shell fast enough, 'f anybody'd make him an offer of the price!"

"He doesn't mean a word of it," shouted another. "I know *him*. I've heard him preach charity in the Sunday-school, and we all know he'd snake the skin off a cast iron dog, 'f the owner wasn't lookin'."

(To be Continued.)

## THE TAR HEEL TRAIL.

BY BILL, NYE.



EDGAR W. NYE.

THE prize medal was cheerfully awarded to the writer last year, at Chicago, by a competent committee, for the most picturesque display of roads. I do not say this boastfully, but because it may encourage others to make a similar collection.

Western North Carolina is very mountainous and therefore a beautiful country, the soil in most instances being a cheerful red, similar to the shade adopted for second-hand cook stoves. These vermilion roads wrap themselves around the mountains of Buncombe County in graceful sweeps, or pour in the ridges and hog-backs of

Venetian red cascades over Catawba County.

Many of these roads liquify and run over the farms, or slip down into the fields during a shower, and remain there to be called for. I have two stray roads still on my estate that lodged there after a long wet spell in April.

The methods of building and repairing roads here are not adopted elsewhere, except along the shores of Lake Victoria Nyanza in South Africa. When the roads are too wet, large irregular stones, ranging from the size of Daniel Webster's head to that of the pee wee egg, are placed in this mud where they disappear, yet may be noticed plainly by riding over them.

Each year, in the country region, the adults are called together by the road master for the purpose of sampling each other's tobacco, and making mud pies along the highway. The bed of the road is sunken several feet below the level of the sea, and then plowed up and made mellow like an onion bed. Where it is desired to deflect a stream of rain across the bed on a side-hill, instead of putting in a culvert, the tar heel scientist constructs a soft, wet ridge diagonally across the road, which resembles the new-made grave of a pathmaster, but unfortunately it is not.

The loss on rolling stock here is easily 33 1-3 per cent., for I have kept an accurate account of it for three years, during



The Best Bridge in North Carolina, and is owned jointly, by Mr. Nye and the R. & D. R. R.

which time my wagons have been renewed. Landaus and Victorias are not used much here, but a hickory crotch is attached to an axle-tree of some hard and tenacious wood; a pair of cast off wheels from the wreck of a four-wheel wagon completes the trap, unless one should be high-spirited and want a box, in which case, a common quail trap is nailed on the axle. I enclose herewith a photograph of a machine suited to these roads. It was taken two years ago and shows the wagon looking west.

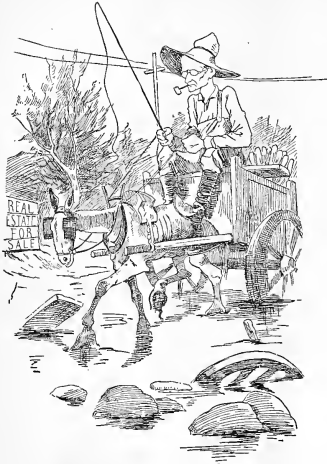
Naturally the resident here is content with things as he finds them—or as they find him. If a wood tick or a Buncombe County flea should attack a man who was born

here, the man heaves a sigh, scratches the place, and says to the insect without passion, "Well there! I hope now your satisfied."

It is the same with the roads. If a chuck hole gets formed in the road and squirts a yellow stream into his whiskers, he waits till his whiskers dry and then he is ready for another dose. He also raises whiskers of a color which matches the clay, and so it is not noticed.

The corduroy road was also originated in this country. After several generations of corduroy, it is found that most of the people here are entirely destitute of kidneys, these features having been shaken loose and lost after many years of riding on corduroy roads.

But the material for making roads here is good. In fact, that is about all that it is good for. The stone is not good for building, and the soil is not capable of even raising a dis-



Bill Nye usually hires a Hall, but this is one of the hauls he can't hire.



This shows Mr. Nye in the act of putting up samples of roads, in milk cans, to be sent with his road exhibit, to Chicago.

turbance. Last year I put \$103.85 into seeds, and \$150 into a gardener. I also hired the ground plowed, and hired a night watchman to put ear-muffs on the ears of my sweet corn when the July frost struck the mountains, and yet my flageolet string beans cost me \$1 per dozen, and the accursed garden prevented my son's graduation at the John Hopkins place.

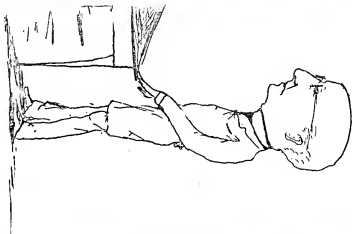
The roads are in a sad plight after a long rain, and look like a neglected candy pull. I feel very sadly this condition of affairs, for where the climate is so healthful that people under 115 years of age attract no attention, it seems a sin to take our pullets to market aboard a roan heifer. We have a glorious climate the year round, and the people come here from the four corners of the earth to get rid of their tubercles; but the roads are so rough that one has to hold in his broader principles with one hand and his appendicitis with the other for miles at a time. If Congress ——— but that's out of the question when Congress has been in perpetual session for a year, and has developed nothing but paresis. We must go to the polls this year, and the next, and the next, with Good Roads at the top of our ticket, and live or die, elect only those men who promise us upon their sacred honor that this platform

and this battle cry alone shall win.



Bill Nye's shooting box on the left. The fountain is just common water.

Mr. Nye tells us that he recently dreamed he was in Congress, (we would like to know what he could have had for supper,) and the above sketch, made by himself, shows how he thought he appeared while addressing the Senate on the subject of roads. As he was not in the Senate and only dreamed it, we put the sketch in in this shape to show how he must have felt when he woke up.



Birth-place of Bill Nye's coachman (who is practically a self-made man).

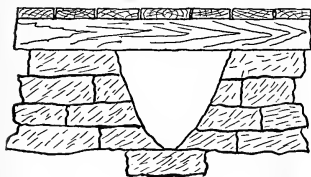


"Landaus and Victorias are not used much here."

I'm not much of a politician, but we had better stop sending bibles to other nations until we have something to show for roads aside from a long cow trail of dead horses, bleached bones and turkey buzzards outlining a loud smelling quagmire that a barbarian and a cannibal would scorn to use as a war path.

### AN IMPROVED CULVERT.

*Editor of Good Roads:*



SEND you a sketch of a culvert, in cross-section. The object of making a culvert in this shape is to confine the water to a narrow space, that it may rise in the basin that is usually found on the upper side of the road, thus causing depth, volume and force, to carry through the culvert any sediment that may have accumulated in it, and also to prevent the water from freezing in winter. In use it proves to be a success.

Respectfully yours,

W. O. NOYES, *Derby, N. H.*



## POPULAR ROAD-MAKING DOES NOT ALWAYS MAKE POPULAR ROADS.

BY J. D. ELLSWORTH.



J. D. ELLSWORTH.

POPULAR roads are apt to be good roads, but unfortunately popular road making is not so certain to be good road-making.

But even in roads themselves popularity cannot be relied upon unless it is enlightened and directed. From the earliest times there have been two historic roads, one straight and narrow and the other broad and destructive. There can be no question about the comparative excellence of these traveled ways, but even at the end of this 19th century it is hard to say which is the more popular. This only shows that popularity is some-

thing that cannot be absolutely trusted.

The most interesting road I ever traveled was the worst. It was in Colorado, from the railroad town of Granite to the mining town of Aspen. It was forty miles long and went over Independence Pass above timber line.

The road started innocently enough across a bit of plain, and up through the foot-hills by the beautiful twin lakes. There were rather deep ruts in the alluvial soil, but there seemed no reason why the stage driver should strap himself to his seat. The way lead up through a broken place in the mountains and began to be exciting. The grade was rather heavier than modern engineering would suggest, and eight feet seemed somewhat narrow when the left hand gutter was a roaring torrent 200 feet below.

The road for ten miles was composed of sand, gravel, mud, stones, and muck holes, that kept the stage swaying from side to side and made the four horses pant.

The bridges over the deep chasms were made of round poles, sometimes covered with trodden earth, and sometimes left perilously loose. There were sections of corduroy and other sections made of bushes through which the stage plunged like a ship at sea.



An Extra Good Sample of a Mountain Road.  
 Pictures of the Worst Ones cannot be  
 made as there is no Place for  
 the Photographer to Stand.

The mud increased until after fifteen miles were covered, the horses splashed through ponds of water, then snow and ice took the place of the mud, and a four-horse sleigh took the place of the rocking stage coach. The grade was terrific and along the sides of the road were the carcasses of horses, mules and donkeys that had fallen by the way. A zigzag track led up to the crest of the pass and looking up, one could see section above section of the road clogged with horses, mules and sledges, and hear a great cracking of whips and a constant reverberation of wild oaths.

An agent of the Society for the Prevention of Cruelty to Animals would never have survived that sight, and the western side of the pass was worse. There were the wrecks of the four-horse

sledges that had slipped off the road, and then rolled down the snowy mountain side until caught by a tree and smashed. There were dead animals every mile of the way, and a constant procession of live ones that wished they were dead. The destruction of vehicles was tremendous, and even pack animals that had no wheels to drag, laid down and died under their loads.

The cost of that road was enormous, not only in wagons and draught animals but in machinery and expensive merchandise that was broken and destroyed. I saw the wreck of a piano that had gone over the pass, and a load of show cases and mirrors that did not have a handful of glass in them.

Not only were the freight rates very high, but goods were sometimes two months on the road and subject to all kinds of damage. That road has now been deserted and two railroads take its place, but it shows graphically what an expensive road a poor road is.

Good roads don't grow, they are made. There are few spots on the surface of the earth where the shearing process of a moving wheel does not make the passage of other wheels more difficult.

On the great American Desert the roads are merely tracks in the sand, which are cut down deeper and deeper. Another traveled way is started parallel to the first; then others until sometimes there are a dozen tracks across the sandy plain, equally slow and discouraging, with the usual fringe of horse's bones. The eastern ends of these roads are over the fertile prairies of the Middle States. At rare times they are easily traveled, but there are long seasons when the mud is up to the hubs of the wheels.

The poorest roads I ever saw were in Illinois, where the fertile, black soil is of great depth. There is usually no material by the roadside for good road-making, and so the road-makers scrape the loam up in the centre in the vain hope that the water will drain out of it. When the mud is at its worst, wagons are abandoned in the middle of the road, and in small cities I have seen boats dragged through the street instead of trucks or express wagons.

After a January thaw the mud sometimes freezes as it is cut up. Then the roads are abandoned, except in cases of greatest necessity, which make the racking of wagons and the lameing of horses of little importance.

I have seen hundreds of loads of gravel spread upon Illinois roads only to sink into the mud and vanish forever. The richest farms in the country border these roads, but poorer farms on better roads would give more profit.

These roads are not popular, however, but they are the result of popular road-making. Popular road-making is rampant all over the country, in the level regions where there is mud and sand and in the hilly regions where there are ruts, stones, and steep grades.

Most road makers have one idea that is good as far as it goes. They believe in heaping the material of the road-bed in the centre and sloping off toward the gutters. There are cases where this is done successfully but not where the material is loam or worn out surfacing. In these latter cases the road is made muddier and dustier than it was before. The perfect road has not only a crowned surface but a crowned foundation.

One of the great reasons why popular roads are so rare and popular road-making is so futile, is the belief that road-making is a simple thing which anybody can do without knowledge or experience. The value of experts has only recently been appreciated. Road-making is becoming a science, and road engineers are learning to take the materials at hand and make roads that will withstand rain, frost and ordinary wear. Such roads will be missionaries to convert the people to scientific road-making.

Massachusetts has some of the most popular as well as some of the most unpopular roads in the country. The Jerusalem

road has long been famous, but it is only one of the splendid roads near Boston.

The other extreme is seen in the sand roads on the Cape where the ruts are twelve and fourteen inches deep, and in the rough, steep roads in the western part of the State.

There is no excuse for Massachusetts. It is one of the oldest and richest Commonwealths, and it has all the materials for making the best roads in the world. It is so thickly settled that the initial expense of good roads will be scarcely felt, while the saving in repairs and the return in other ways are increased in proportion to the population.

The State would have had good roads long ago but for the popularity of poor road-making, which like the popularity of foul air in some countries and the popularity of dirt in others, is one of those perverted fancies that cannot be explained.

**S**AMPLE COPIES OF GOOD ROADS FREE. We are always glad to send out copies of GOOD ROADS on request. If you have a friend (or a dozen friends) to whom you think this magazine might be of interest, please send us the names and we will do —— send the samples.

It often happens that these sample copies are received by people whose names are furnished us as above, and in a few instances we have been calmly informed that if we sent the Magazine in the hope that it would be paid for we might be disappointed.

To all who receive GOOD ROADS, we would say, that we keep no open accounts; all subscriptions in order to be entered on our books must be accompanied by the cash, (\$1.00 per year, League members, 50 cents.) Sample copies *are sent free*. Of course we would like to have you for a subscriber, but the acceptance of the Magazine, when sent, incurs no responsibility on your part.

## "A ROAD GOVERNOR."

LEVI KNIGHT FULLER OF VERMONT.

**O**UR Frontispiece in this issue shows the face of a man who, while occupying a high position, is known to all who have come in contact with him, as a practical, everyday, useful citizen.

Although a republican he is essentially democratic, in the broader sense of that word. He is about fifty-three years of age and has a very interesting history.

At the age of thirteen he left home to seek his fortune, with but a silver "quarter" in his pocket; coming to Brattleboro, Vt., he worked at the printer's trade, attended the village High school, and learned telegraphy, thus laying the foundation of his knowledge of electricity, for he is recorded in Warren's Astronomy as the discoverer of the effect of the Aurora Borealis upon telegraph wires.

He early developed an aptitude for mechanics; winning, when only sixteen, a premium at the Windham (Vt.) County Fair, for a steam-engine improvement exhibited there by himself, he also building his own engine.

Going to Boston to further perfect himself in his chosen line of study, he served a three years' apprenticeship there as a machinist, taking at the same time a scientific course of study at the evening schools of the Roxbury Institute; also being the night telegraph operator of the Merchants Exchange.

Returning to Brattleboro, in 1860, though but nineteen, he became the machinist and mechanical engineer of the Estey Organ Works, was made a member of the firm in 1866; later superintendent of manufacturing, and now for more than twenty years has been the Vice-President of the Estey Organ Company.

He organized in 1874 and, until inaugurated Governor, commanded the Fuller Light Battery, Vermont National Guard.

In educational matters, Governor Fuller has always taken a deep interest; he is President of the Board of Trustees of the Vermont Academy, at Saxtons River, Vt.

He is a self-made American citizen of the best type, an untiring worker, a genial, kind, considerate friend, as he is a public spirited and high-minded Christian gentleman.

In person, Governor Fuller is tall and commanding, of military style and figure, his moustache and goatee now growing white, his strongly marked intelligent face attracting attention anywhere as that of a man of strength, of character and note.

He married Abby, daughter of Deacon Jacob Estey, May 3, 1865. Mrs. Fuller is a lady possessing many of the strong and

famous qualities of her distinguished father, and is the centre of a wide circle of loving friends.

Governor Fuller has long been known as an active factor in the *Good Roads* movement. And when the Good Roads Conference was called to order at Asbury Park, last July, the "Governor" was nominated for Chairman by half of the delegates, and his nomination was seconded by the other half, so there was hardly any need of a vote.

At the close of the proceedings a Central Committee was elected to take in hand the matter of further conferences, and very naturally all hands wanted Governor Fuller to be Chairman of that Committee, and although he attempted to escape, "it was so ordered."

The two other members of the Committee are General Roy Stone of Washington, D. C., and Colonel E. H. Thayer, of Clinton, Iowa.



View of High street, Brattleboro, Vt., looking toward Main street and showing three stages of macadam road building.

The foreground shows the rolled foundation, and coarse, broken stone being dumped upon it. Governor Fuller and the Road Commissioner are shown standing upon the first layer of rough stone. Just beyond these gentlemen, you will notice the second or intermediate layer of crushed stone, and still farther along is the top dressing of fine rock.

Among the many good things in the line of roads which are being carried out in Vermont, we think one of the best is the careful manner in which these three layers of stone are placed and rolled.

The difference between a new macadam road and an old one, is first shown in the appearance of large pieces of stone coming to the surface. This unpleasant condition of things may be prevented, or at least materially postponed, by a proper grading of the different courses, and what is just as important, the thorough rolling of each layer before the next is applied.



View on High Street, Brattleboro, Vt., looking from Main Street, showing teams hauling crushed stone, and road roller at work. Governor Fuller is seen near the centre of the picture in consultation with Road Commissioner Eames.

We envy not the blind man's lot,  
His days are dark as night ;  
And yet we find, that to his mind,  
All things are "out of sight."



## AN OLD TIME INSTITUTION.

JULIA H. EMERY.

**A**MONG the unique features of Montana, sufficiently interesting to attract the attention of any "pilgrim" or "tenderfoot," visiting the State, is an Institution of the olden days, that has played its part as an important factor in the civilization and upbuilding of the western world, but which is being rapidly driven into "innocuous desuetude," by the unerring stroke of the far reaching lash, wielded by the hand of progress.

White Sulphur Springs, Montana, lays claim to this relic of bygone days. The tourist and health seeker, who come to renew their youth by drinking of, and bathing in the clear mineral waters of the thirteen hot springs — from which the beautiful mountain girt town derives its name — not infrequently have their attention directed to this curiosity, which is no less than a bull trail team, composed of eighteen head of as fine fat animals as one often has opportunity to see; even in this country noted for its fine-bred, well-conditioned stock.

This bull trail team, is the property of Messrs. Reed & Saxton. It was formerly used in transporting bullion (how appropriate), from the Cumberland mine to Livingston, Montana; at the present time it is engaged in hauling stone from a quarry a



short distance from the town; forty thousand pounds of stone being an average load. The driver seems to be an expert in the use of the whip; whose sharp crack awakens the mountain echoes, like the report of a rifle. A sound apparently understood by the docile animals, which patiently await their turn to be unyoked after the day's labor, after which they quietly disperse, finding food for themselves upon the range without farther trouble or expense to their owners.

The hardy adventurer of pioneer days, lured westward by oft times delusive hopes, that each territory would prove an Eldorado, where croesus like, they need but touch an object to find it at once transformed to gold, soon proved conclusively that in crossing the plains the cud-chewing ox was far better adapted for hauling freight than either the horse or the mule; not only that oxen could endure more and harder labor, while requiring less, and not so good a quality of food, but were also less liable to be stolen by the Indians, who coveted every horse that came under their eyes, often killing the owner of a pair of horses or mules for the team, when a pedestrian or an ox driver would have been allowed to pursue his way unmolested.

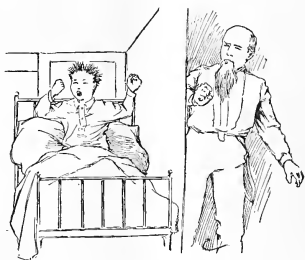
The old manner of freighting, as late as 1864, was to use one yoke of oxen to a wagon, with a single driver to manage three separate teams, but in 1865, when the Sutherlin Brothers, now residents of White Sulphur Springs, and editors of the Rocky Mountain Husbandman, were freighting across the plains, some of their oxen became disabled or died, and they were driven by necessity, the mother of invention, to originate a trail team. This they did by coupling several wagons together; to the forward wagon they attached the cattle. The scheme worked so well when perfected that it was almost universally adopted by freighters, and thus was introduced what has ever since been known as the "trail team."

In looking over the wide sunlit park land of Montana, dotted by comfortable home-like ranches, where bunches of cattle, bands of horses and herds of sheep, wander unmolested over the long undulating flower-strewn hills, feeding upon the luxuriant native grasses, or drinking from the cold, snow-fed mountain streams that wind in sinuous curves through the meadows, the peaceful stillness only broken by the shrill whistle of the locomotive as it emerges from the deep canyons, or ascends like a breathing sentient creature to lofty, cloud-crowned heights; it is hard to even imagine that there ever could have been a time in the near past when hostile Indians lurked behind each rock and beetling crag, waiting in cowardly ambuscade to fall upon the unwary traveler.

There was a time when eight dollars was paid for hauling every hundred pounds of freight, and miners were glad to purchase poor bread baked in primitive ovens at fifty cents per

loaf, or procure butter and cheese from Buffalo Bill — who with the assistance of his wife ran a dairy — at from one dollar fifty to one dollar seventy-five cents per pound, and delighted to obtain it at almost any price.

A time, in fact, so unlike the present picture of Montana, that there is little left to tell the story of trial, bloodshed, man's heroic bravery, and woman's fortitude; but in the soft eyes of the old bull trail team, as through a clear cut lens, I read the story of the past, painted in blood and toned by woman's tears, and recognize that almost in another generation, the stirring times that mark the birth and infancy of Montana will be among the things forgotten, buried deep with the old-time institution, the last of the bull trail teams whose very existence will be blotted out from memory by the effacing hands of electricity and steam.



THE RISING SON.  
A personal reminiscence.

## THE ROADSIDE WILDERNESS.

C. M. PLUMB OF OAKLAND, CAL.



C. M. PLUMB.

THE most unattractive, and to a reflective mind, the most depressing, rural spectacle is the ugly weed-grown space between the wagon tracks and the tillable land on either side of country roadways. The space usually includes a double line of dilapidated and decaying rail fence, along the length and within the corners of which, flourishes a rank growth of thistles and every pestilent weed known to the locality. Here shiftlessness runs riot. Here lurks an enemy whose presence is costly to the farmer at best, and is a constant

menace of dangers, to an unknown extent.

Wayside beauties along country roads are exceptional, when they ought to be universal. And they are so dependent upon the luxuriance of useless and noxious verdure, that—if the Irishism is permissible—the greater the beauty, the more flagrant the blemish.

The traveler is compelled to discount the charms of the landscape, and the fertility and verdure on either side, by a perpetual foreground of waste and desolation, or the rankness of a growth which is even more unsatisfactory, rude and displeasing.

The term wilderness is not misapplied, for here, indeed, though narrow, and winding past millions of home entrances, is a "region uncultivated and uninhabited by human beings." If it possess any other state or quality than that of "being wild and disorderly," the exception only serves to illustrate the rule.

Is not the almost universally neglected condition of these roadside spaces a sufficient reason why the country fails to be ever and always inviting, and proves so often unartistic and repellent? May not some means exist whereby this universal blemish can be removed from perpetual sight, and instead the country highway be made "a thing of beauty," invariably a source of satisfaction and delight?



"LOOK ON THIS PICTURE

■ We have little accurate data from which to determine the length of our country thoroughfares. In those States where regular township divisions prevail, the estimate is from forty-two to forty-eight miles of road for each township of thirty-six square miles. It will be quite safe to adopt the basis of one mile of roadway to each square mile of area. If then we eliminate one-fourth of this extent, for exceptionally wide avenues and approaches to towns, the estimate gives for the 2,800,000 square miles of the United States a total length of country highways of *two million miles!* Only think of it!

The county of Contra Costa, Cal., which has inaugurated a plan for naming all country roads, is now measuring the length of its 120 different roadways. The distance will exceed 600 miles for its 800 square miles of area, which corresponds with the above estimate, and yet is doubtless below the general average.

Though the accurate length of country roads is usually unmeasured, and their depths are often unsounded, the widths are well known, and are generally sixty or sixty-six feet. Take the lesser figure as the rule, and our national roadways occupy a space of sixty feet wide by two million miles in length, or an area of more than fourteen million acres, relinquished by the farmer for passage and transportation!

Is there any sufficient reason why sixty feet should be withheld from tillage for purposes which really occupy only eighteen



THEN ON THAT.—*Shakespeare.*

or twenty feet? Whatever space is not actually required for the uses of traffic, or purposes of necessary side drainage, ought to be available for cultivation, for neglected land is not only useless but becomes a source of danger in fostering the growth of noxious weeds, and in dry sections, of greater peril from fire. Is not thirty feet ample width for the uses of ordinary roadways? If so, the country suffers the loss of two strips of land fifteen feet in width, and two million miles long, or over seven million acres, or eleven thousand squares miles of accessible land — enough for a new State between Vermont and Maryland in size.

I have purposely avoided the consideration of the cost of maintaining four million miles of roadside fencing, which the extension of the no-fence law, and the awakening sense of the public are rendering unnecessary. Why, because each farmer has a cow to pasture he should, instead of fencing in his grazing animals, deem it necessary to fence out from all his land, the quiet traveler by highway, is one of those problems that long usage hardly suffices to explain.

One need not be reminded of the exceeding attractiveness of driveways through beautiful wooded parks or blooming orchards. Nor of the pleasure found in passing along the better class of farm roads, past well-tilled gardens and fields. Could we but dispense with the useless, costly and inartistic

road fences, and devote to cultivation the waste places of this lengthy wilderness, how agreeable to the higher taste, the esthetic sense, would be the change. The ordinary traveler, escaping the present barricade of desolation and disorder, is invited within the charmed precincts of cultivation, luxuriance and thrift. Country farmers would begin to vie with each other in efforts to make yet more pleasing the borders of thoroughfares passing their lands. Here would be found their finest shade and most luxuriant fruit trees, their richest vines and largest vegetables.

I have chosen a random shot at the unkempt roadside of to-day, and another, like a vast multitude which might be found, to illustrate faintly the limitless possibilities this new plan opens up to the nation of Grangers.

The considerations which urge the improvement are (1) economy, (2) safety and (3) beauty. How possible it is to redeem these waste places, to abate this nuisance and remove this peril. The cheerless wilderness which now greets the eye, may be transformed into the most picturesque, inviting and hopeful of all rural charms.

**E**LECTROTYPES OF GOOD ROADS CUTS. We frequently receive letters from other publishers, asking to be allowed the use of cuts which have appeared in GOOD ROADS.

We are especially glad to accommodate all who ask such favors, and the only way we can do it, is to not allow the original to go out of our possession, as we often have a number of calls for the same cut at about the same time.

We furnish copper-faced and wood-backed electros of any cut used by this Magazine as follows: 20 cents for one square inch, and four cents for each additional square inch. Half tones same price as line drawings. Measurements must not call for less than one-half inch. For instance; if a cut measures more than three inches either way we would call it three and a half inches, if over three and a half it would be measured as four inches.

Cash must come with all orders. We keep only a cash book.

## WIDE TIRE INFORMATION WANTED.

GOOD ROADS magazine is very much interested in this important question of tires.

There is so much to be gained, and so little to be lost by the adoption of broader tires that we are much pleased to note the increasing interest taken by progressive farmers.

On hard roads the wide tire is not so obviously important, yet we believe that there is no road or pavement so well made but that its life would be prolonged by improved rolling stock.

Soft roads, *i. e.*, those made on sand or loam, are never, except when frozen, able to stand narrow tires. If the farmers and others engaged in teaming were asked to increase the width of wheel tires simply to save the roads, it would be greatly to the teamster's interest to do it, though the reason might not always be apparent to the man who wants to see immediate results.

The fact is, however, that the wide tire, unlike a majority of investments, begins paying dividends the first day. The farmer who could with difficulty get out of his potato patch yesterday with twenty bushels, can, today, with the new tires, haul at least forty bushels, and if the road to town is like the average country road, the same ratio will hold good on that trip, so that, important as is the benefit to the road, the benefit to the farmer who benefits the roads, is even greater.

GOOD ROADS is having frequent inquiries about wide tires and wide tire laws, some of which we can answer and many of which we are obliged to defer.

We have subscribers in every State and Territory.

It is not probable that any thing is being done in the United States in the line of broader tires that is not known to some reader of this magazine.

Please let *us* know what *you* know, don't think that we already do know it; even if we do, no harm will be done.

If you know any thing interesting on the subject please tell it to 12 Pearl Street, Boston, and receive our hearty thanks.

It is better to sacrifice one's love of sarcasm than to indulge it at the expense of a friend.—*Unclaimed.*

## SEPTEMBER MENU.

GOV. BROWN of Maryland, believes that roads should be run over the best route, all things considered, and that it is better to pay damages to an occasional land owner, than to make too long or too steep a road, and further, he says a great deal of money is being wasted in Maryland by unintelligent work. In which Maryland is not unlike all the other States.

\* \* \* \*

MR. SPAULDING'S initials are N. G., but Mr. Spaulding isn't. Not by a long shot. He knows a few things about roads. He believes in drainage, and local work done by local workman, but under proper and competent supervision.

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L. S. BAYLEY a prominent C. E. of Chicago doesn't think that either Macadam or Telford reached the acme of perfection in their respective systems of road building, and takes occasion to tell why he thinks so.

\* \* \* \*

SIMON SCHRIVER of Johnstown, N. Y., has a plan that looks too good to be true. He believes that it is possible to have plenty of money, and good roads at the same time, and without really costing anybody a cent. Read what he says and tell us what you think.

\* \* \* \*

GOV. SMITH of New Hampshire believes in the wheelmen and thinks they have done and are doing good work for roads, (long live Gov. Smith). He further says that the natural beauties of a State are all right as far as they go — but *good roads* are needed to make the job complete.

\* \* \* \*

TO some worthy young man who may, a dozen years hence, be looking for a pretty slick wife, we recommend little Miss Knight, of Newark. Read her story of Asbury Park.

\* \* \* \*

BILL NYE is a very observing man and of course, as he has traveled a great deal, he has observed roads. He tells us about the roads near his farm in North Carolina. If we had not the most child-like confidence in William's truthfulness, it would be easy to believe that he has overdrawn it.



BURTON H. ALLBEE strikes a responsive chord when he says that Politics and Road management should be divorced. The dictionary gives two definitions of politics: 1st, "the science of government," 2nd, "the management of a political party." We fear that the first definition is fast becoming obsolete.

\* \* \* \*

J. D. ELLSWORTH has traveled much in the wild mountainous regions of the west. Read what he says about mountain trails.

\* \* \* \*

C. M. PLUMB has set forth the advantages of a neat and attractive roadside as well as a good road. He suggests that owners of cattle should fence them in, instead of asking everybody else to fence them out.

\* \* \* \*

JULIA H. EMERY tells interestingly of the old time "bull train" which, like the buffalo, was once a common thing in the west.

TOO MANY HAVE TO CRY, WHO DON'T  
GET PAID FOR IT.

It was a haughty lawyer  
Of Elizabeth, N. J.,  
Who sought upon a witness  
To vent his spleen one day.

The witness quickly answered  
With caustic wit and chaff,  
And soon against the lawyer  
Had raised a hearty laugh.

Loud laughed the judge and jury,  
The others louder yet,  
Except the ancient crier,  
Who kept his features set.

Until to him the lawyer  
Called in his sneering way:  
"How is it, Mr. Perkins,  
You do not laugh to-day?"

Then quoth the solemn Perkins  
(And never winked an eye):  
"I am not paid to laugh, sir;  
I'm only paid to cry!"

—Gustav Kobbe, in *Harper's Bazaar*.

## POLITICS VS. GOOD ROADS.

BY BURTON H. ALBEE,

*Editor Springfield (Mass.) Homestead.*



BURTON H. ALBEE.

THE divorce of politics from the good roads movement must come soon, or a large proportion of the work already done will be useless, and much of that to be done in the future will be a reward for heelers and followers.

Spoils and spoilsmen are not wanted in, or with, this movement. Good roads and street improvements are beyond politics. Both are something in which men of all parties or no party can interest themselves without thought of partisanship. The politician who demands the

positions occasioned by road or street improvement is a traitor to the best interests of his county or city and should be promptly turned down by his party associates.

No man or body of men ever undertook the improvement of streets or roads anywhere in the country, without meeting the opposition of ward or county politicians. Skilled labor is seldom found in the ranks of the political helpers who constitute the most willing assistants of the boss. They are generally a lazy, shiftless crew who are looking for soft places accompanied by large pay. They have found it in the street departments of the cities, because until within a few years no skilled labor was expected or required.

It is time now to write "hands off" on the department's outer gate and insist that the order be obeyed. There is no reason why a politician who has been active in manipulating party caucuses or in securing the election of certain gentlemen to the council or board of aldermen, should be rewarded by the superintendency of streets, with full authority to expend the people's money in the one department of any city government which most vitally touches all the people. Yes, there is a reason; one, too, which has been most influential in the past; reward for party service. Men unskilled in road building, except, perhaps, in the proper placing of a bar, have been appointed to these positions to spend millions of dollars of the

people's money ; and what is the result ? A road system which is a disgrace to the progress and civilization of America ; a road system which cuts the farmers' profits in two and compels every person who ever goes anywhere to pay tribute to the political boss. It is worth something that a few are beginning to see the effect. It will be worth infinitely more when enough see it to compel the employment of skilled labor and proper construction.

Politics in city governments lead unskilled and bungling boards of supervisors to assume the authority, and arrogantly direct a skilled superintendent what to do, even when that superintendent has spent years in learning the art of constructing proper streets. Politics will cause these same supervisors to improve some side street which ends against a bank, and upon which scarcely a dozen teams pass a day, while main arteries, connecting important parts of the city are left beds of mud, or banks of sand. Politics will cause such boards of supervisors to allow one man on a street to violate city ordinances and even State laws in setting a different variety of curbing, and make a walk a different width, and then these same politics will lead these supervisors to say that they will investigate, and if anything is wrong it shall be corrected. As if a whole street of respectable residents would petition the supervisors for redress if there wasn't anything wrong.

One can tell those cities in which politics rule the street department. There are occasional stretches of good streets, but they are quite as likely to be in one part of the city as another. There has never been any comprehensive scheme of improvements adopted. A street has been paved here, and part of one there. One man uses brown stone for curbing when the council ordered granite, and a State law permits no deviation from the orders of the board of works. Gravel is used because some ward heeler has it to sell, where macadam is the only proper material. Crushed stone is brought in by a certain railroad company at a higher price than another would ask for the same service, because, perforce, the first railroad company assisted in the election of supervisors, superintendent or mayor.

Nothing is ever done as it should be ; nothing ever will be done as it should be until politics and street improvement go in different directions and a plain, straightforward business policy of street improvement and construction prevails. To accomplish this, the matter must be shown to the people in its true light, which has not yet been done. GOOD ROADS is the Magazine to take up this crusade and compel attention by its insistence upon these facts.

# \* \* \* SEPTEMBER \* \* \*

Thirty days hath September,  
 April, June and November,  
 February has twenty-eight alone,  
 All the rest have thirty-one;  
 Excepting leap year,—that's the time  
 When February's days are twenty-nine.  
 —The Return from Parnassus. (London, 1606.).

Thirty dayes hath November,  
 Aprill, June and September,  
 February hath xxviii alone,  
 And all the rest have xxxi.  
 —Richard Grafton: Chronicles of England.

Thirty days hath September,  
 April, June and November;  
 All the rest have thirty-one,  
 Excepting February alone,  
 Which hath but twenty-eight, in fine,  
 Till leap year gives it twenty-nine.  
 —Common in the New England States.

Fourth, eleventh, ninth and sixth,  
 Thirty days to each affix;  
 Every other thirty-one  
 Except the second month alone.  
 —Common in Chester Co., Penn.,  
 [among the Friends.]

Day of Year.	Day of Month.	Day of Week.	Length of Day. H. M.	NINTH ▲ September, 1894 ▲ MONTH
244	1	Sa.	13 09	1585, Roanoke Island settled by the British.
245	2	S.	13 07	The original settlers starved to death.
246	3	M.	13 04	They also had absolute protection.
247	4	Tu.	13 01	but there may have been no connection
248	5	W.	12 58	Between these two facts.
249	6	Th.	12 55	1615, tobacco first raised in United States.
250	7	Fr.	12 52	Cah! It's nasty stuff; don't eat it.
251	8	Sa.	12 49	1687, first printing press started
252	9	S.	12 46	in Philadelphia, by Wm. Bradford.
253	10	M.	12 44	God bless William Bradford.
254	11	Tu.	12 41	Frank Egan is feeding the press.
255	12	W.	12 38	Now pluck green corn.
256	13	Th.	12 35	It takes a plucky man to chew it.
257	14	Fr.	12 33	1750, first theatrical performance in Boston.
258	15	Sa.	12 30	Now Boston has eighteen theatres.
259	16	S.	12 27	But only one GOOD ROADS Magazine.
260	17	M.	12 24	Are you a subscriber?
261	18	Tu.	12 22	1636, Harvard College was founded.
262	19	W.	12 19	Yale didn't start until 1701.
263	20	Th.	12 16	But it seems to "get there just the same."
264	21	Fr.	12 13	Especially in foot-ball.
265	22	Sa.	12 10	Farmers should see that the boarders begin
266	23	S.	12 07	Even if the coffee doesn't. [to settle.
267	24	M.	12 04	Don't let hogs run in the road.
268	25	Tu.	12 01	(i. e.) not four-legged hogs. [Balboa.
269	26	W.	12 58	1513, Pacific Ocean discovered by V. N. de
270	27	Th.	11 56	Who <i>couldn't</i> discover a big thing like that.
271	28	Fr.	11 53	Now get ready for October GOOD ROADS.
272	29	Sa.	11 50	\$1.00 per year.
273	30	S.	11 48	12 Pearl street.

# LEAGUE OF AMERICAN WHEELMEN.

..... Organized 1880. . . . .

A voluntary organization having for its object the systematic improvement of the public roads, and the protection of wheelmen against unjust legislation. The present officers of the League are as follows :

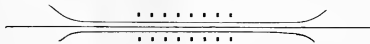
*President.*—CHAS. H. LUSCOMB, 280 Broadway, New York.

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**Devoted to Highway Improvement.**

STERLING ELLIOTT, *Managing Editor.*

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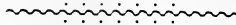
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\$1.00 per year.

Please send Good Roads for \_\_\_\_\_ year \_\_\_\_\_  
To \_\_\_\_\_  
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Town \_\_\_\_\_  
Amt. enclosed \_\_\_\_\_ County \_\_\_\_\_  
Beginning with \_\_\_\_\_ State \_\_\_\_\_

# Opening of a Chestnut Burr.



## A PLEA FOR BETTER ROADS.

BY ROBERT BRUCE.

A country parson started on his way  
To meet his flock upon the Sabbath Day;  
O'er roads of endless mud and clay and sand  
He drove with quivering lip and faltering hand;  
Though pouds and streams almost obscured the track,  
The parson couldn't think of turning back.  
He reached a hole whose sides he could not see,  
And wondered what its hidden depth could be;  
He saw the fearful danger lurking there,  
Then stopped a moment and spoke out this prayer:

"I venture now where beasts and men  
Have gone and ne'er were seen again;  
Where wagons loaded to their fill  
With fruit of orchard, field and hill;  
And going to my native town  
Have sunk with all their cargoes down;  
And now beneath the earth they lie  
Far from the gaze of human eye,  
There in that endless hole to be  
Through time and through eternity.

Now I, in duty's name alone,  
Am risking all I am and own;  
I hope my little church to reach,  
And in Thy name to sing and preach;  
But if perchance, I here should fall  
And never reach the church at all,  
O Lord, my hope, my solid rock,  
Preserve, I pray, my little flock;  
And let these weary, aged feet  
Tread, through the ages, Heaven's street!

## IT WAS STRANGE.

Hubby, (walking the floor at two a. m.)  
"I'd just like to know why this baby persists in staying awake every night?"

Wifey—"Really, I can't imagine. I never have any trouble keeping him asleep in the daytime.—*Answers.*

## LOVE VS. LOGIC.

The stately steamer plowed its way through the blue waves of Lake Michigan.

"Oh, Horace!" moaned the young bride, who a moment before had paced the deck with smiling face and love-lit eye, the happiest of the happy, "I feel so queer! Let me lean on your shoulder,"

"Oh, dearest, don't do that!" exclaimed Horace, hastily. "Lean over the side of the steamer."—*Chicago Tribune.*

A turkey stood in a cranberry swamp,  
And sang till his throat was sore;  
For all day long he sang this song:  
"We shall meet on that beautiful shore."  
—*Pen and Scissors.*

## WHO'S CONVINCED.

It takes us half our lives to learn that mankind are fools, and the other half to be convinced that we are one of them.—*Ex*

HE is apt to be with the one he  
*thinks* is "out of sight."

How doth the naughty, naughty man  
Improve each moonlight night,  
By making love to one sweet girl  
While the other is out of sight.—*Ex.*

THE farther probably appreciated this when he paid  
his bill.

A little girl visiting Niagara with her father, and seeing the foam at the foot of the falls, exclaimed: "Pa, how much soap it must take to make such suds!"—*Ex.*



ONE OF (W. W.) WATTS' HIMS.









GEN. ROY STONE.

Chief of the Government Department of Road Inquiry,  
Washington, D. C.

# GOOD ROADS.

Vol. 6.

October, 1894.

No. 4.

## THE LEAGUE OF AMERICAN WHEELMEN AS A POLITICAL PARTY.

**I**N the old days, when Noah Webster made his first dictionary, "Politics" probably *was* the "science of government," at least out of respect for the memory of Mr. Webster we will assume that he correctly reported the accepted definition of his time.

The change which time has wrought, however, is more than perceptible. GOOD ROADS (which, by the way, is still furnished to yearly subscribers at the ruinously low price of \$1.00), has come to the conclusion that "Politics," as understood to-day, means

The science of getting there.

"The science of government" being considered subse-  
quently, in some cases, and not at all in others.

If a few drops of ink are placed in a spring of crystal water the whole is tinged and made to look unfit to drink. So a few unworthy men, in our State and national politics, cast a sickly hue over the ninety and nine who are, perhaps, magnificent specimens of unselfish manhood.

A prominent State Governor recently said to GOOD ROADS during a conversation on this subject: "However high-minded and worthy a man may be, and however anxious to serve his country for his country's good, he cannot do so unless he can first obtain the opportunity, through an election to the proper office, and it is in elections where the questionable practices are most liable to occur."

The office seldom seeks the man, only because the man doesn't hold still long enough to be sought.

One of the first things learned by the young politician is, that to be elected he must have votes, and to obtain votes it is necessary to cause a desire, in the mind of the voter, for the election of the votee.

If the voter wants the town to appropriate some money to improve the road in front of his farm, he is not very likely to vote for the election of an official who is known to be opposed to such an appropriation.

And by the same token the aspiring politician is naturally anxious to please as many voters as possible, so as to get in a position to serve the country which he loves so well.

Whatever may be said on the right and wrong of these things, we all must have observed that the earth is inhabited by human animals, each of whom has an ever present appetite actively engaged in craving something.

The League of American Wheelmen, firmly grounded as it is in the hearts of an appreciative people, will undoubtedly live to see the perfection of all things, including, of course, roads, but we, its present members, in order to have results during our lives must make good use of such materials as we have at hand, not forgetting that the millennium, should it ever arrive, will be just as welcome as though we had sat and waited for it.

GOOD ROADS believes in political "deals," but only the kind which may be made publicly.

If the League wanted something which could benefit only wheelmen, it would be perfectly justified in using its power in every honorable way to obtain it. How much better is it then, that the League's influence be used to obtain that which benefits others even more than itself.

League members everywhere are justified in asking the candidate how he stands on the road question. Don't be satisfied to know that he "isn't opposed" to road legislation.

Neither is a horse opposed to it.

The world has too many men who are "not opposed" to anything.

A man who is earnestly opposed and can tell why, is to be desired above the inert automaton whose blood circulates only by gravity. The one will act, the other is dead wood occupying room that might better be vacant.

POLITICAL PARTIES MEAN NOTHING

EXCEPT AS THEY DO SOMETHING.

If you vote for any man because he is a Republican or a Democrat, *and for no other reason*, you are not availing yourself of the highest privilege of American citizenship.

Protection, Free Trade, Prohibition, or whatever, cannot affect the other question.

The more a man wants to protect American industries, the more he wants good roads. If he wants free trade, good roads will make it still freer. If he wants prohibition, he must remove the thing which is most likely to drive men to drink, viz :

BAD ROADS.

When properly organized, the strongest party in existence is the Good Roads party, because in such a party there is no good reason for differences of opinion.

Men are bound to differ and dispute on all questions where there is the slightest chance for argument, but in the matter of

improved highways it is only a question of *how to do it*. And that will soon be reduced to an exact science.

JOIN THE L. A. W.

and you will feel that you belong to a party with an aim, than which the world never saw a worthier.

Unless some unforeseen and remarkable blunder is made, the League of American Wheelmen will stand firmly on its own legs long after there isn't a Republican or a Democrat on the face of the earth.

#### ONE TOUCH OF NATURE.

By the bed the old man waiting, sat in vigil sad and tender,  
Where his aged wife lay dying; and the twilight shadows brown,  
Slowly from the wall and window chased the sunset's golden splendor,  
Going down.

"Is it night?" she whispered, waking (for her spirit seemed to hover,  
Lost between the next world's sunrise and the bedtime cares of this),  
And the old man, weak and tearful, trembling as he bent above her,  
Answered, "'Tis."

"Are the children in?" she asked him. Could he tell her? All the treasures  
Of their household lay in silence many years beneath the snow;  
But her heart was with them living, back among her toils and pleasures,  
Long ago.

And again she called at dew-fall in the sweet summer weather,  
"Where is little Charley, father? Frank and Robert — have they come?"  
"They are safe," the old man faltered, "all the children are together,  
Safe at home."

Then he murmured gentle soothings, but his grief grew strong and stronger,  
'Till it choked and stilled him as he held and kissed her wrinkled hand,  
For her soul, far out of hearing, could his fondest words no longer  
Understand.

There was stillness on the pillow — and the old man listened lonely —  
'Till they led him from the chamber, with the burden on his breast,  
For the wife of seventy years, his manhood's early love and only,  
Lay at rest.

"Fare-you-well!" he sobbed, "my Sarah; you will meet the babes before me;  
'Tis a little while, for neither can the parting long abide.  
And you will come and call me soon, I know — and heaven will restore me  
To your side."

It was even so. The Spring-time in the steps of winter treading,  
Scarcely shed its orchard blossoms ere the old man closed his eyes,  
And they buried him by Sarah, and they had their "diamond wedding"  
In the skies.

— Theron Brown in *Farming World*.

## EXPENSE OF GOOD ROADS.

BY COL. D. W. M'CLUNG.

**I**N almost every article about improving our highways, there is the same commendation of the object, the same disposition to dwell upon the comfort and profit if that object can be realized, but then comes, with a lament and an apology, a positive prohibition of progress by calling attention to the enormous and intolerable expense.

This inverted climax is reached by aggregating in one vast sum the cost of furnishing an entire State or county, or even a township, with durable roads properly constructed. This method of computation will kill any enterprise. The farmer who counts only the cost will never sow any wheat. To a man who knows nothing but the cost of bread and butter, it would be impossible to feed the people of the United States for one year. If all the social drinking in the United States had to be done at a gulp and paid for upon a signal, it would not only kill all the drinkers, but for the time would make an unheard of stringency in monetary affairs. To get 900,000,000 of dollars ready all at once to make payment in money or currency would drain the banks to their reserves, and empty the pocket books of the people. Things are not done that way.

Expenditures are made from year to year, as accumulations create ability. The burden is adjusted so that like the pressure of the atmosphere it is never felt, and if known is only known as a blessing.

But the principal fact in this connection is that there need not be an increase of expenses, but there should be a wiser use of the expenditures that are annually made. Not heavier taxation, or an increase in corporate and municipal debts, is the first aim; but permanent work, so that each year's work may join and supplement the work of the previous year. If any one will take the pains to calculate the amount ordinarily expended upon our roads to make them nothing the better, but rather the worse, and to disappear before storm and flood and frost of the next winter and spring, he will find that the sum in almost any of our older States rises into the millions. And this wasteful expenditure has been repeated year after year for two or three generations, and bids fair to be repeated for generations to come. The waste already amounts probably to a sum equal to all our public debts, and out of it all we have few miles of really good roads.

No, the problem of first consideration is not how to raise more money, but rather to expend what we do raise so that the work may be satisfactory and permanent.

Our roads would now be in better and more serviceable condition if all the public work had been done to secure properly constructed road beds, without metalling—road beds of clay, thoroughly under-drained, with sufficient sluices, either of iron pipe or of clay tile, protected at the openings with masonry, the clay crowned so as to free the road from water, well compacted with the roller, and the roads so located that no grade need be more than three feet to the hundred. If we had such road beds, they would be as permanent as any structure made by the hands of man. The material will not decay. It will bear up any load that horses can pull. It is smooth, firm and elastic.

When the time might come to put on metal—to complete the structure by putting on the roof—the metal would remain until worn to powder by the wheels and hoofs passing over it. Over such road beds, a coating of macadam three inches thick, broken, spread and rolled according to Macadam's rule, would be quite sufficient for any ordinary country road. Where travel is very heavy, a greater depth of metal might be required, but the writer knows of a road which bears a heavy traffic, cut in a hillside, that has but five inches of broken stone. It stands and wears, year after year, always smooth and dry. But it was thoroughly constructed and drained before stone was placed upon it, under the direction of an engineer with competent knowledge and good common sense.

This little girl must have been reading *Printers' Ink*.

Little Bessie's papa  
Is an advertising man  
Who talks his business everywhere,  
Everywhere he can.

Little Bessie heard him,  
Heard him talking ads,  
And became a loyal convert  
To that theory of her dad's.

And like her good papa,  
Believed that anything desired,  
Could be had by advertising  
When properly inspired.

One day there came a babe,  
To fill the house with joy,  
A great big bouncing baby,  
A ten-pound baby boy.

And when Bessie saw her brother,  
As she tip-toed on the mat  
And saw the babe, she said, "Mamma,  
Did you advertise for that?"

—*Printers' Ink*.

## MONTANA, THE TREASURE STATE.

BY F. H. RAY.



F. H. RAY.

LESS than four years a State Montana, because of her contributions to this nation's wealth (six hundred million dollars from mining alone), her area, her magnificent scenery, and the widespread misconceptions regarding her climate and resources, has valid claims to the attention of GOOD ROADS (\$1.00 per year) readers. The interest that attaches to all new countries invests this territory settled so recently (1862), and are even now considered by many otherwise well informed persons, as arid waste, where

temperatures of 50 below zero originate, and the dwellers divide their energies between mining and Indian warfare.

It is the purpose of the accompanying articles to dispel these false views, and to interest with facts, narrated by competent observers, in close touch with the subjects they treat. Thanks are due F. Jay Haynes, official photographer Northern Pacific Railroad, St. Paul; A. M. Moore, Hamilton; W. S. Hawes, Anaconda; Emil D. Keller, Gen. Geo. O. Eaton, Helena; and O. D. O'Donnell, of Billings, for photos furnished.

Although leading all States in copper production, having to her credit 164,000,000 pounds in 1892, and about the same in 1893, being over one-half the total for the United States, the inhabitants are not "brassy." Their characteristics are those common to pioneers elsewhere: tireless energy, buoyant courage, breadth of mind and largeness of heart, in keeping with vast area and inspiring scenery. An assumption of exclusive, superior wisdom as manifested by *some* eastern writers in discussing the silver and other questions is foreign to western men; their intimate contact with representatives of various localities begetting a cosmopolitan spirit. The abundant sunshine common to the "Silver States" does not evaporate intelligence, nor warp judgment transplanted from the East. Economic or political views advocated by a Rocky Mountain editor or senator are quite as likely to be correct as those emanating from rich New





A MONTANA LOAD OF MONTANA LOGS.

Property of Harper Bros. The load contained 10,310 feet, and was hauled by four horses.

York or erudite Boston, and to portray a group of western gentlemen as "Enemies of Public Welfare" (vide Harpers' Weekly) was grossly libelous. In pleasing contrast, however, is the policy of "Review of Reviews."

The East would engender less sectional feeling if she kept in mind that the West is peopled by easterners who have added to their emigrant knowledge, varied western experiences.

It is a significant fact that ranking third in area, 145,310 square miles, Montana is the most sparsely populated State, (132,159—1890 census), and yet in *per capita* wealth \$3,429, she equals the States of Ohio, Michigan and Illinois combined; distancing by \$965 the second State, Idaho, and overtopping the richest State east of the Mississippi River, Rhode Island, (\$1,454) by \$1,975 or 235 per cent. Emphasis is added to this by the census office returns of per capita real estate mortgage

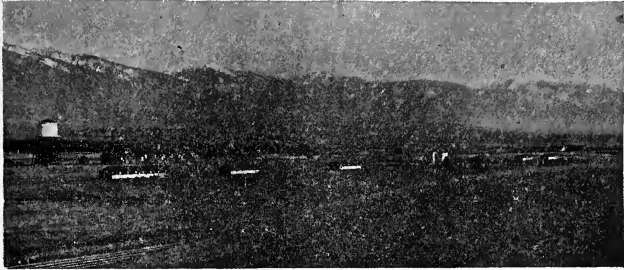


"LAND-LOCKED" SALMON TROUT.

Caught by Gen. Geo. O. Eaton. The largest one weighed 11 1-2 pounds.

indebtedness, which is \$66 for Montana, against New York, \$268, Colorado \$206, Massachusetts, \$144, Pennsylvania, \$117, Rhode Island, \$106, Connecticut, \$107. Viewed from a standpoint of ratio between the debt and the true value of all taxed real estate, Montana again makes the excellent showing of 4.78 per cent., while Massachusetts is 19.32 per cent., New York, 30.62 per cent., Pennsylvania, 18.91 per cent., and Connecticut 16.44 per cent.

What has produced this per capita plethoric purse? Mining (see page 190) is the greatest single, but not the sole cause. Cattle, sheep and horses have contributed much. What agriculture *will* yield is indicated by Prof. Emery (see article). In sheep raising and wool producing, Montana ranks fifth State, the returns for *taxation* last year footing over 2,250,000 sheep with an estimated wool clip of 17,500,000 pounds.



MARCUS DALY'S HORSE RANCH AT HAMILTON, MONT.

Of late, sheep are provided shelter and food in severe weather, but range cattle are not sheltered, nor fed from stacks; they feed the year round on wild grasses that cure standing. The total *assessed* value of all live stock in 1893, was \$25,000,000, which was fully 25 per cent. below actual values.

Obviously the climate is favorable, or such development of stock interests would be impossible. It is noteworthy that Mr. Marcus Daly's horse ranch at Hamilton (in Bitter Root Valley), is second only to the celebrated breeding farm of the late Leland Stanford; also that the winnings for 1893 of Mr. Daly's running horses were \$76,612.50. Budd Doble paid merited tribute to the nutritious value of Montana blue joint hay by shipping it to his Indiana training stable.

A topographical glance at Montana reveals an average altitude, according to Prof. Gannett's Hayden Survey, of 4,905 feet, being 2,260 feet *less* than the following States: Colorado, 7,000 feet; Wyoming, 6,400 feet; New Mexico, 5,660 feet; Nevada, 5,600 feet.

The eastern portion comparatively level, the central containing the main divide of the Rockies, and the western region also mountainous. Each of these three general divisions differs some as to the climate and productions. Heading in the main divide are several large streams, the tributaries of which literally vein the State. Only one large lake, Flathead, with its 318 square miles and soundings of one thousand feet that did not touch bottom.

Landscapes west of the main divide remind one of New England. Verdure abounds, fruits thrive, lumbering is extensive, irrigation is often dispensed with. Hunters and fishermen are in paradise.

Snow-capped mountains, especially in the central part, besides their æsthetic value, serve the useful purpose of congealed water supply to innumerable rivulets.



GREAT FALLS, MONT.

Smelters' refinery and electrolytic plant in background.

He who would accurately forecast Montana's future must consider her numerous waterfalls, and the rapidly increasing application of electricity as motive power, in addition to immense coal deposits and abundant raw material for manufacture. Unite these with the agricultural advantages, the inviting climate, and no acutely prophetic vision is required to see the inevitably marvelous industrial development.

GREAT FALLS, THE LARGEST WATER POWER  
IN THIS COUNTRY.

Compared with the largest water powers of the East and that of Minneapolis, Minn., the Great Falls, Mont., power stands as follows:

	HORSE POWER.
Holyoke, Mass., - - - -	12,260
Lawrence, Mass., - - - -	10,999
Lowell, Mass., - - - -	11,845
Manchester, N. H., - - - -	12,000
Minneapolis, Minn., - - - -	52,000



FLAT HEAD LAKE.

Average for 12 months developed and undeveloped	- - - - -	99,104
Great Falls developed horse power	- . 32,867	
Great Falls undeveloped horse power	- <u>235,235</u>	
Total Great Falls undeveloped and developed, average for 12 months	- - -	268,102
Great Falls excess of power over all of above compared water powers	- - - -	168,998

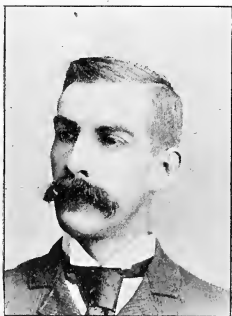
The proposed development of Niagara Falls water power, by means of tunnel, as claimed, will realize 120,000 horse power. The total of the above Eastern water powers, including Niagara Falls and Minneapolis, is 219,104, while the excess of Great Falls over all these is 48,998.

(The view and data relating to Great Falls are from Mr. Jerry Collins' article in *Northwest Magazine*, January, 1894.)

## THE ROADS OF MONTANA.

BY A. M. RYAN.

*Professor of Engineering.*



A. M. RYAN.

**M**ONTANA is a land of magnificent distances and magnificent distances suggest long journeys. A glance at the map will disclose the fact that the country is not covered with a net-work of railroads; but notwithstanding this drawback there probably is no State east of the Rocky Mountains where the average travel per capita is as large as it is in Montana. Until within a comparatively few years there was not a mile of railroad track within the State lines; but the building of the Northern Pacific

and the Great Northern trans-continental lines, resulted in the building of about twenty-eight branch roads, and it is now possible to enter the State from four trans-continental roads. With a population averaging less than one person per square mile, railroads in Montana are a luxury which require miles of highway travel for many to attain. Fortunately we are blessed with good natural roads, and hundreds of miles of the original trails made by the early day emigrant and freighter remain to-day in use, practically unchanged. As may be expected in a large State like Montana, covering about 145,000 miles, we have almost every condition of soil. On the plains and in the valleys we find for the most part a mixture of loam and clay with more or less sand; this mixture, as might be expected, makes a disagreeable mud when thoroughly wet, but it sheds the water easily when not cut up, and as a rule it is under-drained by a gravel deposit.

Water, the great enemy of roads, does not annoy the Montana traveller very much, as the precipitation over most of the State only amounts to from twelve to sixteen inches per year, and most of this comes down as snow. The presence of snow does not, however, necessarily mean mud during the thawing season, for we are blessed with what are known as "Chinook" winds; these winds are warm and dry and their effect is to evaporate



"JIM" MITCHEL'S TEAM

Stuck on a down grade with a load of mining machinery.

the water sometimes as fast as the snow melts. After the light spring rains the soil bakes hard and often remains that way until the following spring. These conditions make our roads perhaps rather dusty, but otherwise as good as could be expected, and travelling a pleasure instead of an affliction. The effect of the presence of alkali is to convert the road when wet into a place which would set the manager of a skating rink wild with delight on account of its slipperyness; this, together with the presence of badger and gopher holes, play an important part in the trials of the Montana traveller. One of the exceptions to the rule is the beautiful and fertile Gallatin Valley, with its rich black loam; the large percentage of organic matter present in this soil makes the Valley a splendid place for crops, but a wretched place for roads. The large rainfall of this section, almost sufficient to render irrigation unnecessary, further increases the difficulties of the highway traveller. Indeed we must confess that we have frequently seen the time when the



[The photo sent by Prof. Ryan was not good enough to make a halftone cut, so we substituted the above, which is much the same kind of a road.—ED.]

delight of the bad roads camera fiend would approximate to ecstasy.

In the spring our mountain streams bring down large quantities of water, which frequently overflows their banks and leaves but little of the roads in their vicinity; at such times only a daring and skillful driver can expect to travel far in this neighborhood.

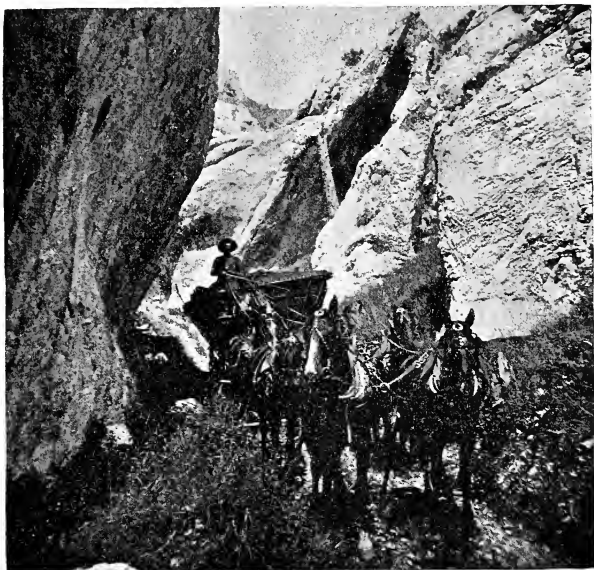
The cut on this page shows a place where almost the entire road is replaced by a stream over the hubs in depth at places; here and there patches of the original road bed show up like islands in a river.

Our mountain roads have been for the most part constructed for the benefit of the miners and lumbermen; the grades, holes and slants of some of these specimens would turn the hair of an inexperienced, timid traveller, gray in a few hours. Indeed the skill of many of the freighters and the drivers of ore wagons in handling their heavy vehicles, with several spans of horses attached, is wonderful. Fatal accidents are of very frequent occurrence on these narrow, ill-kept thoroughfares, and the marvel is that they are not more frequent, especially when one considers the half-wild condition of our horses.

For the bicycler our State has many charms; if we miss the smooth macadam of the East we have a dirt road which is



usually almost as good, and we have in addition an unrivalled climate; if we live in a valley, the mountains, which like the seas are ever changing in appearance, lend a charm which goes a long way towards compensating for the absence of half-way houses, characteristic of our popular eastern driveways.



"MOSELY'S" TEAM HAULING COAL THROUGH CATTLE CANYON.

We congratulate Mr. Mosely on his being thrown in contact with scenery of such a high order.

During his daily rides he must often wonder

“ Who spoke creation into birth,  
Arch'd the broad heavens, and spread the rolling earth?  
Who form'd a pathway for the obedient sun,  
And bade the seasons in their circles run?  
Who fill'd the air, the forest, and the flood,  
And gave man all for comfort, or for good! ”

## MINING AND METALLURGY IN MONTANA.

BY F. W. TRAPHAGEN.

*Professor of Chemistry and Metallurgy, Montana Agricultural College.*



PROF. F. W. TRAPHAGEN.

GOLD, the first metal mined in Montana, was discovered on Gold Creek by Granville and James Stuart, and their associates, in 1859. Bannack, the first seat of territorial government, was the earliest camp of any considerable size, but the Grasshopper "diggins" of this place were shortly eclipsed by the very rich placers of Alder Gulch about Virginia City, from which many millions of dollars worth of gold was shipped. Alder Gulch in its turn was nearly depopulated, and thus the history of placer mining "repeats

itself." There is something very pathetic in the appearance of one of these almost deserted mining towns. The many unoccupied houses, most of them doorless and windowless, the general air of quiet that is the inactivity of death rather than of rest, mingles clearly in one's mind with the thought of what must have existed only a short time before. The dwellers in these old "camps" are now chiefly Chinamen, who by hard work, long hours and persevering energy are making money by washing over the gravel left by the white man, as too poor to work. The invariable reply of the Mongolian to "How much you make, John?" is "Fo' bittee day." Fifty cents a day.

The obtaining of gold from placers (the term applied to auriferous gravel deposits), is very simple.

The various localities are "prospected" by "panning," which consists of the separation of the gold from the dirt by the use of a gold pan; the gold remaining, while the lighter materials are washed away by the rotary motion given the pan. "Pay dirt" being found, the operations take place on a larger scale. "Long tons," "rockers," etc. giving way to the powerful hydraulic giants which throw jets of water six inches in diameter and sometimes under as much as two hundred feet of pressure, against the banks, fifty, sixty and ninety feet high, tearing them down with ease, and washing away large boulders



PLACER MINING, JEFFERSON BAR.

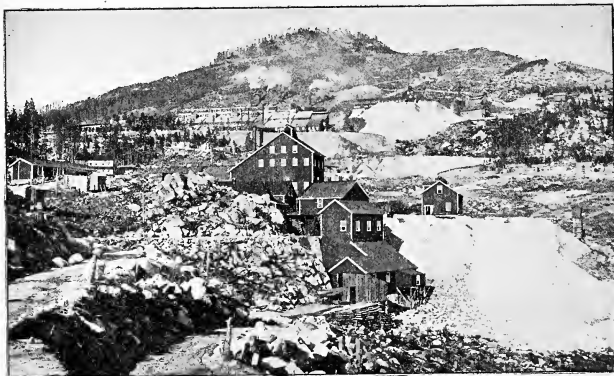
as chips of wood are carried in ordinary streams. The very high specific gravity of gold causes it to resist the carrying power of the water, and it is deposited in the first of the sluice boxes of which there may be many miles. From these sluice boxes the gold is easily obtained in the weekly "clean up."

To my mind the most interesting property in Montana is the old Atlantic Cable mine back of Anaconda. Originally located as a quartz claim by two sailors who had been on the Great Eastern cable laying trip, it lay idle, so far as the under-ground working was concerned, until after its development as a placer claim. After several hundred thousand dollars had been washed from the surface by the usual methods of placer mining, the under-ground working proceeded, and about two millions of dollars were taken out. The ore was so rich that a regular system of searching the men as they left the mines was instituted to prevent the carrying off of many dollars' worth of the precious metal. Pieces weighing a few pounds, ranging in value from ten to several thousand dollars, were frequently found.

One of the richest silver mines of the world is the celebrated Granite Mountain, which has thus far paid over twelve million dollars in dividends.

Its neighbor the Bi-metallic is on the same vein and promises to pay dividends equally high.

A sample of ore from this mine was exhibited at the Columbian Exposition, which was one of the finest specimens in the whole mining building. It weighed over two tons, illustrated

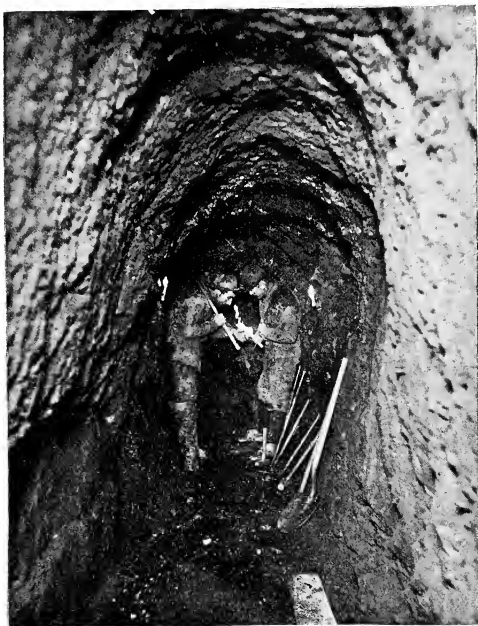


GRANITE MOUNTAIN MINE. DIVIDENDS PAID, \$12,120,000.

ribbon vein structure beautifully, showing plentiful markings of ruby silver, and gave as the result of the assay of a sample boring 937 ounces of silver per ton. Ore containing twenty ounces per ton, or even less, can be worked under favorable conditions, one of which is a price considerably better than sixty-two cents an ounce for silver. At the present price (sixty-two cents), only exceptional mines can work at all, and few, if any, make profit.

Silver is separated from its ore principally by milling, which may be of two kinds. Free milling which is applied to ores in which the silver exists in its native state, or as chlorides, etc., when the ore is crushed fine and ground with quicksilver for a considerable time; the silver uniting with the quicksilver forms a heavy amalgam from which the "tailings"—the desilverized ore, is separated by water. The amalgam, after straining through duck bags, is heated in a retort, when the quicksilver is driven off, to be condensed and used again, the silver being left behind, as a spongy mass. This is melted down and cast into bars for shipment to the refinery. The only essential difference in the treatment of the free silver ores and the base ores, is that the latter must first be heated, or "roasted" to a high temperature with common salt, which changes the silver into chloride, when it is treated as the free ores are.

Montana stands pre-eminent as a copper producer; her output in 1892 being over fifty per cent. of the amount mined in the entire United States, and nearly thirty-five per cent. more than the product of Michigan in the same period. All of this copper is mined in the city of Butte, and the producing mines are all in a circle of not more than a half-mile radius.



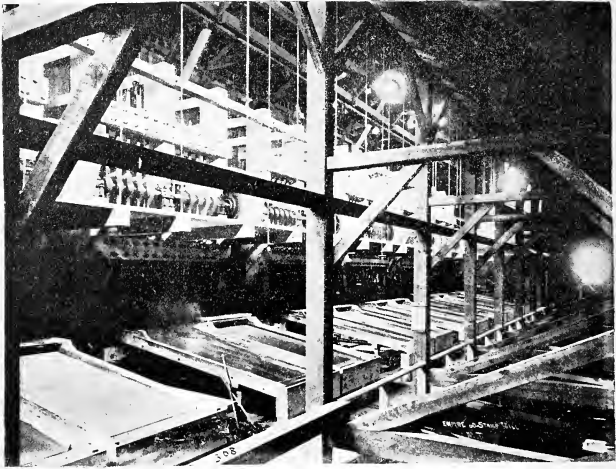
INTERIOR OF BALD BUTTE MINE, DEER LODGE COUNTY, MONT.

It is very doubtful if there be any one who can name all the different copper mines in this small area. One cannot put his foot down in Butte except upon a mining location, and a glance at the county map gives the impression of a thoroughly pasted bill board, each poster a mine.

Many veins forty feet in thickness are known and even one hundred feet is not unusual. Much of this ore is of the highest grade; some of it containing sixty per cent. of copper, and nearly all of it contains silver also.

The smelter capacity for the treatment of these ores is upwards of five thousand tons daily; the Anaconda works alone being able to treat more than three thousand tons a day. These works are probably the largest in the world and are located twenty-eight miles from Butte.

At present one hundred and twenty cars of ore carrying thirty tons each, are shipped to Anaconda daily, where the



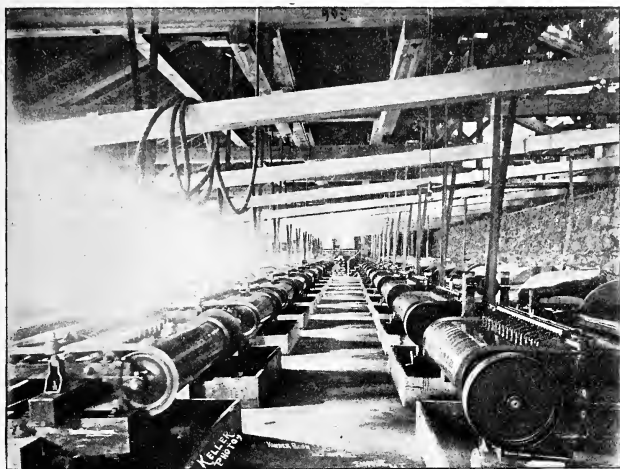
SIXTY STAMP MILL. EMPIRE, (LEWIS & CLARK CO.)

works were located, as an abundant supply of water could be obtained.

Several of the companies have their smelters and refineries at Great Falls, one hundred and seventy-one miles from Butte, taking advantage of the tremendous water power of the Missouri River at that point. The copper of the Butte ores is combined with sulphur, iron and silica, and separated by smelting.

The ore is first roasted to get rid of most of the sulphur and to oxidize the iron so that it will unite with the silica to form slag in the subsequent operation.

This roasting was formerly done in case of the richer ores, by piling the ore in coarser pieces on just sufficient wood to ignite the sulphur in the ore. After it was burning the heat was regulated by covering with fine ore, thus limiting the supply of air; but the city council passed resolutions prohibiting roasting in piles. Since then, the coarse ore has all been treated in stalls, the smoke being conducted by tall chimneys, high in the air, before being liberated. The lower grades of ore are first concentrated—that is separated from the material containing no copper, advantage being taken of differences in specific weight. Excellent results are obtained in the concentrators here, the "tailings" rarely containing a considerable fraction of one per cent. of copper.



VANNER ROOM OF THE SIXTY STAMP MILL, EMPIRE.

These copper concentrates are roasted in Bruckner cylinders, which are revolving cylinders through which a fire plays, or in some automatic furnace like the O'Hara or Spence, or in the long hearth furnace, where the ore is put into the rear of the furnace and slowly pushed forward to the hotter parts by the workmen. It is evident there must be tremendous quantities of sulphurous oxide produced in these roasting processes and it certainly amounts to hundreds of tons daily. In the East this would possess great value for the production of sulphuric acid, but because of high transportation charges to market, it is here only a nuisance, and the problem is how to get rid of it with as little annoyance to the people of Butte as possible. Butte is a city without a tree, and few signs of any sort or verdure, in consequence of the smoke. One of the largest items of expense to the mining companies is the problem of the disposal of this objectionable gas.

Experts have been consulted from all parts of the world; they have visited Butte and attacked the puzzle without success. At Anaconda enormous stacks one hundred and twenty-five feet high, and fourteen to sixteen feet internal diameter, are built on top of a high hill. Connection is made with the furnaces by flues large enough for a railroad train to run through, ten by fourteen feet interior dimensions, and six hundred feet long.

After the ore is roasted it is heated in a furnace to a high temperature, limestone being sometimes added to form a fusible slag, with the silica and iron, which is thrown away or cast into large bricks which are extensively used for building purposes.

The other product is called matte and contains usually from fifty-five to sixty-five per cent. of copper with varying amounts of sulphur and iron. This matte is melted and treated in a converter somewhat similar to the Bessemer converter used in steel making. A stream of air is blown through the molten matte; when the sulphur burns away the iron is oxidized and unites with the silica in the converter lining, and the metallic copper remaining is cast into bars. This copper is impure, containing about one per cent. of other elements. But when it is purified by the electric refining process it is so pure as to be ranked equal if not superior to the highest grade of copper from other sources.

Montana was the first State in the Union to use the Manhes or "Bessemer" processes and it is abreast with all other localities in its successful application of electrolytic refining methods.

Foreign capital has found a fertile field for investment in Montana mining properties, English companies owning the Drum Lummon, Elkhorn, Golden Leaf, etc., while the Lexington is owned by a French syndicate.

Nearly all the cities of our country hold interests in properties in this State—notably Boston, with its Boston and Montana, Butte and Boston and Boston and Colorado, Montana properties. St. Louis capitalists have derived immense returns from their investments in the Granite Mountain, Bi-Metallic, Hope, Combination, and other properties about Philipsburg.

The coal of the State bids fair to become one of the most important of its resources. The use of our own coal is slowly gaining headway often against considerable prejudice, and coke made from Montana coal has been successfully used under the most trying conditions, and fulfilled all requirements.

With our immense beds of iron ore, our coal and our limestone, it is only a question of time when we shall produce our own iron and steel.

The value of the gold, silver, copper, lead and coal produced in 1892 amounted to about \$47,000,000. The amount of dividends paid by Montana mines to date is considerably above \$28,000,000. This is exclusive of profits of close corporations and of placer mines, both of which are very great.

The Anaconda Company gives to the Assessor of Silver Bow County as the last year's *net* proceeds from its mines the sum of \$2,800,000. This is one of the close corporations.

The value of the gold mined in the State up to the end of 1893 was \$189,794,568.00 and of silver \$198,844,187.00. Cer-



tainly *over four hundred million dollars* in the precious metals represents the total output of Montana to date.

About 560,000 *tons* of copper have been produced, which at the low price of ten cents a pound would amount to \$112,000,000. Add to these values, the value of the lead, of the coal, of the gems, and other mineral products and Montana thus far must have yielded over six hundred million dollars to her miners.

There is so much of interest that might be written, connected with mining in Montana, that it is difficult to decide just what to leave out, but I cannot conclude without some reference to the bearing of good roads upon the mining here. For years, wood, salt and other supplies necessary for mine and mill were hauled up a very steep grade from Philipsburg to Granite at an enormous expense. Then wire rope tramways were constructed from the mine to Rumsey, a point to which the railroad was run. Shortly after the completion of these improvements the old mill on the hill was abandoned. When the Bi-Metallic mill was constructed instead of being placed at the mine, it was built at Clark, some miles distant, so that the mill and mine might be independent of the roads.

While the tramway was built primarily to convey the ore from mine to mill, all, or nearly all, of the hauling of other freight is done by the railroad to the mill\* and by the tramcars from the mill to the mine. I have no doubt that with a good system of roads all the difficulties experienced here might be avoided.

Because of an insufficient water supply at the mine, the mill of the Champion Mining Company was located at Deer Lodge, thirteen miles below the mine. In dry weather the teams hauling the ore, consisting of six horses and "lead and trail" wagons would carry about nine tons each, and return to the mine the same day. In rainy weather the same number of horses would require a full day to bring little more than one ton of ore in one wagon, the result being that whenever a rainy spell lasted a week the mill was obliged to shut down for lack of ore; throwing men out of employment for the time, at both mine and mill, and causing considerable loss to the management. The moral is obvious.

## PUBLIC EDUCATION IN MONTANA.

BY C. C. WYLIE.

*Chief Clerk State Board of Education.*

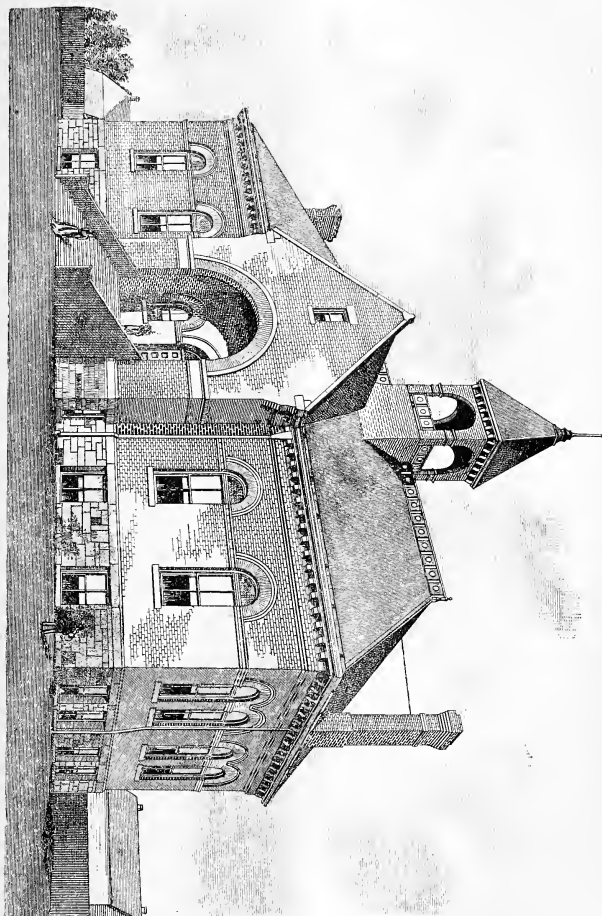


C. C. WYLIE.

TO such readers of GOOD ROADS as may not be familiar with the public school system of Montana, a brief analysis of it may be interesting.

The general supervision of the public schools of the State is vested in a State Superintendent of Public Instruction, who is elected by popular vote at the general elections and holds office for four years. His duties are similar to those required to be performed by State Superintendents in other States.

County superintendents have supervisory control over the schools in their respective counties. They are elected for a term of two years. Women are eligible to hold this office, as well as any school district office. Out of the twenty-one county superintendents in this State, thirteen are females, five married and eight unmarried. Experience amply justifies the statement that they are fully as competent and capable to perform the duties of this office as are their co-laborers of the opposite sex. Their duties are manifold and often arduous. It is required of every county superintendent that he visit each school in his county at least once a year. When it is remembered that many of the counties in this State contain between ten thousand and twenty thousand square miles each—exclusive of Custer County, which is larger than the combined area of the five States of New Hampshire Vermont, Massachusetts, Rhode Island and Connecticut—that the population in many portions is sparse, and school districts scattered over an area of hundreds of miles, something of the difficulties that attend the proper discharge of the duties of the office may be better understood. But, however hard the task of reaching some of these districts is, it is a fact that they are never missed. And many of them are visited by the superintendent two and three times a year. This is made possible by the fact that most of the farthest isolated districts have schools conducted during the summer



A MONTANA SCHOOL HOUSE.

months. No more pleasant outing can anywhere be found than that afforded by a three or four weeks' trip with horse and buggy during the months of May, June, July, August or September over mountains and valleys, through picturesque canyons, and beside swiftly-flowing and crystal-clear streams. And this is one of the pleasant experiences of every county superintendent in Montana. Well-graded wagon roads, hard as pavement and consequently free from mud, and connecting all important points, render travel safe and easy.

A more direct control of the public schools is exercised by boards of trustees. In all country districts, and in all towns having a population of less than one thousand, these boards are composed of three members each. One member is elected by popular vote of the district each year, and holds office for three years. In cities having a population in excess of one thousand the board consists of seven members, elected by the voters of the district.

For the support of the common schools of Montana, funds are derived from the following sources:

1. A county school tax levied in each county by the board of county commissioners. This tax cannot be less than two mills nor more than five mills on the dollar on all taxable property. It is apportioned to each district in proportion to the school census, children between the ages of six and twenty-one years.
2. District taxes; voted by special meeting for some specific object.
3. All fines and penalties arising from a breach of the penal laws of the State.
4. All moneys arising from the sale of town lots which are a part of the school lands or any other State lands.
5. Moneys arising from unappropriated county road tax.
6. The interest on the principal of all moneys arising from the sale of all school lands granted by the Congress of the United States.

The lands referred to under the last division consist of the sixteenth and thirty-sixth sections in every township in the State. As yet, the greater portion of these lands are unsurveyed and therefore not marketable. When Montana's immense area of 146,000 square miles shall have all been surveyed, the grand heritage of her common schools will aggregate the stupendous sum of five million acres. The provisions of the Enabling Act of Congress, approved February 22d, 1889, prohibit the sale of these lands at a price less than ten dollars per acre. In case the land is so situated as not to command this price, it may be leased for a period of five years. Only since July 1st, 1891, have the surveyed portions of these lands been on the market for sale or leasing. But the interest which has already accrued

is a substantial contribution to the school fund, and as the amount surely and rapidly increases, we can hopefully look forward to a time in the not far distant future, when this fund alone will place the common schools of Montana upon a solid and sufficient financial basis.

The people of Moutana believe in education. They submit cheerfully to voluntary taxation for the support of schools. And while this in many instances is a burden heavy to bear, it is borne willingly because of the abiding faith in the heart of every citizen, that money so expended must bring blessings to the home, purify society, and elevate the standard of citizenship among our people. The improvement made in our schools has kept pace with business activities in all lines. A steady increase is being made each year in the number of school districts, in the average length of school in days, in the average daily attendance, school buildings, appliances and apparatus. Not the least of the many factors contributing to the success of our schools is the character of the teachers. I think Montana can justly claim that in a majority of her schools are teachers possessing as thorough qualifications for their profession as can be found in any State. A large proportion of them are College or Normal graduates who have been induced to come here because of the higher wages paid.

I quote below some figures from the Report of the Commissioner of Education for 1890-91 which will serve to show the enviable position Montana occupies among her sister States in the matter of public education:

Amount raised for each child of the school population,

Massachusetts.....	\$16.44
Illinois.....	11.70
District of Columbia.....	14.54
Iowa.....	12.31
Wyoming.....	18.04
Colorado.....	23.87
Nevada.....	18.43
Washington.....	14.44
California.....	17.75
Montana.....	16.02

I have selected the above ten States because they stand highest. Montana stands sixth on the list while North Carolina reaches the lowest limit, with \$1.24.

Total amount expended per pupil in attendance :

Massachusetts.....	\$30.70
District of Columbia.....	31.04
Minnesota.....	32.96
Wyoming.....	45.34
Colorado.....	43.45
Arizona.....	38.68
Nevada.....	31.89
Washington.....	47.76
California.....	35.39
Montana.....	47.76

Of the above ten States which stand at the head, Montana and Washington lead with the same figures. The lowest limit is reached at \$3.03, and the figures belong to South Carolina. It should be borne in mind while scanning the above statistics, that more than 96 per cent. of the funds for the support of the common schools in this State are derived through direct, or voluntary, taxation, while in all other States save three, a large proportion of these funds is raised from State taxes and a permanent school fund.

In the expenditure per capita of the population Montana is excelled only by Colorado, Washington and California. Here is the comparison :

Colorado.....	\$4.08
Washington.....	5.03
California.....	4.29
Montana.....	3.87

But let us compare these same States in the matter of derivation of funds. Quoting again from the Commissioner's Report we find the following :

Percentage of the total receipts derived from

Per Funds and Rents Per cent.	State Taxes Per cent.	Local Taxes Per cent.	Other Sources Per cent.
Colorado..... 5.2	.....	68.04	26.04
Washington..... 3.5	.....	78.5	18.0
California..... 4.4	47.3	46.4	1.9
Montana..... ....	.....	96.1	3.9

It is a claim that can be sustained from the records that the people of Montana tax themselves more heavily, and provide more liberally for the education of their children in public schools, than any State or Territory in the Union.

In this connection I wish to emphasize the standing and importance of some of our high schools. Those deserving of special mention are, Helena, Butte, Bozeman, Anaconda, Missoula and Great Falls. Each of these schools is provided with a full corps of as good teachers as money will procure, with costly buildings and complete appliances for doing effective work. The high school building in the first named city was completed at a cost of one hundred and fifty thousand dollars. Many of the ward buildings cost in the neighborhood of twenty thousand dollars each. Butte's high school building cost one hundred twenty-five thousand dollars, with many ward buildings aggregating one hundred and fifty thousand more. Bozeman with four thousand population, has a high school building costing fifty thousand dollars, and one ward building worth fifteen thousand dollars. Missoula has one hundred thousand dollars invested in school houses. Anaconda fifty thousand dollars. Helena pays forty-three teachers for nine months each

year; Butte has eighty-one in her corps. The wages paid these teachers will average as high as those paid for like work anywhere in the United States.

Our system of public schools, so generously supported by the suffrages of the people, gives promise of expanding its benefits immeasurably, through the growth in wealth and population which will afford better opportunities for its successful operation.

The Legislative Assembly of 1893 established a State University, Agricultural College, State School of Mines and Deaf and Dumb School. These were distributed over the State, the cities presenting the most favorable conditions for their location proving successful. These are Missoula, Dillon, Bozeman, Butte, Boulder. These institutions are under the general control of the State Board of Education. This Board is composed of eleven members. The Governor, Superintendent of Public Instruction and Attorney General are *ex-officio* members. The other eight are appointed by the Governor and confirmed by the Senate.

The Legislature voted fifteen thousand dollars to each of these institutions, but owing to the Constitutional limit of taxation having been reached before these appropriations were made, the money has never become available. It is expected the Legislature to convene next January will make ample provision for opening and putting in full operation all the State Educational Institutions. The Agricultural College is more fortunate than the others in that it receives an annual appropriation from the Government. This money, however, can only be used to defray the running expenses of the College. Therefore buildings had to be rented. With a full complement of professors and instructors the College opened its doors for the first term September 15th, 1893. The year just closed has probably been unparalleled in the history of Agricultural Colleges. Opening under exceptionally unfavorable conditions, in the centre of a State of immense area and sparse settlement, it soon won its way into popular favor through the tireless and energetic efforts of its faculty and board of managers, and at the close of the first six months of its existence had enrolled and in daily attendance, one hundred and forty students. The College is an object of pride to every citizen in Montana. Its future success is already assured.

The Organic Act of Congress approved February 22d, 1889, made the following gifts of land to the State of Montana for educational purposes:

For a School of Mines, 100,000 acres.

For a State Normal School, 100,000 acres.

For a State Agricultural College, 140,000 acres.

For a Deaf and Dumb School, 50,000 acres.

In 1881, the United States gave to Montana seventy-two sections of public land for University purposes. This makes the total donations for educational purposes, 436,080 acres. Under the present law this land cannot be sold for less than ten dollars per acre. About one-half of the amount has been selected. This land, for the most part, is the choicest in the State. It has been selected only after careful inspection by the State Land Agent. Much of it will command more than ten dollars per acre, while that which cannot now be disposed of will be held in reserve for future needs.

From the gradual sale and leasing of this vast quantity of land will come a revenue that will sustain the higher schools of learning in this State through the years to come, and place them on a par with the best in the land.

#### AND HIS NAME WAS LEGION.

They built a fine church at his very door—  
                                   He wasn't in it;  
 They brought him a scheme for relieving the  
                                   poor,  
                                   He wasn't in it.  
 Let them work for themselves as he had done,  
 They wouldn't ask help of any one  
 If they hadn't wasted each golden minute—  
                                   He wasn't in it.

So he passed the poor with a haughty tread—  
                                   He wasn't in it.  
 And he scorned the good with averted head—  
                                   He wasn't in it.

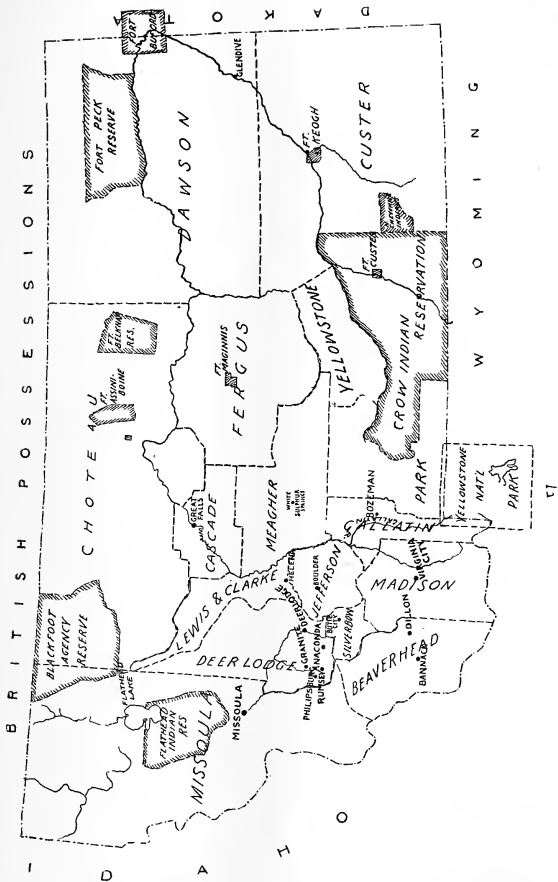
When men in the halls of virtue met,  
 He saw their goodness without regret;  
 Too high the mark for him to win it—  
                                   He wasn't in it.

A carriage crept down the street one day—  
                                   He was in it.  
 The funeral trappings made display—  
                                   He was in it.

St. Peter received him with book and bell:  
 "My friend, you have purchased a ticket to—  
                                   well,  
 Your elevator goes down in a minute!"  
                                   He was in it.

—Exchange.





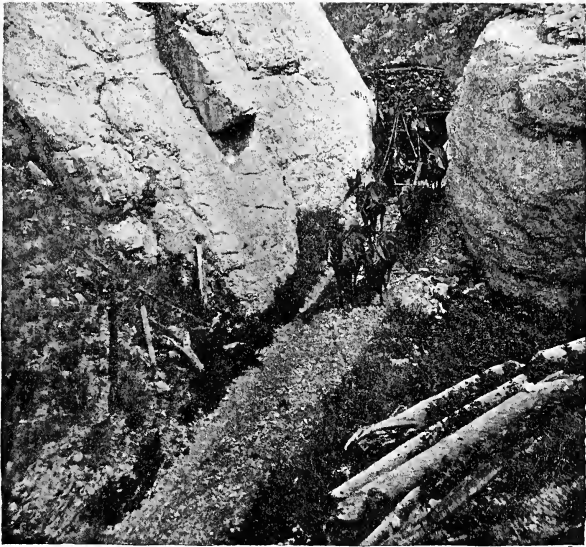
MAP OF MONTANA.



VIRGINIA CITY, MONT. POPULATION 1893, 700.



INDIANS' ANNUAL WATERMELON FEAST.



A ROAD IN "HELL'S GAP," MONTANA.

## MONTANA FROM AN AGRICULTURAL STANDPOINT.

BY PROF S. M. EMERY.

*Director Experiment Station Montana Agricultural Society.*

**W**HY should Montana be placed in range of the index-finger upon the guide post, pointing toward those States presenting greatest attractions to persons most interested in Agricultural pursuits, and not in Agricultural pursuits alone but in climatic effects and all conditions governing and conducive to the best physical, moral and financial interests of the homeseeker?

And at what cross roads should this guide post, with its large hand of fellowship, be placed, outside of the columns of railway advertisements formulated in the light of the fact



HARVESTING BARLEY ON MANHATTAN FARM.

This farm contains 13,000 acres.

that the American Public is a traveler, and if he travel, why not by flaming headlines and scenic pictures induce him to "choose our route?"

These are two pertinent questions, only to be answered by careful investigation and inquiry into the almost boundless possibilities of Montana's resources as compared with those of other States.

When the immortal Horace Greeley, with that honesty of purpose that so strongly characterized his nature, directed the young man "To Go West" he had little conception of the magnitude of that field. The agricultural West of his day, comprising what is now known as the Mississippi Valley, which is no more to be compared to the broad new West of the Rocky Mountain region than is the Chicago River, with its sluggish impure waters, to the bold an sparkling mountain stream leaping forth from the living rock.

Theory is one thing; practice is another. What can the home seeker reasonably count upon finding in Montana? First and most important, government lands are still to be obtained, subject to Homestead or Desert land entry, or to be purchased outright at very low figures from the N. P. R. R. Though by far the better way is to buy lands already improved, from the



LOADING WOOL AT GREAT FALLS, MONT.

original settler, who not infrequently is willing to part with a portion of the vast territory of tillable land he has already acquired. In the latter plan it is all important to secure with the land a valid water right, sufficient in quantity to irrigate the entire tract.

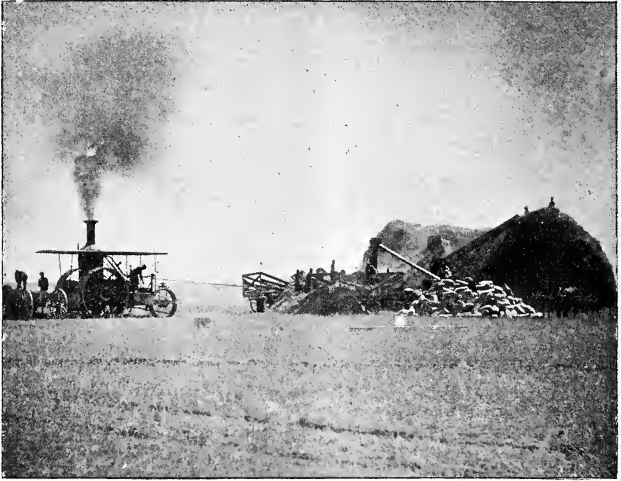
In no part of the United States, with a single exception, are to be found more fertile lands than in Montana, while at the same time they may be purchased to-day at a cheaper rate than in any other irrigable State.

A close estimate based on crop reports collated from cards of enquiry sent to every land owner in Gallatin County, Montana, in the fall of 1893, showed the average per acre of

Oats to be	-	-	-	54	3-5	bushels,
Wheat to be	-	-	-	32	1-2	"
Barley to be	-	-	-	44	1-3	"
Potatoes to be	-	-	-	263	8-9	"

reducing these yields to a percental comparison with the crops of the United States as shown by the reports of the Department of Agriculture, we note that the yield in excess of the United States is

Oats,	-	-	-	-	-	233	per cent.
Wheat,	-	-	-	-	-	284	" "



THRESHING BARLEY (MANHATTAN FARM).

Barley,	-	-	-	-	141 per cent.
Potatoes,	-	-	-	-	375 " "

or in other words the oat grower of Gallatin county, Montana, finds his single acre to be as productive as 2 1-3 acres in the average of other States. The wheat acre equaling 2.8 acres, the barley the equivalent to 1.4 acres, while the potato planter notes that his acre yields an amount only to be produced on 3.75 acres in the average States.

These figures are demonstrable by the published reports of the Government and documents on file in the office of the writer.

A summary of the Department of Agriculture made up from the estimate of 25,000 Northwestern farmers, and 4,000 experts from the Department place the average cost price per acre of wheat at \$11.69 and the cost of an acre of wheat in Wisconsin at \$12.93. In this estimate the land rent is about \$3.00 per acre. The cost of wheat production in India per acre is \$10.14 where grown without irrigation, and when water was used the additional cost was \$2.12 per acre making the cost per bushel for India wheat 93.8 cents.

The average yield of wheat of the United States for the ten years ending with 1890, was twelve bushels per acre. Remembering the ruling price of wheat and considering the yield, it



MOWING SECOND CROP OF ALFALFA.  
Hesper farm, near Billings, Mont.

can be plainly seen that this crop has been produced at a loss, and that when the occasion will permit, those who have been growing the crops under such disadvantageous circumstances, will turn their attention to other and more profitable agricultural pursuits, and this work be performed on land that is better adapted naturally to the crop, and the natural fertility of which can be maintained by the system of irrigation.

The United States has been one of the most potential in supplying the markets of the world with the staff of life: Its granary may be said to be on wheels; beginning with the Genesee Valley of New York and the fertile lands of the Western Reserve, it has been shifted, first to the Ohio Valley and Indiana, thence to Illinois and Missouri, next to Minnesota, Wisconsin and the Dakotas, and the fertility of the soil in all these States, has been sadly depleted by the process of wheat culture, and slowly but surely has its production been discontinued in the eastern States.

The signs of the times indicate unerringly that the immediate future export supply of wheat will be grown in what was formerly considered as the Great American Desert, or the Rocky Mountain States.

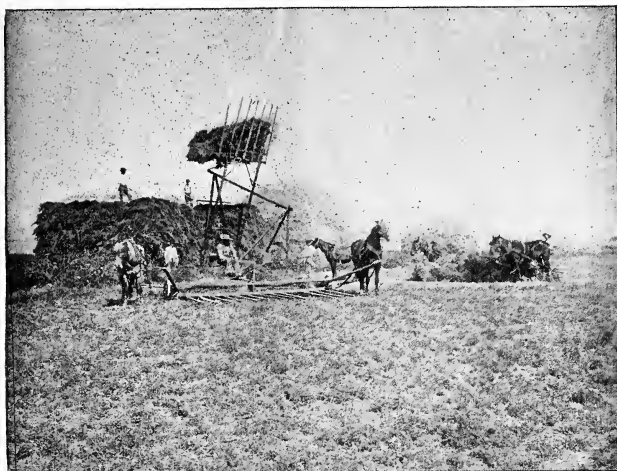
The application of water in the process of irrigation does not cost to exceed \$1.00 per acre. This being the case, why should not the relative value of such lands be in proportion to its superior productive capacity?

The practice of irrigation in America was first adopted by Mexicans and Pueblo Indians, who, laboring in equatorial regions, under the fervid rays of a tropical sun, were compelled to devise some method by which to counteract the absence of rainfall, and insure an equable distribution of water over their parched fields, in order to preserve and mature the crops necessary to their maintenance.

The first impression of irrigation gained from these people by the invading Europeans, was that it was a laborious and painstaking duty, involving too great an outlay of time and strength to conduct to advantage, and these erroneous ideas still prevailed in the minds of the whites of the United States until the developments of the gold diggings on the Pacific slope, alluring by their fitful gleams, the adventurous spirits of the East, who came in hoards like the seven-year locust, devouring everything in their way and still demanding more food. This demand soon created a market for the products of the soil, when the laborer oftentimes found his richest mine to be his vegetable garden and other crops. These crops were entirely dependent upon the use of water. So, Brother Jonathan, preferring in this case to borrow instead of to invent, introduced the Mexican method of irrigation into the United States. Under this system the profits attending the cultivation of the soil, by the first occupying the field, were simply enormous and when to the industries already established, were added the successful growing of fruits, especially those of the Citrus family, land immediately came into demand, and in a country where, perhaps originally were the greatest difficulties to overcome, owing to the scarcity of water, irrigation became a permanent and certain success, changing the arid wastes of sand into a vast vineyard interspersed by orchards of orange, apricot and peach.

Unfortunately in the very face of such rich and sure returns from irrigation, the ranchman coming from the East filled with preconceived ideas of the necessity of regular rainfall, and submitting to the drought and ruined crops as a dispensation of Providence chose to keep the imperative need for the use of water, as an indispensable condition to successful cultivation, in the background or to admit it only under protest as an inevitable evil, not seeming to realize that the very reverse was the case, and that he held God's best boon to man, water, harnessed in his hand, obedient at his command, to distribute itself over the thirsty land, whispering of growth and increase to each little seed lying dormant in the fertile earth waiting for the message of the moist, cool drops before springing into life, to clothe the fields in living green.





STACKING ALFALFA (HESPER FARM).

And such water! gushing from the very heart of the mountain, bursting through its ribs of adamant, cutting channels in the living rock, flowing over massive boulders, around which it swirls and seethes and churns itself into boiling rapids, or dashes into foaming cataracts, freed from all impurities, down the canon to level plains below.

None can ever fully comprehend the meaning of pure water until familiar with these mountain streams, which owe their existence either directly to melting snows whose rills and rivulets unite to form a mountain torrent, or to subterranean springs fed from the same source, whose waters, percolating through rifts in the rock, have been garnered up in the innermost recesses of the mountains, forming great reservoirs, until overflowing their bounds they find egress through the first crevice, and welling up joyfully out into the light and the air, again become sparkling brooks, whose ice cold waters are the home of the grayling and mountain trout.

Such a stream, as it finds its way through the canon, is one of Nature's most exquisite poems and a source of unending delight, to him who with clearer eyes can read aright, the sublimity of the mountains towering thousands of feet to join the clouds, their stern, aggressive grandeur, softened and toned by

the dark green of the solemn pines; the musical ripple of the water all appeal powerfully to the sensibilities and awake the good, that no matter how dormant is to be found in the heart of every man, while to one already living in unison with nature must come actual inspiration, and he readily understands why the Master went up into the mountain to pray.

I once inquired of a pioneer, a man of much more than ordinary mentality, and who had spent some thirty years or more in or about the mountains, pursuing the various occupations of miner, rancher and large sheepman, how it was possible to account for the unusual intelligence and mental development of many of the "old timers" of Montana. After a moment's reflection, with a glance toward the mountain range that bounded his ranch, he replied, "I have often asked myself the same question, and I can only account for it by the elevating effect of these grand old mountains upon the mind of men." He had voiced my own conclusion formed long before.

The most desirable locations for residence purposes are in close proximity to the mountains, whereby one not only secures a more equable temperature throughout the year, but is able to more easily utilize the waters of streams originating among the hills; with such streams it is seldom needful to provide reservoirs or dams. The compact banks of snow, accumulated from the winter storms, furnish by their gradual melting, under the rays of the hot sun of June and July, a regular water supply at the season when the need is the greatest.

Ditches that carry water sufficient for a half dozen farms, of say 1000 acres, as a rule can be constructed for from \$2,000 to \$5,000 in good ground, the cost averaging about \$5.00 per acre of the lands to be irrigated. Except in rock work or in crossing ravines, the work is practically accomplished by means of the plow, the ditcher or the scraper, and little actual shovel work is necessary.

Machinery that has accomplished such wonders in all directions, has done its part towards rendering easy the work of the engineer in the construction of ditches and canals. The investment once made, as a rule is a permanent one. The careful engineer will conduct the water from point to point with as little fall as is possible, so as to avoid cutting the soil by the abnormal rush of water attendant upon too rapid a descent.

The estimate of a conservative engineer placed the cost of conducting water upon the great plateau of the Missouri in Northern Montana at from \$5.00 to \$8.00 per acre, not only on isolated tracts but on areas running into millions of acres. The need of irrigation will not average over twice per season.

Aside from the application of moisture to growing crops, it is also a fertilizer of no mean quality, acting as a solvent to release the chemical properties of the manures. The excessive



14,213 FEET OF LOGS HAULED BY KENDALL BROS.

(See Ray's Article.)

hardness of the soil from drought in the autumn not infrequently prevents the use of the plow by the Eastern farmer; the rancher employing irrigation, finding his acres too much baked, has only to apply water until the softened soil responds in the happiest manner to the use of both plow and cultivator.

A characteristic of grain grown under irrigation is that the development of straw does not interfere with the production of grain or seed, but both are matured simultaneously. How often have we heard the expression in the East, "the grain will not amount to much, the straw is too rank," or "the straw is not so rank and we can reasonably expect a heavy crop of grain." When grain begins to head, the application of water multiplies the grain cells and also increases the size of the plant. The office of the moisture, when grain is undergoing the process of filling, is to plumb the kernels and add to their weight from 25 per cent. to 50 per cent.; grain grown by irrigation is never sold by the bushel but by the pound. There would be no justice in selling a bushel of oats, the standard weight of which is 32 lbs. for the price of 32 lbs. when it is more likely to weigh 40 lbs. to 42 lbs. or sometimes 48 lbs. to the struck bushel. Nor is this increase confined to cereals alone; the same is true of the abnormal development of grasses, of vegetables and of fruit.

Chemical analysis of hard spring fife wheat grown in Gallatin Co., Montana, compared with the best samples of Dakota number one hard, showed that the Montana grain contained

2 1-2 per cent. more gluten than the Dakota wheat, taking into consideration that the content of gluten in the Dakota sample was 14.37 per cent., and that of the Montana sample 16.87 per cent., it will be seen that the latter so far as the relative amount of gluten was concerned was 17 per cent. better than that grown in a non-irrigable country.

After conducting for fourteen years a nursery in the Mississippi valley, where we set as high as three quarters of a million of root-grafts per annum, I will here state, that never again would I be willing to undertake to conduct such a business in a section where irrigation could not be employed, and the same principles applicable to the production of trees for market obtain in orchard management. Seventy-five per cent. of the injury to fruit orchards and small fruit plantations, in the region lying west of the Atlantic States, north of the Ohio and east of the Mississippi rivers can be directly traced to a lack of moisture in the fall.

In sections where irrigation is practiced immediately prior to the advent of freezing weather, it is the custom to thoroughly soak the orchard soil, thus effectually preventing injury from root freezing. This renders it possible to grow much more tender varieties than can be propagated in the above-mentioned regions, thus securing a much superior quality of fruit.

The great stretch of country adjacent to the Rocky mountains offers the most favorable conditions to the home seeker. These conditions, however, have been so exaggerated and underestimated that one desiring correct information has had small opportunity to ascertain the plain unvarnished truth; to be sure there are many winter days when the mercury falls as low as in the latitude of Minnesota, but such weather is of short duration, being invariably broken by currents of warm air, commonly called "Chinooks," which rush in from the Pacific coast, and by their influence raise the temperature to spring heat, literally licking up the snow and absorbing the moisture.

An incident will illustrate; one December evening in 1892, the writer went into camp, near the "Snowey" range of Mountains, in Central Montana, a violent wind storm arose during the night, lasting the next day; this was followed by a considerable decline in temperature. The second night about eight inches of snow fell; for three days this remained intact. About nightfall the fourth day a "Chinook" wind began and within twenty-four hours the snow was "non est inventus," and incredible as it may seem there remained no appearance of moisture.

During the winter of '92 and '93, with the exception of two weeks of very severe weather, the mean average temperature of Montana was higher than that of St. Augustine, Fla.; remembering that this winter was the coldest of the past seventeen, it



A COWBOY RESIDENCE.

may be readily understood that this climate cannot be rigorous.

The period of rainfall is short, covering as a rule the months of May, June and July, and with the exception of light snow fall (heavier in the mountainous sections), the remainder of the year is usually dry, permitting the regular conduct of all farming operations, out-door labor and amusements; no floods or washouts, with their attendant train of discomfort and disaster to bring discouragement to the farmers and the citizens at large.

To the Eastern man, accustomed to the natural precipitation of moisture throughout the year, a long, dry season may seem somewhat objectionable.

Forming his opinions from the windows of a moving train, he views the vast sun-burned area stretching between the Eastern and Western sea board, and fails to understand the compensations offered by a climate where one need never add, "if it does not rain," in the formation of plans; what appears to the uninitiated as only parched herbage, "sere and brown," is in reality the choicest of forage containing in most condensed form all the elements of nutrition best adapted to the wants of the immense herds of cattle and bands of horses and sheep that find abundant subsistence in these great winter pastures, without the expense of hay harvest, and, with the exception of sheep, requiring no shelter from the inclemency of the weather, such as would be absolutely essential in Eastern States, yet making their appearance in the spring in quite as good order as the Eastern herds that forage in the fields for a living and are sheltered regularly.

There is perhaps no greater mistake, nor one harder to eradicate from the minds of Eastern men, than the erroneous impression that it is a misfortune to be dependent upon the artificial use of water to promote vegetation (provided the source of the water supply be abundant), and that a country practicing irrigation should be shunned.

A story told by Carter H. Harrison (and one of his very best) was of an old timer in Illinois, who had formerly lived in New Jersey. Being on the witness stand under oath, in an important law suit, he was asked the question as to his age, the reply to the question was, "thirty-five years." The prosecuting attorney, an old acquaintance, knowing him to be about 60 years of age, at the least, asked, "How long have you lived in Illinois?" "Thirty-five years," was the reply. "Where did you live before coming to Illinois?" "In New Jersey." "How long did you live there?" "Twenty-five years." "Well," said the attorney, "25 and 35 make 60 do they not; I should say you were 60 years old, how is that?" "Oh," was the ready reply, "the years that I spent in New Jersey were thrown away; I do not count them."

And so it is with the man who attempts to till the soil in a section of country wholly dependent upon rainfall for the growth of vegetation, the time spent is largely lost time, and an existence in the miasmatic States of the Mississippi Valley "don't count" to the man who has once dwelt within reach of the protecting shadows of the grand old Rockies.

What of the natural highways of Montana, over which hundreds of thousands of bushels of barley and oats found their way to the railways to be transported to the Eastern consumer in '93, and of the roads leading to the timbered mountain sides, from which the settler will supply his needs for lumber for buildings and fencing as well as fuel, or to the vast coal measures, that crop out on all the mountain ranges, providing warmth and comfort by an inexhaustible fuel supply. To this I would answer by first calling attention to the phenomenal drives made with Montana horses; when the fact was first brought to my attention that it was no uncommon thing for horses to cover 40, 45, 50, 75, or in emergencies even 100 miles in 24 hours, I naturally inferred the fast time made was owing to the superior constitution and make up of the mountain horse. While this was measurably true, much is due to the quality of the natural highways; an opinion confirmed by wheelmen, who, not infrequently, make from 100 to 115 miles per day, over roads as they come.

As a rule, the roads are natural gravel ways, hardened and impacted by millions of tons of freight, passed over them in ante-railway days; and also by the hoofs of countless herds and flocks that have traversed them on the way to the ranges and markets.



COWBOYS BRANDING CATTLE.

Here again the comparatively dry seasons, following the spring rains, is a potent factor in the preservation of good roads, which grow daily better by continued use; an item not to be despised or overlooked in the selection of a home.

Enough has already been said to convince the most skeptical that in Montana are to be found all the requirements of the practical agriculturist and stock raiser, and that only thrift, energy and ambition are needed to develop her vast and varied industries.

Montana has been called the "Silver State." The mountains are rich with paying ore, only waiting to be brought into near proximity to reduction works. This labor will demand armies of miners to open up this boundless source of wealth, and these in turn will demand other armies of food producers in the valleys to supply their wants, while the resources of the flocks and herds will be taxed for the same purpose. Already extensive woolen mills have been established within the State. These manufacturers, being on the ground, are enabled to secure their pick of the wool clip, said to be of the finest quality that is produced in the United States.

Nor is it to the agriculturist and miner, the stockman and capitalist alone that Montana appeals; the numberless hot springs, medicated by mineral deposits, scattered throughout the State, and the pure, ozonized air, furnish the invalid and weary brain worker with the very elixir of life, sun distilled, while the æsthetic lover of natural scenery, or enthusiastic geologist or angler and sportsman find each day new beauties unfolded to the eye, as he follows the course of wooded streams,

deep into lofty canyons, whose battlemented walls have been hewn by the waters, sculptured by the winds, painted by the lichens and dyed by the oxides; along such water ways a perfect tangle of berry bearing bushes may be found — red, yellow and black currants, gooseberries and raspberries, while clinging to the mountain side a little higher up grow service berries and huckle berries, the latter comprising two sorts, which are ripe from the middle of July until frost.

Fur bearing animals large and small, find their habitat among the rocks and caves, and where the canyons widen out into high mountain parks or astonish one by deep, cool lakes almost among the clouds, and half hidden by glades of evergreens, are to be found the haunts of elk and deer and whirring mountain grouse.

Space nor time do not permit to enumerate the wonders to be found by the specimen hunter in the way of fossil remains of prehistoric creatures. Whole ledges are filled with petrifications, while at other points rubies, sapphires and agatized woods reward the seeker; in fact, so varied and prolific are the attractions offered by Montana, that the rich man or the poor man alike have but to enter in, whether with the geologist's pick or the agriculturist's shovel, feeling perfectly assured that he cannot fail to unearth the treasure best suited to his needs.

#### OR IN OTHER WORDS, KEEP SAWING WOOD.

If you strike a thorn or rose,  
Keep a-goin'!

If it hails, or if it snows,  
Keep a-goin'!

'Tain't no use to sit an' whine  
When the fish ain't on your line;  
Bait your hook an' keep on tryin'!  
Keep a-goin'!

When the weather kills your crop,  
Keep a-goin'!

When you tumble from the top,  
Keep a-goin'!

S'pose you're out o' every dime?  
Gittin' broke ain't any crime:  
Tell the world you're feelin' prime?  
Keep a-goin'!

When it looks like all is up,  
Keep a-goin'!

Drain the sweetness from the cup,  
Keep a-goin'!

See the wild birds on the wing!  
Hear the bells that sweetly ring!  
When you feel like sighin'—sing!  
Keep a-goin'!

—FRANK L. STANTON in *Atlanta Constitution*.



## TRUE HISTORY OF THE "BLOOMER COSTUME."

BY A MEMBER OF MRS. BLOOMER'S FAMILY.



AMELIA BLOOMER.

I N January or February, 1851, an article appeared editorially in the *Seneca County Courier*, Seneca Falls, N. Y., on "Female Attire," in which the writer showed up the inconvenience, discomfort and unhealthfulness of woman's dress, and advocated a change to Turkish trousers and a skirt reaching to the knee, or a little below.

At this time Mrs. Bloomer was publishing a monthly paper, in Seneca Falls, "Devoted to the Interest of Women"—temperance and women's rights being the leading subjects. As

the editor of the *Courier* was opposed to *The Lily* on the women's rights question, this article of his gave Mrs. Bloomer an opportunity to score him one on having gone so far beyond her as to advocate women wearing trousers; and in her next issue she noticed him and his proposed style in a half serious, half playful article of some length. He took up the subject again the week following and expressed surprise that Mrs. Bloomer should treat so important a matter with levity. She replied to him more seriously than before, fully endorsing and approving his views on the subject of women's costumes.

About this time, and when the readers of *The Lily* and *Courier* were interested and excited over the discussion of the dress question, Elizabeth Smith Miller, daughter of Hon. Garrit Smith, of Peterboro, N. Y., appeared on the streets of Seneca Falls dressed in short skirt and full Turkish trousers. She was on a visit to her cousin, Elizabeth Cady Stanton, who was then a resident of Seneca Falls. Mrs. Miller had been wearing this costume, at home and abroad, some two or three months, though nothing had been said about it and no notice taken of it by the papers.

A few days after Mrs. Miller's arrival, Mrs. Stanton came out in a dress made in Mrs. Miller's style. She walked the streets in a skirt that came a little below the knees, and trousers of the same material—black satin. Having taken part in the discussion of the dress question, it seemed proper that Mrs.

Bloomer should practice as she preached, and as the *Courier* man advised, and so in a few days she too donned the new costume, and in the next issue of her paper announced that fact to her readers. At the outset she probably had no idea of fully adopting the costume—no thought of setting a fashion—no thought that her action would create an excitement throughout the civilized world and give to the style her name. This was all the work of the press. Mrs. B. stood amazed at the furore she had unwittingly caused. The *New York Tribune* was the first to notice the matter. Other papers caught it up and handed it about. "Bloomerism," "Bloomerites" and "Bloomers" were the headings of many an article, item and squib, and finally some one—she never knew to whom she was indebted for the honor—wrote of the "Bloomer costume," and the name has continued to cling to the short skirt and trousers, in spite of Mrs. Bloomer repeatedly disclaiming all right to it and giving Mrs. Miller as the originator, or at least the first to wear such dress in public. Although Mrs. Bloomer was the first to call attention to the dress through her paper, and one of the first to wear it, and in this way deserves the credit of it, it is not probable that either she or Mrs. Stanton would ever have donned the style had not Mrs. Miller come a visitor to Seneca Falls just at this time and when the matter of a change in woman's costume was being discussed by the papers of that village.

As soon as it became known that the editor of *The Lily* was wearing such dress, letters came to her from all over the country making inquiries about the dress and asking for patterns. Her subscription ran up amazingly, into thousands, and the good woman's rights doctrine was thus scattered from Maine to California and from Canada to Florida. Without such intent on her part she had gotten herself into a position from which she could not recede, if she had desired to do so. She therefore continued to wear the style on all occasions, at home and abroad, at church and on the lecture platform, at fashionable parties and in her business office. She found the dress comfortable, light, easy and convenient and well adapted to the needs of her busy life. She was pleased with it and had no desire to lay it aside, and so would not let ridicule or censure of the press move her. For six or eight years, so long as she continued in active life and until the papers had ceased writing squibs at her expense, she wore no other costume.

During this time she was, to some extent, in the lecture field, visiting and lecturing in all the principal cities of the North on temperance and women's suffrage, but at no time, on any occasion, alluding to her costume. She felt as much at ease, apparently, as if she had been arrayed in the fashionable drabble skirts. In all her travels she met with nothing dis-

agreeable or unpleasant, but was always treated with respect and attention by both press and people, wherever she appeared. The press gave flattering notices of her lectures. She felt that if the dress drew the crowds that came to hear her, it was well. They heard the message she brought them and it has borne abundant fruit.

*The Lily* had many contributions on the subject of dress so that question was for some time kept before its readers. Mrs. Stanton was a frequent contributor and ably defended the style. She was an enthusiastic admirer of it and often declared she would never wear any other. But after wearing it on all occasions for two or three years, she yielded to the pressure brought to bear upon her by her father and other friends, and returned to long skirts. Elizabeth Miller, after several years, again donned the prevailing style. Lucy Stone, of the *Woman's Journal*, adopted the short dress and wore it for several years, on the lecture platform and elsewhere, and was married in it, but she, too, with advancing years saw fit to return to long skirts.

The advocates of women's rights felt that the dress was drawing attention from what they considered of far greater importance, the question of woman's right to better education, to a wider field of employment, to better remuneration for her labor and to the ballot for the protection of her rights. In some minds the short dress and woman's rights were inseparably connected. With the reformers the dress was but an incident, and they were not willing to sacrifice greater questions to it. The enfranchisement of woman was the question of the hour. For it they labored and still labor.

For a time the "Bloomer costume" seemed to promise a quite general adoption, without any effort on the part of the wearers of it. Mrs. Bloomer was overrun with letters from women from all over the country begging for patterns and description of the dress. Woman seemed anxious to cast off the burthen of heavy skirts, and many for a time adopted the short skirt and trousers. But they could not bear up against the ridicule and caricature of the press, which in some instances assailed it unmercifully, and so they hugged the chains that bound them and continued the heavy dragging skirts.

An editor's reputed, as everybody knows,  
To go free into circuses and other kinds of shows.  
The ordinary mortal "puts down" fifty cents in "stuff,"  
The editor pays nothing, (but a two dollar puff.)  
GOOD ROADS (\$1.00 per year).

## EXTRACT FROM SPEECH OF GEN. ROY STONE

BEFORE THE BOARD OF FREEHOLDERS IN MORRIS COUNTY, N. J.

**I** CONGRATULATE you upon the good work which you have started in this county. You are pushing the county to the forefront by adopting at once a resolution to go to the full limit of your power in the building of stone roads.

And if you are able to take instruction from other counties, and particularly from counties outside your State, you will possibly take the lead of all the counties of your own State and be in the forefront of progress in the United States.

The question of good roads is being worked out differently in different places. The object of my work is to bring the results of the work in one section to the knowledge of those in other sections.

We find that there is a vast amount of road building going on in the United States, and the best roads that I have found are the cheapest roads. That is surprising, but it is encouraging. The building of roads began with an expenditure of \$10,000 per mile, and those roads to-day are not giving as much satisfaction as some of the roads built for \$2,000 per mile.

I should estimate the cost of building macadam roads in this country at from \$2,000 to \$2,500 per mile, but for that amount I think you could build excellent roads. And you will be able to build roads in this county without feeling the burden at all. Your county taxes will not be increased, because you will bring in enough foreign capital to increase the valuation of property as fast as you increase your taxation. The final result will be to diminish taxation. The result in the townships will be heavy taxes at first, as they have to pay one-third of the expenses down, or within a year or so, but they will get all this back in not having to repair the roads, which become county roads and are kept in repair by the county. The townships by paying say \$700 per mile will save \$50 per mile which they now pay annually for repairs — equal to a 7 per cent. investment.

Now as to methods of construction. Get your locations right first. It will be necessary for your engineer to lay out better locations for many of your roads. It would be folly to spend two or three thousand dollars on a section of road and then find out that it was in the wrong place, when finished.

And if an individual loses by being thrown off the highway or by having the road cut through his farm, the county will have the power to compensate him out of the county funds.

You are somewhat hampered by the law under which you are working, which compels you to build a road twelve feet wide in the middle of the way. That is a serious drawback,

but you can easily get the law amended. In a country district you don't need a road twelve feet wide. You need only a single track of stone road. You will do better with an earth road eight or nine feet wide and a single track macadam road alongside of it, or have a single track macadam in the middle and an earth road on each side of it. That is being done now in Michigan, North Carolina, Ohio and Georgia, and in Canandaigua, New York. They have built satisfactory roads with one track of macadam and a shoulder of earth on each side for \$900 per mile. An earth road is better than a stone road when it is good, but when they are side by side you have a good road all the time. And this will only cost you about half as much, and the cost of repairs will be much less than half.

The wear on a stone road is almost entirely in dry weather. The stone becomes loosened on the surface, and if one stone becomes loose the next one does also, and so on. The loose stone becomes crushed very soon and the dust is washed or blown away. If a stone road is not used in dry weather your repairs will be almost nothing for a good many years.

There was great apprehension, in the beginning, of trouble in passing teams on this road, but you won't experience any difficulty in that respect. The two tracks merge into each other, so that the junction cannot be seen; and, moreover, your earth road, never being used when it is wet, is always hard enough to turn out upon it, and it may be months before two teams will need to pass at the same place in the road; so it is never cut up by turning out.

Upon the question of the cost of these roads in this county, I should think, with the amount of surface stone I see about here, that you could build as cheaply as any section of the country, though you may have to bring material by rail from the trap rock hills in neighboring counties to surface the roads. I would put a good depth of common country stone, I should say about nine inches, all broken; and then about three inches of a better class of material on the surface. The difficulty with macadam roads in many places is that they are built of material that does not stand the wear. It wants a very uniform material for the surface, so that the road will wear down evenly and smoothly.

I would plough up the whole surface of the road, and on the side where you want the earth road remove all the stones and put most of the dirt on that side. Where you want the stone road, remove the dirt and roll it thoroughly and make it hard, laying tile drains if there are wet places. Then drop in three or four inches of broken stone and then three or four inches of finer stone, making it finer and finer, and place screenings on the top. The roads would be left in the contractors' hands for nine or ten months after building, so that they

can stand the test of a winter and spring ; and then he can fix up any bad places in the roads before turning them over to the county.

If you adopt this system you will be able probably to build 100 or 150 miles more of road for the same money, and the roads will give better satisfaction.

We do not know exactly the cost of keeping these roads in repair, as we have not yet had the experience upon this class of roads ; but for the first four or five years the cost would be trifling. There is no question but that it will be less than the cost of keeping earth roads in repair. I do not think that you will need to spend over \$30 per mile on repairing your roads for the next ten years.

If you adopt this system of roads people will want to come here and see roads that are built according to the most modern ideas, and find how they are liked and how the people stand the taxation. I am interested in having you adopt the best system, because your county is so located that I can use it as a show place to exhibit the best and cheapest roads and so promote road improvement all over the United States.



“ WORKING OVERTIME.”

(Something that the average road maker doesn't do.)

## WHY BOYS LEAVE HOME.



THERE are many reasons of course, but they nearly all may be summed up in the one homely expression of Josh Billings:

“A boy leaves home, usually, because his father bears too hard on the grindstone when he turns the crank.”

It is a well established axiom that all motion in nature follows the line of least resistance, and this is especially true of boys.

The writer once heard an argument by a learned college professor, who claimed that there were recorded

many instances where men had gone directly opposite to the line of least resistance, and in submitting to all sorts of persecution had attained the rather dubious distinction of being martyrs.

A thoughtful examination of any such case, however, will show that there was within the man an obstacle in the person of his conscience, which made it impossible for him to act in the direction supposed by *others* to be easiest.

A boy who has felt the hurt of hunger, longs to be placed where he may have enough to eat, and too often his ambition stops at his stomach. The boy whose physical wants have been well met, longs for other enjoyment than what he has. His father becomes in his eyes “the old man,” and his young heart is sometimes touched with pity at the lack of “the governor’s” ability to enjoy life.

To be sure he has to go through the trifling formality of asking the “old un” for money, but that doesn’t worry him. So commonplace an occupation as making money has no charms as compared with the society of the “boys.”

I never feel like blaming a boy for anything.

He is born; he can’t help that.

He has certain hereditary tendencies born in him, and he can’t help that.

Up to a certain age the wise parent holds him responsible for nothing. And then comes discipline and education. The

youngster of a few months reaches confidently after the moon, and yet doesn't seem at all disappointed at not being able to get it.

Instinct is responsible for very little, education for all else.

The ill-behaved child gets many a spanking which justly belongs to its parent.

"The boy stood on the burning deck." Why? Because he had confidence in his father.

The boy "runs away" from home because he lacks confidence in the "old man."

Who is to blame for this? Surely not the boy. Faith, or the want of it, is dependent on outside conditions.

In youth they sheltered me  
And I'll protect them now,

should be the watchword of every young man who has parents.

They may be homely and old-fashioned, they may not like pointed shoes or cigarettes, but don't forget that they knew enough to come in out of the rain at a time when you didn't.

Want of respect for parents stamps a man to his disadvantage, but this does not absolve the parents from the necessity of being respectable.

"Children have more need of *models* than of *critics*."

One of the highest aims that any man may have is to so conduct his life that when it stops his children will be truly sorry.



"IT GOES WITHOUT SAYING."

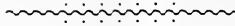


“LEAVES HAVE THEIR TIME TO FALL.”

AND THIS IS THE TIME.

Day of Year.	Day of Month.	Day of Week.	Length of Day.		TENTH ▲ October, 1894 ▲ MONTH
			H.	M.	
274	1	M.	11	45	British troops arrived in Boston, 1768.
275	2	Tu.	11	42	They were warmly received,
276	3	W.	11	38	but it's all right now,
277	4	Th.	11	35	and we are on visiting terms.
278	5	Fr.	11	33	Battle of the Thames, 1813.
279	6	Sa.	11	30	GOOD ROADS decided on, 1891.
280	7	S.	11	27	First Colonial Congress at New York, 1765.
281	8	M.	11	25	The next was at Philadelphia, 1774.
282	9	Tu.	11	22	Once in nine years is often enough ;
283	10	W.	11	19	ten would be better,
284	11	Th.	11	16	and there should be a "time limit."
285	12	Fr.	11	13	Columbus discovered San Salvador, 1492.
286	13	Sa.	11	11	We are glad he did. [L. A. W.
287	14	S.	11	8	The Indians would never have had an
288	15	M.	11	5	And they didn't need roads.
289	16	Tu.	11	2	President Lincoln called for 300,000 men,
290	17	W.	10	59	Those were rough times. [1863.
291	18	Th.	10	57	The League wasn't born then. [1781.
292	19	Fr.	10	54	Surrender of Cornwallis and 7,000 troops,
293	20	Sa.	10	51	Florida was purchased of Spain, 1820 ;
294	21	S.	10	49	it is now purchased every winter by
295	22	M.	10	46	northern visitors,
296	23	Tu.	10	43	who leave it where it is and go home in
297	24	W.	10	40	the spring.
298	25	Th.	10	38	Tobasco, in Mexico, bombarded by Com.
299	26	Fr.	10	35	It was a hot fight. [Perry, 1846.
300	27	Sa.	10	32	GOOD ROADS for November
301	28	S.	10	30	will be a "dandy."
302	29	M.	10	28	Have you sent in your name ?
303	30	Tu.	10	25	The price is \$1.00 per year.
304	31	W.	10	22	The address, Boston.

# Opening of a Chestnut Burr.



YOU CAN ALWAYS TELL WHAT  
IS THE MATTER WITH

A GOAT.

"Come here my little son, an' I see,  
What God has given you and me:  
A tiny baby, fair and sweet,  
With dimpled hands and cunning feet.  
It won't be long ere he can play  
And frolic with you every day."

But Johnnie sadly shook his head—  
The tear-drops fell upon his coat—  
Then sobbing audibly he said:  
"I'd rather had a billy goat."  
—*Square and Compass.*

FULLER WAS A NATURAL  
POLITICIAN.

Thomas Fuller defined "policy" to consist in serving God in such a manner as not to offend the devil.

LET US HOPE THAT IT WAS A  
GOOD MATCH.

Philanthropist—"Why are you crying so, my child?"

Little Girl—"Please, sir, me mudder sent me wid five cents fer to git bread wid, and I lost it in that there dark alley. I shall have a terrible thrashin'."

Philanthropist—"Well, well! my poor child, dry your tears. Here is a match. Perhaps you may be able to find it."

—*St. Louis Humorist.*

AND YET HE IS ALLOWED TO  
VOTE.

A tale-bearer is a lower order of creation than a tail-wearer.  
—*Ex.*

An exchange propounds the following question:

"If Bob Ingersoll insists that there is no hell, will he please state what becomes of a man that takes a paper for three or four years without paying for it and then tells the postmaster to inform the publisher he don't want it?"—*Hay (Cal.) Press.*

Such a man couldn't appreciate Hell if he should go there. And the publisher who would be a party to such a condition of things certainly need have no fear of post mortem fire, for he is too green to burn.

What's the matter with the GOOD ROADS' plan—\$1.00 per year *in advance*.

How doth the L. A. W.,  
Improve each country road,  
And help the busy farmer  
To double up his load.

HOW ABOUT THIS,  
GOV. FULLER?

While Lewis Sanctuary of Hinesburg, Vt., was returning home from Burlington the other day his horse sank into the mud and was soon almost lost to view. He took a rail from a fence, put it under the animal's head and thereby kept his head up until a farmer's team drew the horse to firm ground.—*Ex.*

## "A TALE OF TWO CITIES."

This represents the great bronze statue of William Penn, which Philadelphia is to put on the top of its new city hall.



This represents the statue that Chicago would probably have had made under the same circumstances.







JUDGE THAYER.

*Member of the National Central Road Committee.*

# GOOD ROADS.

Vol. 6.

November, 1894.

No. 5.

## IMPROVED METHODS WANTED.

**A** NOTHER world's record gone!  
And the subservient lightning snaps the news from one end of the world to the other.

What about it?

Well! An expensive and carefully trained horse on an expensive and carefully graded track has succeeded, under the pilotage of an expensive and carefully experienced driver, in going once around the track in one-fourth of a second less time than any previous c. t. h. had been able to do it.

GOOD ROADS wouldn't try to make out that it was not important—this record breaking—because maybe it is. But suppose Bill Jones was able to haul a load of pumpkins to town in one-half hour less time than ever before? Wouldn't the causes which made such a record possible be interesting? Because if Bill could do it, everybody else could, and sooner or later the price of pumpkin pie and other necessaries would show a corresponding decline in that town.

And if in *that* town, why not in every town?

Suppose some horse should succeed in going a mile as fast as a bicycle rider can do it. (An exceedingly remote possibility, by the way.) It would of course be interesting, *i. e.*, in the line of fun, but what doth it profit a horse to go a mile, even between the two ends of one short minute, if the road between the track and the barn where he lives is paved with various kinds of stuff through which the same horse couldn't go a mile in less than five minutes, and even then at the risk of spoiling the buggy?

The man who can "make two blades of grass grow where only one grew before" has got his little niche in the temple of fame all right: even if the fellow who takes the grass to market *does* get the pay for it. But the higher position—what we might call the top niche—the exalted place from which its occupant can pick chestnuts and throw them down on the head of the grass sharp—the *real* top—where what's his name said there was "always room," is reserved for the man who can discover some sort of a liquid which may be poured on to a soft, sandy road, and which will soak into the earth about a foot, then stop soaking and begin to harden, until that upper stratum is a good, solid, waterproof surface, all in one piece and free from cracks or cussedness.

There is, no doubt, at this moment a large number of inventors who are engaged in the very interesting occupation

of making, for instance, a clock that will run a hundred years with once winding, or, it may be, some labor-saving (?) machine which takes more men to run it than could do the same work without it.

Why can't some of this talent, which our country exudes at every pore, be prevailed upon to take up the self-healing road question, and not only earn the gratitude of "millions yet unborn," but also earn something of a much more getatable nature.

Another very profitable field in which the wandering human mind might well look for a job, is street sprinkling. You know how they do it now.

Why should a street be sprinkled several times a day instead of once a year?

GOOD ROADS has tried the experiment of using a solution of water and glycerine, and a section of dusty street was kept moist for weeks last summer with but once sprinkling, but the objection to this is its expense. Cannot something be concocted which would do the business for less money?

Something of that sort would be desirable for sprinkling railroads, and in that case the problem is a still easier one, owing to the fact that the dust once "laid" is not constantly being ground up by the action of wheels as on the wagon road.

The average inventor doesn't see anything in the road to attract him, but let him reconsider. There is to-day a great opportunity for profitable work on the roads and pavements. Not alone the everyday practical work of making roads, that of course is most important of all, but experimental work to the end that roads and wagons may be better adapted to each other than at present.

One thing especially needs looking after. We believe that between the future wagon and the future road there must be interposed something of an elastic nature. The pounding of a solid metal tire upon the solid surface of a stone road is not the best thing that we shall ever see. Of course it is a million times preferable to mud, and we may consider it a very desirable thing to work for, because it is the best thing we know, and probably is the best thing the present generation will see extensively used.

Then it may be that the stone road and an elastic wagon tire will constitute the proper combination of the future. Much is being done in that direction now and with a very promising outlook.

Let the ninety and nine keep at work as they are, in the building of roads on the most approved plans, and the process of evolution, under the persistent perseverance of the one hundredth man, will in time produce a road and vehicle which will so harmonize with each other that it will no longer be a case of the destroyer and the destroyed.



## DOWN THE FLORIDA EAST COAST.

BY F. W. HAWTHORNE.



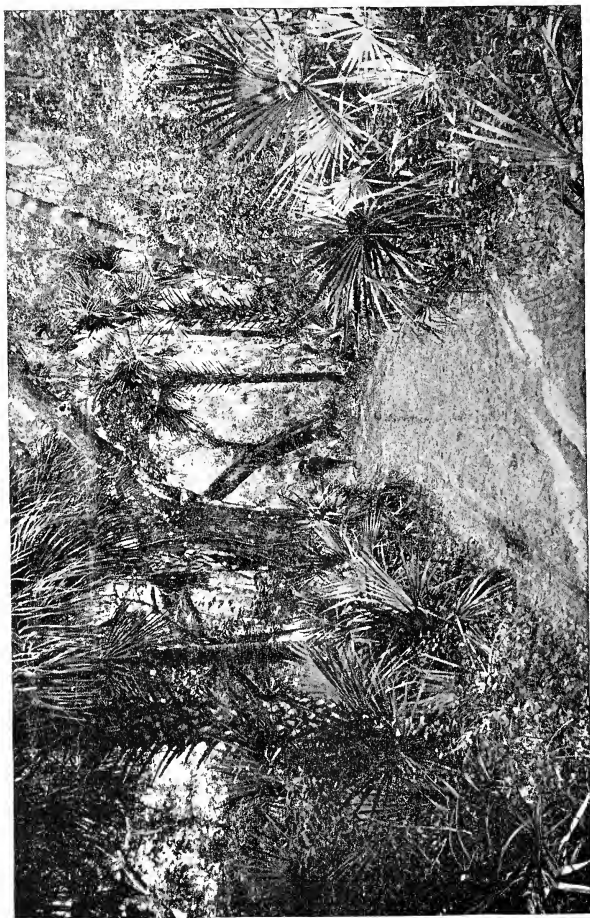
F. W. HAWTHORNE.

As a general thing the soil of eastern and peninsular Florida is sandy, and in consequence the streets in the smaller towns, the suburban drives and the country thoroughfares ("dirt roads" the country-folk call them) are heavy and unsuited to rapid locomotion of any kind. But there are compensating advantages, too, for the face of the country is almost flat, ledges or rock formations of any kind are extremely rare, and the soil is easily worked. So road building is cheap.

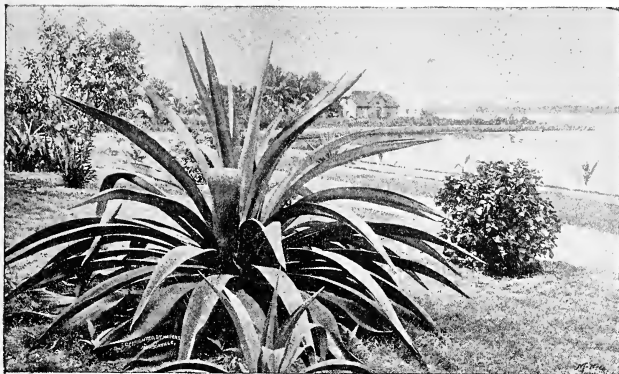
And the cities and larger towns are rapidly taking advantage of these natural conditions so favorable to good roads. On the low, flat islands lying near the mouth of the St. Johns River, there are still many millions of bushels of oyster shells, although two or three generations of men have been digging away at the deposits; while up and down the East Coast—from the mouth of the St. Johns to the waters of Biscayue Bay, a distance of over four hundred miles—the shell heaps of a prehistoric people provide an inexhaustible supply of one of the best materials known for the making of good roads.

In the region of Gainesville, near the centre of the State, there are deposits of a peculiar limestone which crushes easily, and which, when it has assimilated with the sand of the roadways by exposure to rain and sun, makes a smooth, hard surface most excellent alike for riding, driving or wheeling, and very durable.

Along the shores of Black Creek, one of the many navigable tributaries of the St. Johns River, there are thousands of acres of marl which, upon exposure to the elements, hardens and becomes as compact and durable as stone. It can be handled with shovels as easily as sand, and immense quantities of it are now being brought down the creek on lighters and scows, and being utilized for paving purposes in Jacksonville and other



A ROAD SCENE IN NEW SMYRNA, FLA.



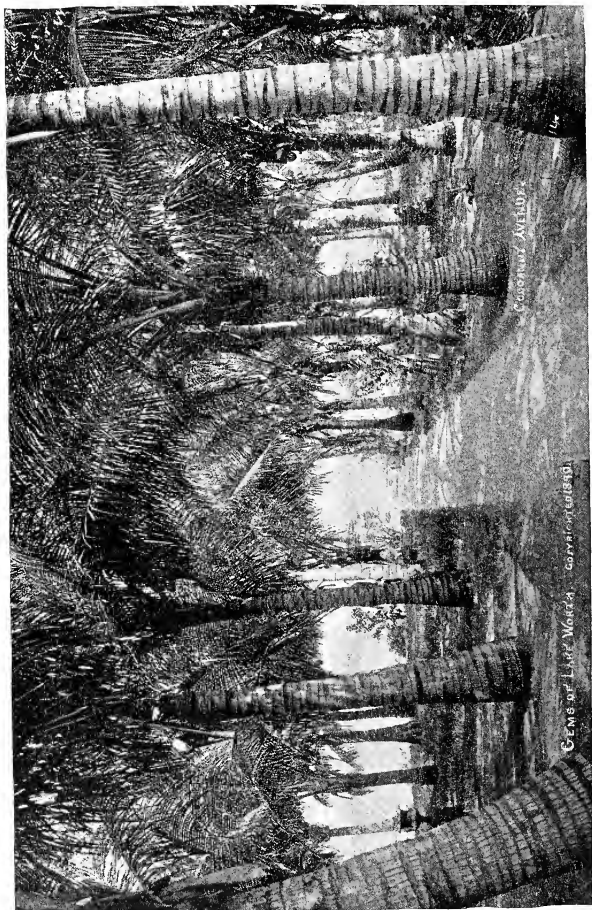
A FLORIDA CENTURY PLANT.

places in the State. At one point on Black Creek, a high knoll or promontory rises abruptly from the bank and is composed almost wholly of this peculiar marl; for ages past the action of the rain and the sun has so exposed the side of it next to the water, that its surface is almost perpendicular and is as hard as flint. The height above the level of the creek is about eighty feet, and the water beside it is of an unknown depth—so deep that the lines of the local water-men have never yet reached its bottom.

The city of Jacksonville, the northern terminus of the Jacksonville, St. Augustine and Indian River Railway, and the *entrepot* of the State of Florida, is making extensive use of shell, Gainesville rock and Black-Creek marl in the improvement of the streets and outlying drives, while for paving, the best vitrified brick is being employed. The work is going forward rapidly, and by the beginning of the summer of 1895 the metropolis will have nearly thirty miles of paved streets and smooth, hard drives. The municipal authorities have abandoned entirely the use of cypress blocks for paving, its short life making repairs and relaying too frequent and too expensive.

It is estimated that there are fully five hundred wheels of all sorts owned in Jacksonville and in daily use there, and it is one of the most noted points in the South for fine horses and beautiful private and public turnouts.

As the train pauses for a minute or two on the graceful iron railway bridge of the East Coast Line, the traveler gets the



COCONUT AVENUE, LAKE WORTH, FLA.

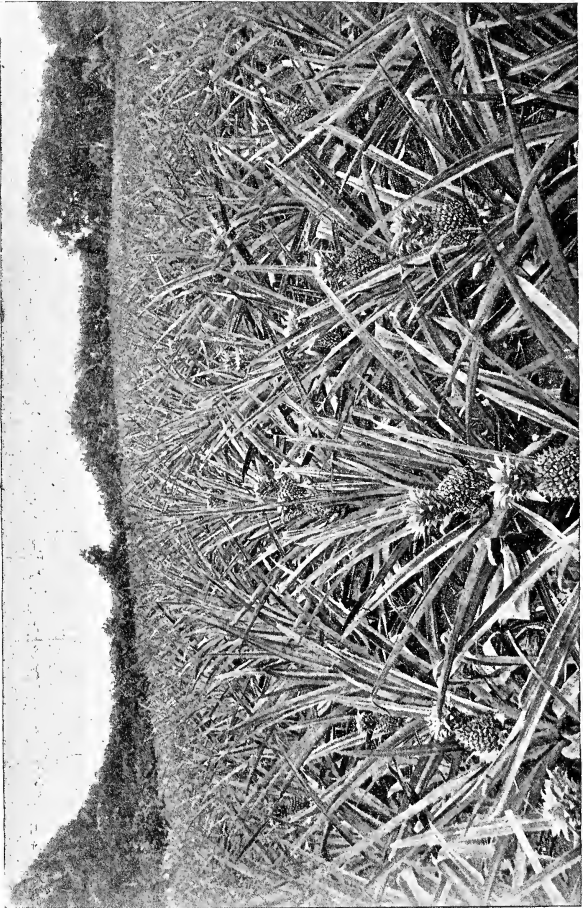


THE "FRONT DOOR" OF HOTEL PONCE DE LEON, ST. AUGUSTINE, FLA.

finest view of Jacksonville to be had at any point on the river. The city lies in a broad bend of the St. Johns, where it sweeps abruptly around a point, changing its course from north to east. Jacksonville's water-front is nearly five miles in extent, the greater portion of its business area bordering this crescent. One dislikes to leave this beautiful picture of a busy, throbbing city, washed by the waters of the placid St. Johns, glinting in the warm sunlight of a January morning; but this is only a foretaste of the feast. The real pictures lie beyond—hung in most effective succession from the quaint old city of the Spaniards far down the famous East Coast country to where the peninsula loses itself amid the coral isles in the confusion of the blending waters of ocean and gulf.

A wheelman would hardly be in his element in the country between Jacksonville and St. Augustine, and a carriage drive could not be taken without some drawbacks and inconveniences. Yet time was when this stretch of thirty-eight miles was traversed by a fairly good stage road, on the direct route from Tallahassee, the capital, to old Fort Marion, and in "the good old days before the war" this was accounted one of the finest highways in the State. Traces of the ancient roadway may be seen there now, but the most ordinary "dirt roads" of the country are probably superior to what it was in its palmiest days.

Nowadays we glide from the metropolis to the Ancient City in sixty minutes in a luxurious parlor car, alighting at an imposing railway station, from which broad avenues of the



PINEAPPLE PLANTATION, EDEN, FLA.

smoothest asphalt, at once the delight of the Jehu and the glory of the wheelman, lead up to the heart of the city—to the Alameda, a bit of old Spain reproduced in the palatial Hotel Ponce de Leon, the Alcazar, the Cordova and other stately structures, to the sea-wall, along which lovers loiter—the picturesque sort, high born, well bred and finely groomed—and barefoot boys lie lazily watching their “bobs” for the nibble of a trout or bass; to the quaint cathedral; to the narrow, crooked streets from across whose low balconies the Castilian lover in the old days could kiss the hand of his *senorita*; to old Fort Marion, bearing easily the burden of its three hundred years; and finally to St. Francis Barracks and to Alicia Hospital, where a charity as unostentatious as it is broad and beneficent is dispensed unsparingly to Christian and heathen alike.

It is a marvellous city—a bit of the Old World lifted over into the New; the people, the pastimes, the gaiety of northern Newport deposited in a garden of the semi-tropics. All the world knows St. Augustine, and how one man has transformed it into a matchless winter resort, at once stately in its architecture and faultless in its adornment, while still preserving the most picturesque features of the oldest city in the United States. It was ten years ago that Henry M. Flagler looked upon it and learned to love it, and then lavished his wealth upon it; and the many thousands of health and pleasure seekers from all quarters of the globe, who now make annual pilgrimages to it, all breathe words of admiration for him who conceived it, and of thankfulness that they are alive in his day and generation to enjoy it all.

From this scene of magnificence let us turn to the country again. If we would go down the famous East Coast, we may zigzag by rail to Palatka, and thence to Ormond-on-the-Halifax. As we spin westward across St. John's County, our track lies through stately forests of pine and cypress, crossed and recrossed by good country roads and dotted with thrifty farms. In the sparsely-peopled portions of it cattle raising is a profitable industry, and the crack of the cowboy's whip is a sound familiar to every ear. In almost all the farm yards there are long trellises for the support of scuppernong grape vines, which grow easily here without much attention. The scuppernong is a native of Florida where it flourishes in several varieties, but in no section more thriftily than in St. John's County. The white and the purple varieties are the most common, and both make an excellent wine. In and about the little settlement of Moultrie, which is nearer the coast and only about five miles from St. Augustine, there are many vineyards where the best varieties of table grapes are raised in large quantities for the northern markets, the “White Niagara” being the most prolific and profitable. These grapes ripen and are marketed late in



DRIVE AT ORMONDE-ON-THE-HALIFAX.



June and early in July, when the northern, eastern and western markets are practically barren of native fruits; the Florida grapes arrive there just in time to command high prices, the earliest shipments often bringing \$1.50 and \$2.00 per pound. The average price for the season of four or five weeks is about 15 cents. The fast freight service of the J., St. A. & I. R. Railway affords such quick transportation that the fruit always reaches market in good condition and brings the best prices. The industry is growing rapidly, and a wine company has recently been organized to utilize the surplus crop.

From Palatka the course is southwest to Ormond in a line almost as straight as an arrow, and the scenery and industries along the route are much the same as those on the westward journey from St. Augustine. Ormond lies on both sides of the Halifax River, which is really a long estuary fed by the waters of the Atlantic and running parallel with it. Along the river the scenery is beautiful, the shores being bordered by luxuriant growths of palms, palmettos, oleanders and magnolias, and the water generally as smooth as a mill pond. A long bridge connects the east with the west portion of the town, and from the latter, street cars run across the narrow peninsula to the sea. There are fine, hard, shell roads all about both portions of the village, and this makes driving and riding popular diversions for the guests of the Hotel Ormond, who number many thousands from December to May. Wheeling is common, too, both on the shell roads and on the beach, for the latter is as hard as a floor and at low water nearly a hundred feet wide.

To mention surf bathing in mid-winter may make a Northerner shiver, but here at Ormond Beach, as well as at other East Coast resorts, a not uncommon sight in January is scores of men, women and children in gaily colored costumes disporting themselves upon the sand and in the surf, for the temperature of the ocean is often higher than that of the atmosphere. A register of 72 to 78 degrees is the average for January and February.

We may go by rail down the river to Daytona, drive there through the picturesque hammock, or skim the surface of the Halifax in sailboat or launch. It is a clean, well-kept, thrifty-looking town, the green lawns contrasting prettily with the white-shelled streets. There are many bicycles owned in Daytona, and in the winter season here the cottage and hotel population swells the number of the wheels close up to a hundred. Passengers on the trains that pass through Daytona never fail to note the young men and women, in *fin de siècle* wheeling costumes, who come spinning down the avenue to get the morning newspapers and the mail, and then loiter about the station till the mild excitement of "meeting the train" has passed off.

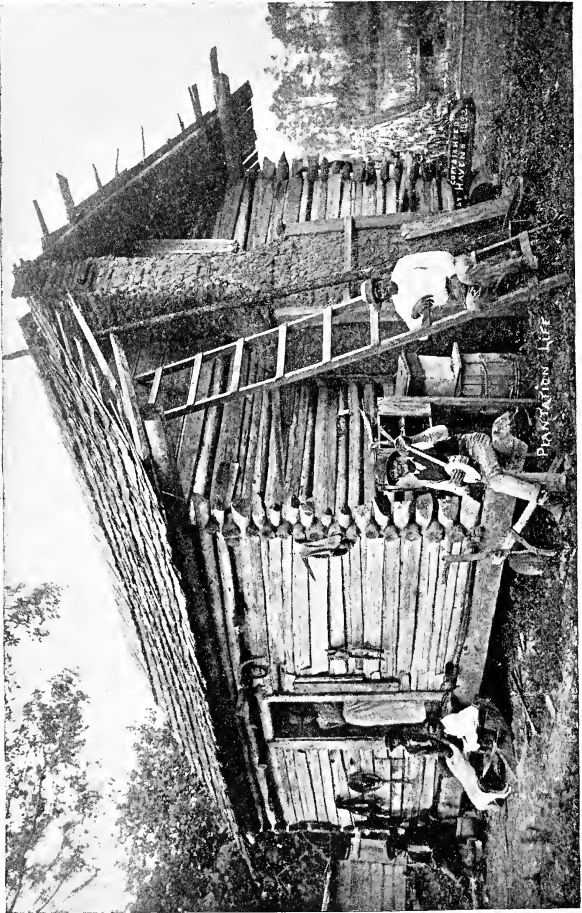


"LOVERS' RETREAT," ROCKLEDGE, FLA.

At New Smyrna the traveler may tarry to see the town and then drive out to the ruins of the old sugar mill, for many years supposed to have been built by Turnbull and his colony of Minorcans, in 1767, but now believed by many antiquarians to be the remains of an old Spanish chapel and mission erected by men who had accompanied Columbus on his second voyage to this country in 1496.

A few miles south of here the railway skirts the upper waters of the far-famed Indian River for a distance of nearly twelve miles, and as we approach Titusville we get excellent views of it—looking at this point much like a great inland sea. Like the Halifax and the Hillsborough above it, the Indian River is not, strictly speaking, a river at all. It is a great salt-water sound, from a mile to five miles in width, and paralleling the sea for a distance of over one hundred and fifty miles. A narrow peninsula separates it from the ocean, and in this there are several inlets admitting the passage of light-draft boats. The river traverses a most picturesque portion of the semi-tropics, where the foliage, the bloom and the fruits give a warm coloring to the scenery, and makes the air heavy with an invigorating fragrance. All the towns along its banks are great resorts for tourists in winter-time—Titusville, Cocoa, Rock Ledge, Melbourne, Fort Pierce and Jensen all being provided with fine hotels. The quiet loveliness of this placid river has inspired one of its visitors to call it “a streak of silver sea,” and in a letter after his first visit he thus describes it:

“It is this glittering chain of linked bays and coves and sunny sounds, this sun-kissed line of sapphire waters, that make the Indian River country the Riviera of America. It is this ‘streak of silver sea’ that lends its ever-changing loveliness to the palm-clad shores, and gives its benison of beauty to the ever present blessing of its balmy air. It is this ‘streak of silver sea,’ reclining in the rosy arms of an ever-youthful June, decked in her robe of flowers and emerald leaves and her cap of sunny skies, that makes the Indian River country a poem of pleasure. It is this glad marriage of land and water that makes it the paradise it is. And the vision of this new and better Riviera of America, perfected by the toiling hands of men and further beautified by woman’s presence, that I see before me now. The pillars that shall support this completed paradise are already being set in the ground. They are men and women of intelligence and culture coming from the North and from the West. In my vision I see this ‘streak of silver sea,’ garlanded on either side with homes where wealth and its heritage of beauty live, with Moorish mansions and tasteful cottages, with new and grander Ponce de Leons with their lawn-gardens extending from river to ocean, with villages and their country club-houses, where recreation shall mean



"There was an old darkey  
And his name was Uncle Ned,"

AND THIS SHOWS HIS FLORIDA RESIDENCE.

re-creation and not be another name for its idle lounging, and where the arts taught shall be homo-culture as well as horticulture. . . . I see before me on this highway of the seas, on this pathway of smiling waters, a new and a better carnival of Venice, with the rising of every-sun."

If the Indian River sets the poetic traveler to dreaming, then what shall be said of Lake Worth, that paradise of the semi-tropics lying only a few miles south of it? Over a decade ago its surpassing beauties and the peculiar charm of its climate drew to it men of wealth and leisure, whose magnificent winter villas began to fulfil this poetic prophecy even before it was made, and the extension of the Flagler Railroad to the lake, and the building of the Hotel Royal Poinciana are influences which are fast making the vision a reality.

Lake Worth has been called "the plump little sister of the Indian River," and in point of fact it is really only another link in the chain of East Coast estuaries. It is twenty-two miles in length, and has an average width of about a mile. Its waters are often only four and one-half or five feet deep, and in other places you can pay out from eight to ten fathoms of line perpendicularly before striking the hard coquina bottom. The peninsula which separates it from the sea is generally about half a mile in width. At Palm Beach, about midway of the lake on its east shore, there are many beautiful winter villas, bordered by a succession of sea walls nearly four miles in length. These villa sites stretch from east to west, from sea to lake, and in and around them are thousands of the most beautiful cocoanut palms that ever graced a scene in the tropics. And in their midst, like a diamond rising from a setting of emeralds, is the Royal Poinciana.

Here we must tarry. We are at the terminus of the railway. We are in a little oasis of the tropics set accidentally in the heart of the semi-tropics. Its scenery and its unequalled climate are almost beyond word-painting, and we shall be extremely lucky if their charms unchain and let us get away before the end of a month.

Lovely indeed the mimic works of art,  
But Nature's works far lovelier.

— *Cowper*.

## MASSACHUSETTS' GOVERNOR WANTS IMPROVED ROADS.



FREDERICK T. GREENHALGE,  
Governor of Massachusetts.

**B**ROAD, durable and convenient roads, the great and important avenues of internal commerce, are the natural outcome of advancing civilization. The development of street railroads and the desire for physical culture and pleasure, as demonstrated by the increasing interest in the use of the bicycle, by the cultivation of horsemanship and by the growing appreciation of rational pedestrianism, afford abundant evidence of the importance of good highways. Towns and counties are connected by roads, and all our citizens, regardless of classification, are free to enjoy the privi-

leges they offer. The highways are the property of no man or set of men, but on the contrary are open to all persons who see fit to use them in a decent and orderly manner.

Our public highways, so called, are main thoroughfares used not only locally, but to a large extent for through travel, and consequently the maintenance of them becomes a question of general interest. Such being the case, I believe the aim of the Commonwealth should be to contribute as liberally as possible to the construction and care of highways. Furthermore, it is important that we should constantly make progress in the method of building roads, not only for the sake of better State highways, but also for the purpose of giving advice and instruction to county and municipal road surveyors.

At present there appears to be a great waste of energy and substance in patching up road beds. The tendency in most towns is to expend their annual road appropriation in half repairing a large amount of highways, without ever constructing even a small amount of really first-class road.

We have already made a beginning in the direction indicated, and I consider it of great importance that the problem should be more carefully studied, and that such legislation shall be enacted as will contribute to a broader and more comprehensive development of all of our public highways.

## VENEZIA.

BY "LE BERT."

A VALUABLE HINT TO BICYCLE INVENTORS



DR. GEO. TREBEL.

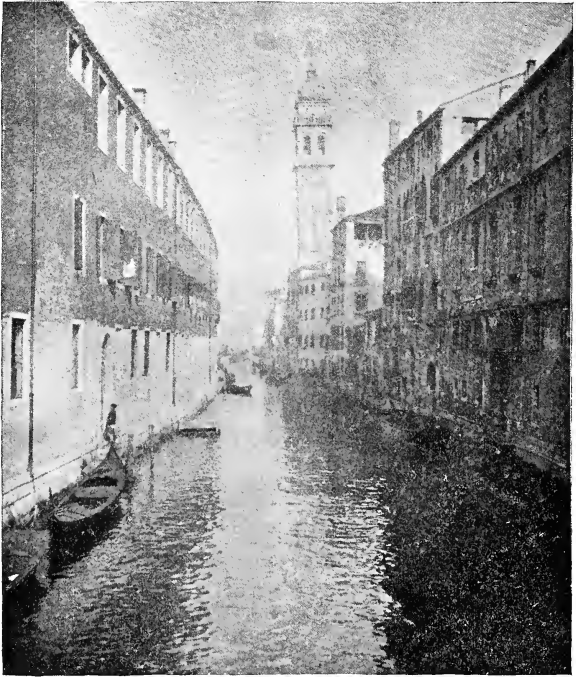
THERE is at least one place on this fair globe where such an idea as dirt roads would be laughed and jeered at. In fact, you could not give away copies of this magazine for waste paper.\* At the same time this locality boasts of the finest roads of the world. I am speaking of Venice, the queen city of Italy, and the cynosure of centuries. As you well know, Venice is situated on the Adriatic Sea, along the east coast of Italy. The sea forms a bay at this point and is subdivided into numerous small islands, forming a sort of delta. These islands are of irregular shape, and most of them are

about the size of two or three of our blocks. Upon these islands is built the City of Venice, and as a consequence her streets are canals which extend from doorstep to doorstep. Here we have then the ideal street, which is smooth, without dust and always in repair. Of course locomotion is restricted to boats, but these can be varied as to style so as to satisfy the most fastidious taste.

Since the water bicycle has not proven a glowing success as yet, we find no such vehicles here; but it might be well for inventors of such machines to turn their attention in that direction, as there is a large field for experiment and profit. Probably tandems would meet with greater success than bicycles, as the lordly Venetian has an eye to profit and would sacrifice pleasure to gain. A tandem, however, would fill the bill, as he could ferry passengers along at a pleasant gait and make a little pocket money besides.

There is an oddity and peculiar charm about the city of Venice which strikes the new comer at once, and, if he be a student of history will vividly recall to his mind historical facts

\* We dislike to believe this last statement, and must ask the doctor to either prove it or apologize.—ED.



A STREET WHICH NEVER NEEDS SPRINKLING.

of the dark ages which have made Venice immortal.

The chief of the hundred or more Venetian islands is the *Isola de Rialto* (island of the deep stream), which also gives its name to the famous bridge, the *Rialto*. The Grand Canal winds through the city in a double curve, dividing it into two unequal parts and is the main thoroughfare—a marine “Broadway.” There are 146 smaller canals, or *rii*, which form the highways and byways of this interesting city. There are, indeed, streets, properly so called, and by means of these, together with the narrow paths along the banks of canals and the 378 bridges, one can walk from one end of Venice to the other, if he does not lose his way; but for all ordinary purposes





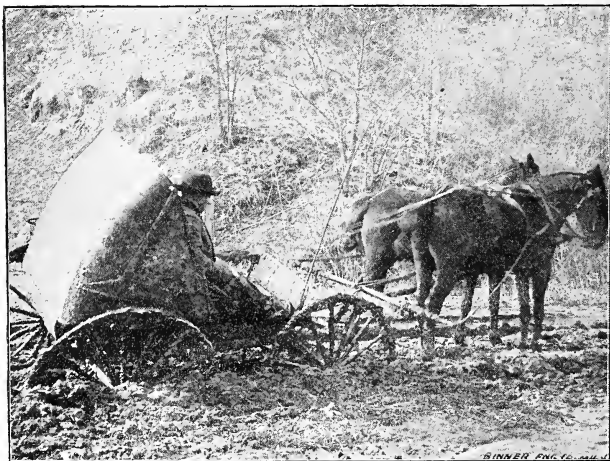
A VENEZIAN STREET CORNER.

of travel and traffic the canal is the highway and the gondola is the vehicle.

Visitors to the World's Fair last year obtained a fair idea of this strange craft—the gondola. It is a long, narrow boat with both ends turned up, like the old "turnip" skate, the central part of the boat being covered after the fashion of a swell coupe. The gondolier stands at the stern of the boat and propels it with a single long oar, to which he imparts a twisting motion together with a slight sweep. The effect upon the water is similar to that produced by a screw, and as a result the boat is propelled quite rapidly. These gondoliers are a caste by themselves, the craft being transmitted from father to son. They are swarthy, robust-built specimens of humanity, ever polite and accommodating and always looking for a tip. This latter tip is, in fact, their main support, as they are usually employed by the day at a not very munificent wage.

This is the proper way to see Venice: Hire a gondola by the day, and, if your pocketbook allow it, a guide, and as you sit in your gondola, propelled in that sleepy, soothing way, which is characteristic of no other craft, you may listen to the

soft voice of the guide as he points out the places of interest and history. You may perhaps fall into a day dream and imagine yourself back to the reigns of the cruel *Doges* and the *Council of Ten*; you may dream of the *art* which was born and reared in Venice, and the men who made her history famous. And if you are a wheelman, you will envy the Venetian for his gondola and for his beautiful streets.



THIS LAST CUT IS AMERICAN RATHER THAN VENEZIAN.

[It occurs to us that if the style of street which prevails in Venice is really a good thing, as Dr. Trebel seems to think, and Americans desire to adopt that style, there are places in this country where, in the spring, a little dredging would provide us with the regular Venetian streets. In fact a good, broad-tired gondola would run here in some places *without* the dredging.—E.D.]

## FRONTISPIECE.

JUDGE E. H. THAYER, editor and chief proprietor of the *Clinton (Iowa) Morning Age*, was born at Windham, Maine, Nov. 27, 1832, educated in that State, attended the district school at Orno, graduating from the East Corinth Academy in 1850. That year he started for Portland, Oregon, although at that time Greeley had not given young men that excellent advice "to buy a Hoe press and go West." At Albany he took passage on a canal boat for Buffalo, thence by lake boat to Cleveland, where he was taken sick, preventing his continuing his journey.

He remained in Cleveland three years reading law in the office of Bolton, Kelley & Griswold, attending lectures in the Medical College, and doing local work on the *Herald* and *Plain Dealer*, newspapers of that city. While in Cleveland the subject of this sketch learned short hand writing, being one of the very few persons in the country who at that time was able to report speeches verbatim. In the political campaign of 1852 he reported speeches made by Stephen A. Douglas, Lewis Cass, Horace Greeley, Sam Houston and other distinguished gentlemen. He reported the speech of General Scott which was made in that city, in which occurred the noted phrases "sweet German accent" and "rich Irish brogue." He accompanied the party that escorted General Scott to the Blue Lick Springs, reporting the speeches made on the route of that celebrated chieftain. He also reported several speeches made by Louis Kossuth, the Hungarian patriot.

In the spring of 1853, Mr. Thayer was admitted to the bar, passing the very thorough examination at that time made imperative by law, his certificate authorizing him to practice his profession in all the courts of the State. In May of that year he started further West, spending a week or two in Chicago, but not settling there because he thought the future prospects of that city were not up to his notions of what western towns were destined to become. By railroad he went to Freeport, Illinois, thence by stage to Savannah, on the Mississippi River, and down the river by boat to Muscatine, Iowa, where he commenced the practice of law. In 1854 he was elected county attorney on the Democratic ticket. In 1856 he was elected county judge of Muscatine County, and re-elected in 1858, both times as a Democrat. In 1858 he married Miss Delia E. Payne, of Westport, New York, who during their 36 years of married life has been a most valuable helpmate to him. In 1860 he was elected by the Democratic State Convention a delegate to the Charleston convention, being made the Iowa member of the

Committee on Permanent Organization, before which committee the first fight was made between the Douglas and Breckenridge factions. In that convention Judge Thayer voted 56 times for Stephen A. Douglas for candidate as president. The convention, without selecting a candidate, adjourned to Baltimore, where on the first ballot Judge Douglas was placed in nomination. In 1862 Judge Thayer was the Democratic candidate for Congress, but was defeated by Hiram Price.

During his residence in Muscatine, Judge Thayer was engaged in the newspaper business, and in 1868 he moved to Clinton, where he established *The Age*, which paper he has since continued to edit and manage. He at once took a prominent part in advocating the construction of railroads, was director in several railroad companies, president of the Iowa Southwestern Road, building a portion of that road and then operating it. He has been active through his paper in urging capital to establish manufactures in Iowa, has been a leader in championing the educational interests of the State, a persistent advocate of

#### GOOD ROADS,

his work in that direction running through a period of twenty years. He has made the beet sugar industry a study and is a firm believer in the practicability of growing sugar beet and manufacturing beet sugar in Iowa.

In 1875 Judge Thayer was elected a member of the lower house of the general assembly of Iowa, and the following year he was appointed by Governor Kirkwood, a trustee of the State Normal School, assisting in the establishment of that institution, holding the office of president of the board for several years, resigning in 1885 to accept the office of postmaster of Clinton, which, unsolicited, was tendered him by President Cleveland. In 1876 he was chosen a delegate to the Democratic National Convention which met at St. Louis, taking an active part in securing the nomination of Samuel Tilden. In 1884 he was elected delegate at large to the Democratic National Convention held at Chicago, was selected as the Iowa member of the platform committee and did yeoman service in formulating the tariff plank.

Besides his active advocacy of good roads in the *Daily Age*, he inaugurated a movement for a *good roads convention*, which met at Des Moines in August, 1892. This was one of the largest assemblies, outside of political gatherings, ever held in the State; every county and nearly every city and town sending delegates. He was elected chairman of the convention, making an address upon the subject of good roads, and subsequently, when the permanent organization known as the "Iowa Road Improvement Association" was organized, he was elected the president, which position he holds at the present time.

In October, 1892, the first national convention to consider the subject of good roads met in Music Hall, Chicago. This convention, made successful by the untiring efforts of General Stone, was presided over by Judge Thayer, and subsequently, when the National League of Good Roads was organized, he was made chairman of the executive committee, which office he now holds. In January, 1893, he read a paper on "Good Roads" before a convention of the National League for Good Roads, held at Washington, D. C. In May, 1893, he addressed the Iowa Bankers' Association at their annual meeting, taking for his subject "Good Roads and How They Effect Our Financial Condition." In October, 1893, he delivered two addresses in Chicago; one before the American Bankers' Association, at their annual meeting, being assigned the subject, "The Construction of Good Roads as a Matter of Finance, and the other before the "Good Roads Congress of the World's Columbian Exposition," his topic being, "A New Departure!"

He is an earnest worker in behalf of "*Good Roads*," embracing every opportunity to publicly discuss the question, being firmly convinced that the outcome of the universal agitation of the subject will be the establishment of a general system of good road construction which will lead to the grandest results.

Gratitude is the memory of the heart.—*Massien*.

Jealousy is the homage that inferiority pays to merit.—*Mme. de Pusion*.

Do you appreciate the work the L. A. W. is doing for highway improvement?

## THE HOME BUILDING OF COUNTRY ROADS.

BY AN OLD ROADMASTER (D. W. LEWIS), SHERRUCK, N. Y.

**N**EW YORK STATE has beneficent road regulations under which her roads to-day are rapidly improving, and in many localities are getting to a standard of excellence unequalled by some cities where there are large sums of money annually expended. Witness Fifth Avenue drive in the City of New York, east of Central Park, and contrast it with even an average of country roads through the State.

The building and care of roads by the localities themselves, the right of abutting property owners to the centre line of the road, subject to an easement for public purposes, and the moral responsibility involved by such ownership, have important social aspects.

The making and care of a road under present local methods is founded upon road district patriotism. Its mechanism involves Godlike doing for others; while the slough holes, pit fall sluices and stone "jounces" from the stony heart of an unkempt road, epitomize practical infidelity. Broad ideas, willing hands, and love of one's neighbor as one's self are supplementary to good neighborhood road building; these given, needed appliances will be forthcoming, and the perfect road emerge from pre-existent imperfections. In short, spirit controls matter, and "what spirit ye are of" will determine the character of the roads in any locality.

If the spirit is for the road, then one of the first necessities is a good four-wheel road machine. These machines are usually bought by the districts themselves, in which case it is customary for three or more districts to club together for joint use and ownership. The pay for these machines is usually made in instalments covering from three to five years—the districts paying one-half of their assessments on account of their road machines, and working out the other half on the roads. In some instances the towns have bought the machines outright, which is not so desirable, however, as for the districts to own them.

It has been the custom for towns to build all bridges larger than a six-foot span, and for the town to supply plank and aid in building sluices requiring less than a six-foot span. Towns are now beginning to lay cast iron water service pipe for all sluices and supply them to the road districts for use. Such pipe is generally from 3-8 to 3-4 inch thick, which, imbedded in the ground, stands the weight of heavy loads, even in muddy going, and will last for all time. Being round they are less liable to catch the road scrapers when working the road, and

all annoyance and expense of rebuilding and replanking sluices is done away with and the road is at all times entirely smooth and comfortable. Such iron pipe in carload lots can be bought at from 1 1-8 to 1 1-4 cents per pound — making the cost of a 12-foot, 4-inch iron sluice \$2.67.

Width of road must depend upon conditions. Just wide enough and none to spare, and well taken care of, is better, but the road should be worked sufficiently wide so that teams are not compelled to travel in the same ruts in muddy weather, and should be so crowned and flatted in the centre as to avoid water running in the tracks. Keep runways on sides of roads open and iron sluice pipes clear, to prevent the road bed from washing out, and the road itself cleared from loose stone. Such a road once well formed needs but very little care to keep it in condition — *but that little is required.*

Put the teams on road building and road working cheerfully, for what they do saves double their labor to the team itself in the course of the year, and the man gets his pay for the work done, three or four times over in the lessened wear and tear of himself and of vehicles, and the distilling dew of the commendation of his brother man who passeth that way, repays it over again in the currency of the gods.

To remove rocks and such like obstructions, dynamite will be found very useful and cheap. Its use is simple *and with ordinary care not dangerous.* It costs but ten cents per pound. On dugways and sidehills use the road worker on the upper side only; drain the road bed with iron sluice pipe, at proper intervals, and leave the lower side for a path.

One day's working with Jack Frost when he lets loose in the spring, and again when he commences "journey work" in the fall, is worth two days without him in summer time.

#### THIS COULD HAPPEN ONLY IN BOSTON.

Two teamsters came into collision in the street with their vehicles.

First Teamster — My dear sir, I'm very sorry for this accident. Will you kindly excuse me?

Second Teamster — Pray do not mention it, my dear sir. The fault was as much mine as yours.

After getting their wagons clear of each other they bow politely, and with a pleasant "good day" proceed about their business. — *Boston Courier.*

## STUDIO NOTES.

BY STAMSON.

**D**ID it ever occur to you, dear reader, that those who are the best able financially, do the least, usually, in road making and improving? I know plenty of men who could each pay for a mile of brick or stone road past their premises, and never need to wink at the cost, but they would all the same, and are in too many cases the hardest kickers against any permanent road work that will benefit the masses.

Better roads in and about Stamford has been the writer's hobby for a dozen years past, and during that time he has used up small barrels of ink in the columns of the daily and weekly papers, and he thinks that some of his seed has borne fruit, for our out-of-town roads actually get gravel now, where they used to get only gutter scrapings and sods.

This is quite encouraging, for road users out of the city, but inside, our streets are nearly as bad as in the dark ages, before cycling came to wake up the average man to a sense of the needlessly bad condition the streets were in.

Thousands of dollars are yearly thrown away upon temporary top-dressings of stone and gravel that barely last six weeks before mud and ruts appear.

In view of the indifferent roads and streets of this country, it is no less than wonderful how cycling has progressed, up to the present, and how brave and determined, especially the ladies, have been, for many of them began riding on the old hard tires of Lang Syne.

Miss May Munson, who was the pioneer lady cyclist of this section, and has been for years an advocate of good roads, having pushed solid tired cycles over all sorts of so-called roads in Connecticut and York State, is in a position to appreciate modern wheels and our slightly better roads.

Among the improvements about here is the work now under way, of cutting down Breakneck hill, a dangerous one just out of the city westward by south.



MISS MAY MUNSON.



## STREETS OF PHILADELPHIA.

CHAS. V. D'OSSONE.

**A**FTER several years of agitation on the subject, an earnest commencement was made in the early part of last year to improve the condition and character of the streets of Philadelphia by taking up the ancient and highly unsatisfactory cobblestone, which had long been a reproach to our city, and substituting the smooth and slightly asphalt in streets where travel is light, and Belgian blocks in the sections having a great amount of heavy hauling. Hundreds of miles of improved paving has been laid, with the work still in rapid progress, and which will continue until the good, old City of Brotherly Love will have an additional source of pride in being one of the best paved cities in the world.

The advent of the trolley has been largely instrumental in bringing about this glorious result, as the street car companies entered into an agreement with the city to lay the best pavement, from curb to curb, for the privilege of substituting the electric for the horse power.

The agreement has been faithfully kept by the companies, with no appearance of disposition on their part to slight the work, either in the quality of material used or in the methods of putting it down. It is pertinent to add in this connection that the street car companies are obliged by City ordinance to keep in repair, between the curbs, the streets which their lines traverse. The work has been done heretofore in but a half-hearted manner, and to get the companies to live up to their obligations has always been a source of considerable trouble for the city authorities.

That the people of the city are eager for good roads is evidenced by the lively interest they take, and the pressure they bring to bear on their Representatives in City Council for a continuance of the good work in streets not occupied by passenger railways, and vast sums of money have been appropriated for that purpose. The city will soon commence the construction of a subway to do away with the remaining grade crossings of the Philadelphia and Reading Railroad, on Pennsylvania avenue, from Broad street to Fairmount Park, a distance of over a mile, in the course of which about fifteen dangerous crossings will be done away with. The cost will be about \$6,000,000, half of which sum will be borne by the railroad company, and the balance by the city. All this is not only in the direction of good roads, but safe ones as well.

The city has this year arranged to spend about thirty-five

millions of dollars in permanent improvements. A goodly share of this immense sum will be expended in improved drainage and good roads. The city is fully committed to this policy, and is not likely to stop until every street and alley in the city has a pavement that will require nothing more than a good brushing to keep it in a clean and healthful condition.

One very noticeable result of the street improvement is the great increase in bicycle riding. Broad street, Philadelphia's grand boulevard which bisects the city from north to south; broad, as its name implies, and as straight as an arrow, is fairly alive in the evening with wheelmen. The pedestrian must preserve a good lookout to avoid being run down by some of them who possess a propensity for racing. There have been so many narrow escapes from this cause that it will probably lead to some necessary restrictions as to speed, with mounted policemen to enforce them.

I was a witness a few nights ago to an encounter between a small-sized dog and a wheel going at a rapid rate, in which the dog came out a little ahead. The front wheel went entirely over him, and brought both wheel and rider to earth. The dog was able to rush off howling terrifically, while it took the rider some time to get into a condition to limp painfully and sorrowfully away, dragging his wheel with him; both being subjects for repairs.

This may seem like a departure from the subject of good roads, but it is incidental to it, nevertheless, as on poor roads the wheel does not make such headlong speed as to be dangerous, and such accidents are not so likely to occur.

I do not think the increase in the number of bicycles sold is likely to injuriously affect the sale of carriages, for the reason that the bicycle is the vehicle of those who cannot afford to purchase and maintain a horse and carriage. I am more inclined to believe that it produces a beneficial effect by stimulating a love of motion, of getting around and seeing things. Therefore, when the bike rider, in course of time, tires of the necessary effort in propelling a wheel, and of exposure to sun and the unexpected shower that wheelmen occasionally experience, the next step for those who can afford it will be the horse and buggy.

#### "CLOSE HIS FEATURES" IS GOOD.

The work for good roads done by the L. A. W. is alone worth the price of every wheelman's support of the organization. Let him who decries the old league close his features and think.—*Michigan Cyclist.*

## SIDE PATHS.

BY C. T. RAYMOND,

*President Side Path League.*

**W**HEELMEN universally believe in the "Good Roads" movement and are doing their share in every section to hasten the era when good roads shall be universal. The wheelmen of Niagara County, N. Y., are no exception and we gladly welcome every law which tends to give us better roads. But while we are waiting for the action of the State, and the County Board of Supervisors, and the farmers we are quietly building some good roads of our own, which we call "side paths," and it is because we believe that many wheelmen in other sections are circumstanced in the same manner that we are, that we call attention to the work we are doing.

Our movement started in Lockport, and up to the present time has been confined to that locality and the immediate vicinity, so that in describing what has been done, we must look at it from a Lockport point of view.

Lockport is the centre and county seat of Niagara County. Twelve miles to the north lie the blue waters of Lake Ontario; twenty miles to the west Niagara's mighty cataract thunders ceaselessly; twenty-seven miles southwest lies Buffalo, the queen city of the lakes, with its beautiful parks and boulevards. These are the points to which the wheelmen of Lockport would naturally go for pleasure and recreation. But, alas! The roads to these points are the worst in the county. The roads to the Falls and to Buffalo are clay—sticky and muddy in the spring and fall, and rough and rutty in summer—while the roads north to any points on Lake Ontario are very sandy.

Even if the \$10,000,000 road bill had passed the Legislature a few years ago, providing for the construction of two main roads in every country, it would not have helped us to reach the lake, and the almost unanimous votes passed by the farmers' clubs throughout the county, against the adoption of the county road law passed in '93, showed us that we had little reason to expect any results from that measure for a long time to come.

There has existed in this county for generations, along some of the roads, natural side paths, and along these we have been able to skim at all times with little exertion, no matter how sandy or muddy the road has been. The pleasure derived from the use of these natural side paths induced a few of us to believe that by organization and systematic work, we should be able to build side paths along the bad roads where none existed,



BEGINNING OF PATH BETWEEN LOCKPORT AND ALCOTT, N. Y.

Built by the Side Path League. President Raymond in foreground.

and to connect the stretches already existing, into one complete system. We have been at work for the past two years, and the results accomplished begin to speak for themselves.

The money so far has been secured by membership dues of one dollar per year, subscriptions, and entertainments. Each year we have had a subscription list of twenty men at five dollars apiece, while some have given much larger sums, and the bulk of the four hundred dollars expended to date has been raised in that way. We ought also to acknowledge that at the start we received some help from both the Pope Mfg. Co. and the Overman Wheel Co., but these are the only manufacturers who have ever assisted us.

The first stretch of road we have attempted to cover is the twelve mile stretch running to Olcott—the nearest point on Lake Ontario. The first two miles of this road leading north from the city limits is a toll road and is what they call macadam in this county, but it would make Macadam turn over in his grave.

It consists of stones of all sizes thrown on loosely and left for the wagons using the road to roll them down into shape. As farmers in this county use narrow tires, the result is that the road is a series of deep ruts and ridges, and none of the ridges are wide enough for a wheel to run on comfortably.

Beyond the toll road, the road is very sandy, and in dry weather it is next to impossible to push a wheel through it, while in wet weather, owing to the centre most of the way being lower than the edges of the road, it becomes a sea of mud.

We have covered the toll section with a fine wide cinder side path, and we are now pushing our work along the sandy sections.

The specifications for building a side path are very similar to the specifications for a road, and these have been given many times in *GOOD ROADS*. We have kept a ditch between our path and the road at all points. This prevents farmers from driving over on to the path when the road is bad. Wherever the land is low or wet we have made an embankment sufficiently high to be above any flood or freshet. We have provided vitrified tile pipe at all points where there is a natural drainage from the fields to the main ditch between the path and the road. This pipe runs from four to twelve inches in diameter, and at one point where a considerable stream runs in spring we have laid two twelve inch pipes side by side. It would be well to enclose the ends of the pipes in a loose stone wall or in a regular masoned wall. If the pipe is allowed to project beyond the sides of the path for any distance it is apt to get broken, while if it is brought just even with the edge the dirt is apt to wash down and fill up the pipe after a time, especially the four-inch tile.

Where the path runs along a side hill sloping down to the road, it should be provided with a shallow ditch on the upper side with three-inch tiles running under the path every twenty-five or thirty feet, to carry the rain from the slope under the path, otherwise a gully will occasionally be washed out in the path. In constructing a path, any dirt may be used. Sand, clay, loam or anything handy. Generally enough dirt can be dug out of the ditch to raise the path as high as will be necessary. The path should be thrown up five feet wide, and if the room and money will permit, six feet will be better. We use a tight string between two stakes on each side of the path to secure the level, and after the dirt has been thrown up until the path is the right height and width and substantially level, it is rolled with a heavy roller. The roller we have is 26-inch face and weighs a ton and a half, but the proper roller to use would be one with 4-foot face made with a parabolic curve one inch at the centre. This would make the path one inch high at the centre, which is ample to drain off any rain on so narrow a path. After the path has been graded and rolled it requires to be surfaced, but we have not had long enough or extensive enough experience to be an authority on this point. We can say, however, that the surfacing should be at least two inches thick at the centre and it may taper off to one inch at the side;



CINDER SIDE PATH THROUGH SWAMP NEAR ODD FELLOWS' HOME.

This was filled over three feet in places, so as to be above high water in spring.

but if clay is used in grading the path, the surface should be thicker than if sand or loam is used. Otherwise the clay will work up through in the spring and make the path soft and sticky, and if it is walked on much, or if cattle are driven over it, it will get rough and remain rough, until dry weather and travel on the path wears it down smooth again.

The surface may be cinder, gravel or crushed stone. In many places there are beds of shale which will make a good surfacing material. Anthracite cinders will not make a good path unless they are crushed fine before being laid. Gravel should be screened. We use a screen with one inch mesh, but probably a screen with one and a half inch mesh would give very satisfactory results. We have not used any crushed stone yet, but hope to experiment with it during the coming year. The cost of maintenance and keeping in repair will be a very small item after a path is once properly constructed. If the roller is run over in the spring, while the ground is wet and soft, it will keep the path smooth and level, and the centre higher than the sides during the entire season. The weeds and grass along the sides should be cut down or scraped off two or three times during the season, but one man can do many miles of this work in the course of a week.

The cost of a path will depend on the amount of grading

that has to be done, the distance the surfacing material will require to be hauled, the number of stones, trees and natural obstacles that have to be removed, and the amount of tile pipe required for draining.

Our first stretch was built through a swamp, and it required hundreds of loads of stone before we could put on any dirt for grading purposes. This stretch was not over one-eighth of a mile, and cost about one hundred and twenty-five dollars.

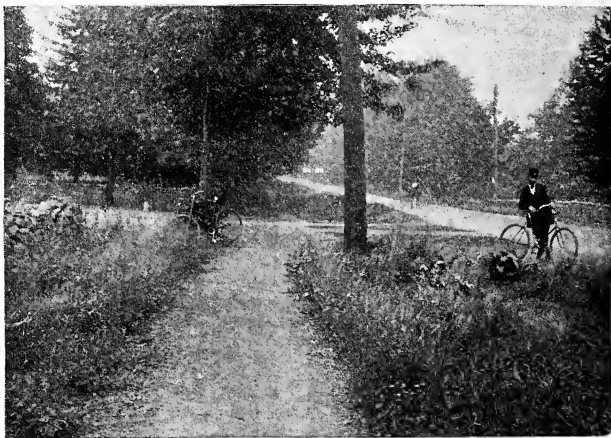
Such a stretch of work will seldom be required, and there is no other piece as difficult along the entire twelve miles to Olcott. We have contracted for a section this summer on the basis of one dollar per rod, which would figure three hundred and twenty dollars per mile. This is for a fair average piece of road, and paths would not cost anywhere in this county over that sum per mile on the average. Good paths can probably be built complete for two hundred dollars per mile if the work could be undertaken on a sufficiently large scale to warrant the employment of machinery like the new era grader, steam rollers, and scientific supervision. Such work can not, however, be undertaken by a small local body of wheelmen, and suggestions for undertaking side path work on a larger and more extensive scale will be reserved for the next article.

Mr. Dodge, in May number of *GOOD ROADS*, says, "a wonderful means of transportation has appeared, in the form of the bicycle, which is destined to give us the cheapest means of transportation of anything that can be devised for the transportation of a single passenger; and, in constructing a system of roads, some reference should be had to the uses of this new machine." That is correct, and, as bicycles already far outnumber carriages in many localities, and as the number is rapidly increasing, it is proper to consider whether in constructing roads it is not better to provide a separate road or path for the use of wheelmen.

On country roads you will find horses and carriages, animals of various kinds, and men, women and children all moving along and using the road indiscriminately. But, as the city spreads out, and the country road becomes a part of the town, the number of pedestrians increases, as well as the number of horses, and a separate road or side walk is demanded and constructed for the exclusive use of the pedestrians.

Now this separate walk is demanded, not so much because the increase in the number of horses and carriages has made the road too dangerous, as it is because the foot passenger needs a road which will always be hard, smooth and free from mud, even in rainy weather.

It is exactly the same with wheelmen. When our numbers were few, the road was good enough, but now our number is myriad and we need a road of our own which shall always be



SIDE PATH ALONG LAKE AVENUE, CORNER NIAGARA ROAD.

Built by the Side Path League. Grounds of the Home for the Friendless on the left.

dry, smooth and hard, and may be used as comfortably in rainy weather as in dry.

The best road made is subject to the grinding action of heavy iron shod wheels, and constantly cut up by the action of iron shod hoofs. It is also the constant receptacle of manure and dirt of many kinds. The result is that, no matter how carefully a road is built nor how frequently it is repaired, in country districts where the inhabitants can't give it the constant and skilled attention that a park road receives, it is bound to get into a condition in which it is not suitable for the use of wheelmen in wet weather, and it cannot be made as satisfactory as a good side path even in dry weather.

A side path four feet wide is ample for all purposes on ordinary roads, and wheelmen can pass each other and pedestrians on a path of this width. A path properly drained, graded and leveled is always dry enough to ride with comfort even during a rainstorm, and it never tends to get dusty, muddy or rutty. It is easy to turn the rain off, even on a hill, from a path only four feet wide, if it is provided, as it should be, with a ditch on each side of it. The number of people who use wheels in the country is rapidly increasing. Women and children are using them as well as the men. When a system of sidepaths is once established it will add much to the comfort



of country life, and it will bring the city and country closer together. Children who now plod miles to school through mud and dust, will then go to school on their wheels in one-fifth the time and with one-tenth of the exertion, while the women can jump on their wheels and run to a neighbors on any little errand a hundred times where they now go to their neighbors once. Men can go a considerable distance on their wheels and get back in less time than it would take to harness a horse; while, within a radius of ten or twelve miles, they could go to town evenings to attend evening classes, lectures, clubs, entertainments, or any of the many other attractions which make town life so much more attractive than country life.

Of course the above is all trite, and applies equally well to districts which secure improved roads, but the point desired to be made in these articles is that side paths, which will better serve the purposes of wheelmen than the best roads made, can be obtained with one-twentieth the expense of a good road, they can be maintained at a very small fraction of the expense of maintaining an improved road, and they can be secured in a very short time if a proper and systematic effort is put forth in this direction.

The Niagara County Side Path League has been working for two years on a sample stretch of side path which will be twelve miles long when completed.

TRUE HAPPINESS DEPENDS NOT SO MUCH ON  
WHAT WE HAVE, AS HOW WE LIKE IT.

The prince passed by. A careless boy,  
As he watched him ride away,  
Thought, "O, for a taste of the boundless joy  
Where the prince must feast each day."  
And a great hope burned in his youthful heart  
To sometime play in a prince's part.

The prince passed by; his heart was sad  
With a thousand cares oppressed;  
"To be once more like that happy lad  
And freed from this deep unrest,  
I'd give all the sorry hopes of men;  
Alas! that youth comes not again."

—Nixon Waterman in *Chicago Journal*.

## HOW A WOMAN BUILT A WAGON ROAD.

BY EDWARD W. PERRY.

*(Concluded.)*

"Yes I do mean every word on't!" cried the badgered Swain, who was tender about his Sunday-school business. "Let any man come up with five hundred dollars good and lawful money of these United States, to bind the bargain, this minute, and I'll take it fast enough. I'll show ye whether I'm bluffin,' as ye call it. I'll take the money, and he can take the farm."

"I'll take that offer; here's your money—five hundred dollars good and lawful money of the United States," answered Burns who had been whispering with his prospective mother-in-law.

He thrust the crisp bills into the hand of Swain, whose fingers instinctively closed over them. The man stood staring at the money until the shouts and laughter of the crowd aroused him from his stupefaction. He looked around on the faces of the people, then ran down the steps and marched away to the office of his lawyer.

In high good humor the crowd went to the polls, confident of complete success. But when we got there we found another kind of an antagonist to meet. We saw in a moment that there was work cut out for us. A big crowd was listening to Clinton Sturges, a rich farmer, who had long been one of the best of our county supervisors, and now aspired to a seat in legislature.

"Mankind passed through its stone age!" he cried in his pleasant, sonorous tones. "It has seen its bronze age, we are in the midst of and nearly through the iron age, and now a few selfish men want to fasten upon us a bond-age. Beware of delivering yourselves, bound hand and foot, to these schemers. I beg you to pause before you fetter yourselves—before you take upon your already overburdened shoulders a load which you may never be able to shake off—a grievous cross which you will have to pass on to your children; to those innocent ones who to-day have no power to lift their voices in protest against this wrong. They look to you, their heaven appointed guardians, to protect them from designing men. Will you prove recreant to this sacred trust?"

"Who are the men who are misleading you in this matter? They are those who fatten on the interest paid by hard working farmers. They ask you to issue bonds to pay for stone roads—fancy pavements that they cannot deny are better than the costly pavements of the biggest city in all the land. They have the audacity to tell you plainly that they stand ready to buy

these bonds; and they will pay for them with the very money taken from the toiling farmer and the mechanic, for interest on the mortgages these capitalists hold on their dearly bought and dearly loved homes."

"And what means have they used to bring this about? They have bought the influence of the press, and it prints columns of stuff to mislead the readers. They have a following of boys who would look far better helping their fathers in the shop or in the field, than they ever look perched on their bicycles, 'doubled over like monkeys with a stomachache,' as an honest friend of the people described them to-day. And they have gone so far as to deceive some women into using their influence to secure votes for this iniquitous measure. Think of it. Taking women from the sacred duties of home, to enter the foul arena of scheming politics. And these men dare to tell you that this chatter of misguided women, and clack of boys, and paid advertising of a venal press is public opinion, and voices a popular demand for the improvement of our highways!

"I have grown up from boyhood right here among you. For thirty years I have hauled the product of my farm over the very roads which these men ask you to spend thousands of hard earned dollars on; and I make no complaint of that road; I do not say that our pathmaster doesn't know his business; I do not accuse him and the supervisors of neglecting the duty they are pledged to perform; I do not demand that you taxpayers shall pay for making a pavement as smooth and level and dry as a house floor, that I may haul my corn, and hay, and hogs to market in a silk lined carriage. These roads were good enough for my father and his father before him. They are better now than those level-headed men ever saw them; and shall I say that they didn't know how to make a good road suited to their needs?

"Who are the men who ask you farmers and mechanics to bond yourselves and your children? They are the money lenders, the merchants and the lawyers; they are the doctors and even the school teachers. Do they go into the fields and shops and earn an honest living, or do they sit in cushioned chairs and shaded offices, while the eyes of the artisan and of the farmer smart with the sweat that pours from their brows?

"These who ask you to vote for bonds are they who leave their offices in the middle of the afternoon, to drive with their dainty wives or sweethearts—and must have stone roads, smooth, and level, and broad, to ride over. There must be no mud, nor dust, nor rut, lest the delicate fabrics of dress and carriage, or the shining coats of the fast nags should be soiled, or the drivers should be jolted. And they ask *you* to pay for all this luxury.

"They pretend that the making of such highways would be

a prodigious public good ; but they took care to make the best part of their stone road on private property, and leave untouched half a mile of the worst mud hole in the county. And then they compelled you to buy stock that has never paid a cent of dividend, and never will pay a dollar.

“ Will you blindly pledge yourself to pay for a costly fad of bicycling boys and weak minded women, for a money-making scheme of sharp men who want their property made valuable at public cost? Will you enslave your children? Can it be possible that you will voluntarily enter into lifelong bondage? I plead now in your interest, as I am ever ready to work for your interest.”

Brown, the banker, arose and said in his calm, deliberate manner :

“ My friends, you have known me many years. You have known the men who have been the chief movers in this road improvement scheme. You know the lady whose brain conceived, whose influence started, whose advice has largely guided their work. I need say no more on that point, to remove any possible suspicion as to the honesty, the unselfishness of their purpose.

“ I am not here to pose as a philanthropist. I went into this work for the profit there is in it. I want you to go into it for the profit there is in it. I shall get a good profit. I don't object to saying that I have made a rather good thing out of it already, and shall make much more. We ask all the people of the county to share those gains. I feel warranted in saying that the Goods Roads Company is willing to take bonds of the county for all the money actually spent by us in making improved roads—and many of you know by experinece how great those improvements are. We give you our services for nothing other than the benefits which we, with the rest, will receive from that improvement.”

“ How about the road through Ward's farm? ”

“ We will give that to the county, in exchange for the old right of way,” I answered.

Well, we worked hard that day ; and they voted us down. Molly and I rode home tired and disappointed, and the children were despairing.

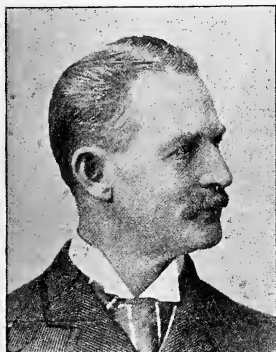
“ Let's have a good supper and sleep upon the matter,” said Molly. “ We'll feel better to-morrow ; and to-day is not the end of time.”

But it took two years of hard work to get the people to vote those bonds and begin a systematic improvement of their highways ; and the fight was not ended then.

## THE SPEED OF HORSES AS AFFECTED BY THE CONDITION OF THE ROADS.

BY BUDD DOBLE,

*The famous horseman.*



BUDD DOBLE.

**D**URING the 30 years of my experience as a trainer and driver of horses, I have had forced upon me, often in a very disagreeable manner, the fact that speed is dependent to a very considerable degree upon the condition of the surface over which the horse travels. The difference between the surface of the best trotting track, in its best condition, and that of the worst track when ready for use, is not a difference which the average road maker could see; and yet there might be a difference of *several* seconds in the time which a horse could make over the two tracks. Take two

conditions of the same track: there are differences which even track experts cannot always define, and which may be sufficient to astonish the world with a new record, otherwise unattainable at that moment.

If these well known, though not always well understood, differences in the surface of tracks (*all* of which look perfect to the *inexperienced* eye), effect the speed of a horse so materially, what shall we say of those differences in the condition of roads and streets, which are so obvious to all. Much has been written on the subject of how heavy loads a team can haul over different kinds of roads, but little attention has been paid (in print, at least), to the speed at which these loads may be hauled.

Several questions effect the speed at which a teamster may drive over a rough road. Spring wagons are better than rigid ones, but in either case many kinds of merchandise are liable to injury if jolted or shaken up too much. The careful driver must also look out for the welfare of his wagon, if he would get out of it a profitable amount of use.

To the care of his load and wagon, is added the constant

lookout lest the horses stumble over loose stones, or get injured by a blow from the "pole" when one of the front wheels strikes an unusual obstruction.

If the imperfections of a road limited the speed of travel simply to the physical ability of the horses, it would be bad enough. But it is even worse than that, since both the safety of the wagon and its freight demand a moderate speed.

And at the slowest speed on a rough road, more injury will result to rolling stock than would be possible on a perfectly smooth road, even though the speed in the latter case might be excessive.

One having a taste for statistics could easily figure up an enormous loss which is being suffered, directly and indirectly, by everybody, on account of the fact that nearly all overland hauling costs more than it should. Not alone because too light loads are carried, but because too much time is consumed in doing it.

I am glad to observe the great amount of work that is being done toward the making of better roads.

The constant agitation of the subject by the League of American Wheelmen, through its *GOOD ROADS* magazine, and in other ways, is bound to bring results in the future even more far reaching than those practical benefits which it has secured in the past.

The following is very old, but it will always be appropriate at about this season of the political year :

"Father! who travels the road so late?"  
 "Hush! my child, 'tis the candidate;  
 Fit example for human woes;  
 Early he comes and late he goes.  
 He greets the woman with courtly grace;  
 He kisses the baby's dirty face;  
 He calls to the fence the farmer at work;  
 He bores the merchant, he bores the clerk;  
 The blacksmith, while his anvil rings,  
 He greets, and this is the song he sings:  
 'Howdy! howdy! how d'ye do?  
 How is your wife, and how are you?  
 Ah! it fits my fist as no other can,  
 The horny hand of the workingman.'"

“ROADLETS.”

BY W. L. S. BAYLEY.

**MEN** may come and men may go, but some bad roads bid fair to be bad forever.

\* \* \* \*

**I**F our right to internal improvements by the general government are already embodied in our organic law, working enactments are decidedly in order; and if the Constitution does not so provide, it cannot be too quickly changed.

\* \* \* \*

**T**HE government roads that, through Mr. Clay's efforts, were built so long ago, are to-day good roads. Give us more of them.

\* \* \* \*

**E**XAMINE carefully the foundations of any quarry, then go and build roads likewise.

\* \* \* \*

**T**HE action of sand is quite analagous to the action of water—both must be confined to make a satisfactory foundation.

\* \* \* \*

**A** SUCCESSFUL government for the people, and by the people, implies that there are brainy men who can build good roads economically. Extravagance should be set down upon; for if it is not, it will kill the good road's goose that would otherwise lay the golden egg.

\* \* \* \*

**C**UPIDITY is the canker worm that too often prevents the building of good roads.

\* \* \* \*

**D**ON'T use convict labor in building roads. Convicts are justly crushed and must not directly or indirectly compete with honest labor.

\* \* \* \*

**E**NNUI is one of the most powerful causes of ill health. Hast ever thought that the companion of your youth, now silently sleeping in yonder churchyard on the hill, would to-day be with you to advise and assist, but for the absence of social conditions that good roads only can bring?

DOING a thing yourself to insure its being well done does not apply to the construction of good roads any more than it does to the building of ocean "grey hounds."

\* \* \* \*

REALLY, friends, your narrow tires tire us.

\* \* \* \*

SIXTY per cent. of all public school funds are wasted, because good teachers, like good road builders, are born and not made.

\* \* \* \*

STREAMS cannot rise higher than their source; hence, how can the legislator, whose accoucheur is a ward heeler, be expected to wisely assist in the making of laws so essential to the public weal as are those for the building of good roads?

\* \* \* \*

KEEP free from extremes. A great institution of learning in the Keystone State gave a \$400 prize for a model (?) road essay wherein the writer indicated that side ditches should be 48 inches deep.

\* \* \* \*

WE insist that the general government should not personally build the public roads, but may loan its credit on first, not second, mortgage bonds, as in the case of the construction of the transcontinental roads in 1862.

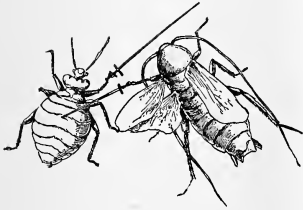
#### AN INTERESTING NEWS ITEM.

The annual road repairing farce is now on the stage. The loose soil and sod is dug out of the gutters and thrown into the middle of the highways for the rain to wash away. For a hundred years this thing has gone on, hence it is apparent why the roads of 1894 are no better than those of 1794.—*Several Exchanges.*



## DOMESTIC SCIENCE

AS APPLIED TO THE BED BUG.



**F**AMILIARITY may breed contempt, as we know it too often does, among men and women, but familiarity with the *Cimex Lectularius*, or common American bed bug, tends to breed anything but contempt.

This earnest little insect is one of the things for which the tidy housewife searches industriously and yet hopes that she may never find.

Whatever else may be said of him, we must admit that the b. b. is steady and painstaking, and he is always to be depended upon.

Once having discovered his whereabouts, you know just where to find him.

He is of a neighborly turn and always strives to keep in touch with those he has learned to like.

Some people seem not to be in sympathy with all of God's little creatures, and they often cruelly persecute and say mean things about the subject of this article. Personally we do not approve of the too common feeling which is shown toward "*Cimex*." We believe that his right to live is clearly established: it is a case of the survival of the fittest. Large, full-sized people have been known to move away and leave the house in possession of these ever ready, and seldom wanted, "wingless" insects, several hundred of whom wouldn't weigh an ounce.

In fact we doubt if any one has ever been able to get an ounce of bed bugs on the scales at one time.

The new Standard Dictionary gives the following definition:

"*Bed-bug*:—A cosmopolitan, blood sucking, wingless, depressed bug of reddish brown color and vile odor, infesting houses and especially beds. Its salivary glands secrete an irritant, alkaline substance. The cockroach is the natural enemy of the bed bug, and destroys large numbers."

The principal object of this is to help the cockroach, so far as we may, to regain the love and confidence of those people who have come to regard him as an unwelcome tenant at will.

The cockroach lives mostly in the kitchen, his object probably being to get ahead of the other boarders.

He knows a good thing when he sees it, and is as likely to see it as anyone in the house.

It is related of Thos. Edison that he once fixed some strips of zinc on the wall of his room so that cockroaches in walking over them would get electricity in their feet, and that he "killed large numbers of them in this way." We don't want to believe this of Mr. E. So useful a life as his should not go on the permanent records until it is cleansed of this foul blot, and we hope that Mr. Edison will either deny the statement or show some mitigating circumstances.

Whenever you find a cockroach in your bedroom, speak kindly to him. He is looking for the "*Cimex lectularius*." You may think his call unnecessary, but don't be too sure; his physical limitations enable him to make a much more extended search than you can; he is willing to do it, and it don't cost much to keep him.

He will do less harm in a kitchen than the average servant girl will, and he never asks for an evening out.

The privilege of entertaining his company under the sink is an inexpensive concession for you to make. He doesn't burn any unnecessary gas, and is always in before nine o'clock. In exchange for this small outlay on your part, you get protection: protection of a desirable sort, protection while you sleep that calm, refreshing sleep which

"Knits up the ravelled sleeve of care."

And when in the early evening you tuck the little ones snugly in their trundle bed, you can sing to them in the delightful words of Dr. Watts (of Louisville):

Hush, my dears, lie still and slumber,  
The faithful cockroach guards thy bed,  
Destroying bed bugs, without number,  
Gently crawling round thy head.

#### A PHILADELPHIA BEAR THAT WASN'T SO SLOW.

City Man (to hunter)—Lije, you've heard a great many tough hunting stories: Which do you think is the toughest yarn you ever heard?

Lije—I don't remember of hearin' no such tough yarn as you speak of. Tell you what really did happen down here, though, 'bout a year ago. A man shot a bear in the head, and just the minute the bear felt the ball he turned right round. He turned so quick that the ball hit the man and killed him after passing through the bear.—*Philadelphia Post*.

## HOW GOOD ROADS PAY FOR THEMSELVES.

BY PROF. I. D. WARFIELD.

“EVERY judicious improvement in the establishment of roads and bridges increases the value of land, enhances the price of commodities and augments the wealth of our country,” came down to us from DeWitt Clinton, of New York, and Professor Gillespie, of Union College, author of an exhaustive treatise upon roads, utters these startling words:

“The common roads of our country (United States) are inferior to those of any other civilized country. Their faults are those of direction, of slope, of shape, of surface and of deficiency generally in all the attributes of good roads.”

Both sentiments grow in value as they ring down the corridors of time. We begin now to consider a question which is to occupy our thoughts till better lights are along the line of improvement.

Improved machinery has added over five millions of acres to the cultivated area of farming lands since 1870, and improved roads are necessary to relieve the blockade of freight transportation. Millions of dollars are yearly lost to farmers because they are not able, on account of the impassible condition of our leading outlets, to sell their produce when the markets command the best prices.

If the money which had been yearly levied for the repair and making of roads, had been directed toward macadamizing, hundreds of miles of good roads would have been our inheritance instead of our now lamentable outcry for relief.

There are many lessons for us in the records of history. Two thousand years ago the Romans, then occupying England, built roads worthy of inspection. Having marked out parallel furrows, they removed the earth and upon the hard pan were then put two courses of large, flat stones, laid in mortar. Next came a concrete of broken stone with quick lime, pounded with a rammer. The third course was broken bricks, tiles and and pottery mixed with lime. Into this mass were imbedded the large blocks of stone which formed the pavement. These were so perfectly fitted their joints were scarcely seen.

The entire thickness of the four strata was about three feet. If the road passed over marshy ground, the foundation stones rested on a frame work of timber. On each side of the road were paved foot paths and parapets with stones at regular intervals for mounting on horseback, whilst milestones marked the distance to all parts of the empire.

Our early settlers in America, to escape the miasma of an

undeveloped country, built residences upon hills, retaining the roads leading to them as their general highways. We have been forced for years to climb hills, when, by going around, perfect levels, with attendant comfort and speed, might have been secured.

A curved road exceeds a perfectly straight one only about 150 yards in a distance of ten miles. Upon a straight and level road a horse can both safely and rapidly draw his load, whilst upon a hilly one he must diminish his speed in ascending and descending, carrying but a part of a load at best.

Scientific experience has developed the following rule :

The horizontal length of a road may be increased by *twenty times* the perpendicular height which is to be saved ; that is, to escape a hill one hundred feet high we may extend its length two thousand feet, modified by friction in both cases.

A road that rises one hundred feet in the thousand compels the actual lifting up of one-twentieth of the whole load just one hundred feet. By going around that hill we not only remedy this, but save half the cost of carriage.

The dynamometer has conclusively shown that a horse can draw three times as much upon a broken stone road as over a gravel one. This two-thirds expense of carriage, if properly considered, would return an annual interest sufficient to meet a permanent investment for such improvements. Again, if wheat sell at 95 cents a bushel in the city, and it cost us on bad roads fully 20 cents to get it to market, and by improved roads we can reduce that expense to 8 cents, there remains 12 cents per bushel from which we may claim an actual gain. Suppose, again, a toll of 2 cents will pay a dividend upon the improvement, we still have a gain of 10 cents a bushel.

So, a straight line is not always the shortest distance between two points, but the old adage — “ the longest way around is the shortest way home.”

Let us look at some figures in proof of this assertion.

Physics again establishes the fact that resistance of gravity due to inclination is equal to the whole weight multiplied by the height of the plane and divided by its length.

Thus, if the inclination be one in twenty, the resistance will be one-twentieth of its weight. The ordinary friction on a level road is one-fortieth, which, added to the above, gives three-fortieths, gravity being two-thirds of the whole. Upon a rough road, half as good, gravity will be one-half, since it *absolutely* is always the same upon the same level, but *relatively* is less upon a rough road.

The advantages then of improvement are these. Taking the actual average of friction as one-twentieth of the weight and the average power of a horse, though never definitely settled, at Watts' estimate of 33,000 pounds raised one foot in one minute, or 100 pounds for ten hours a day at the rate of

three miles per hour, it would require on a road of fifteen miles to bear an annual burden of 25,000 tons, an annual expense in horse power of over \$1800. Reducing now, by macadamizing the surface friction to one-fiftieth, only 10,000 horse power is required, a saving of over \$11,000 in expense of carriage, which, capitalized at six per cent., would create a fund of \$185,000 to be expended in the improvements, which, at a moderate expense of \$2,500 per mile, would give seventy-five miles of road over which our annual saving may thus be extended, thus creating a new fund for further improvement. The modes of raising such funds will be reserved for future papers.

Let us consider now if it will pay to go round our hills rather than over them. Take one a mile long with an ascent of one in ten and descending with the same slope. A level road may be secured by going one mile farther. Upon this new road there will be no inclination to be overcome. The force of draught from friction is over eight hundred days of a horse and the force of draught from gravity will take fifteen hundred more. As there will be no inclination, but one mile more in distance, a saving of nearly \$1,000 will be made, sufficient to build the mile of new road, or invested would give a fund of \$15,000 for our three-mile route.

Again, improved roads increase traffic, speed and development—all adding to the freight travel, and therefore, to the income of the road. This last proposition has been thoroughly tested in a county of New Jersey, lying within sight of a great city.

Some forty miles of Telford road, costing about \$40,000, were built in '89 and '90 from trap rock. The money was obtained on bonds of the county. Along the line of this road land has increased from 50 to 300 per cent. It has paid for itself already in the development of real estate. One and a half millions of dollars in one year have been added to the taxable basis in a section covering only one-half of the county. This increase will pay the yearly interest on the cost, leaving surplus enough to discharge the entire bonded debt as it falls due.

Those who hesitate to indorse the bonded debt system, because it will be leaving a debt of great magnitude to our children, may herein learn that the debt has really been transformed into an inheritance that will cause our children to rise up and bless us.

Once more, if we cannot overcome these objections, let the commissioners of each county, of each State, make the entire appropriations for road improvements from now, henceforth and forever, only available for purchasing and putting down permanent stone roads in sections requiring immediate improvements, and in fifty years the problem will have been satisfactorily solved.

## HOW TO INCREASE THE LEAGUE MEMBERSHIP.

BY HENRY CROWTHER.



HENRY CROWTHER.

FOR years this has been one of the problems fronting the officers of the League of American Wheelmen, and its solution is no nearer a final and authoritative settlement than when it first agitated the minds of the inceptors of the organization.

And yet it ought not to be a *very* difficult question.

Given, on the one hand, a governing body of men, like the Executive Committee, the National Assembly, the Chief Consuls, and so on down through the ramifications of the local and district officials and League

clubs; and on the other the vast army of wheelmen, growing by hundreds day by day—given these two factors and it would seem but a short gulf to be bridged by concerted and thoroughly systematized effort.

There's the rub—*thoroughly systematized effort.*

For the sporadic and intermittent methods that obtain to-day in the majority of our divisions will not accomplish the purpose. Work—hard, earnest, unremitting *work*, is what we must have; but it must be work that is no less well defined and organized, than arduous—and this last is a prerequisite; never lay a field fallow to the hand of the husbandman that required a greater expenditure of labor.

But upon what lines shall this work be carried on?

It will, I think, be universally admitted that the average man (and it has not yet been discovered that the average wheelman is built on a different plan from the ordinary citizen) in nowise attempts to conceal his anxiety to know what he gets out of anything he is solicited to “go into,” whether it be a real estate deal, stock-jobbing operation, secret society or beneficial or fraternal organization—and justly so. The *quid pro quo* obtains in all our dealings from the cradle to the grave. We give—and we get; and although we have it upon high authority that “It is more blessed to give than to receive,” yet until the millenium comes, man will probably continue to look for an equivalent. During a period extending over something like ten years of League work my experience has almost

invariably been—with so few exceptions that they only prove the rule—that the first question broached by a rider, when requested to join the L. A. W., is, “What do I get out of it?” And, mind you, he is usually quite deaf to any sentimental arguments. The benefits of fellowship with the thirty-odd thousand of us who go to make up the elect have no weight with him. He wants—and justly so, again—to see paid down to him in hand the material benefits; the visible and outward signs of those things for which he puts up his dollar per annum (GOOD ROADS 50 cents extra) and for which he even fails to consider the oblong bit of pasteboard bearing the magical name of our venerable secretary *quite* an equivalent.

This being the case, what is to do?

Why, give it to him, of course.

Herein lies, in a nutshell, the secret of that future growth of the organization which can make the League of American Wheelmen that power in the land which it can become under properly directed effort; and that this is no mere visionary theory is proven by the experience of several of the larger divisions. Massachusetts, to-day, leads the League list by thousands only because she has made it an invariable rule to give something to her members regularly, and the annual spring and fall meets invariably demonstrate by the hundreds who are brought into the fold at each of these events that the advantages of free participation in the balls, smokers, excursions and races are thoroughly appreciated and taken advantage of. Pennsylvania owes no small measure of her growth to the fine road books which are furnished to her members free (in Massachusetts the same rule prevails), in addition to the weekly paper which each one of them receives. And here is one of the points which should be emphasized and studied by every chief consul and national and division officers; there is no more potent factor for recruiting and holding your membership than a good weekly paper. The power which lies in this apparently insignificant little matter is only too surely evidenced by the heavy falling off in membership when it was decided to discontinue sending the *Bulletin* to every member of the League who did not pay the subscription price. I once believed in an optional subscription; I do so no longer. Every member should be reached by the official organ—nay, every member *must* be reached by a weekly paper if his division officers are to continue in touch with him. Finally, I am one of those who believe that the L. A. W. should and will publish its own paper, and that it should be as good as the best; and when that time comes those who guide the destinies of the organization will wonder what their predecessors ever meant by refusing to recognize one of the simplest and best methods of answering the conundrum we have had with us for so many years—How To Increase the League Membership.

## THE PATHMASTER.

(After J. Fenn. Cooper.)

THE pathmaster or highway overseer is a study. His hard-worked and lazy fat horses are studies. They work not in the crevices or natural depressions of the earth's surface but dwell long on the hillside and the ridge top.

The President of this great free country is nowhere. The pathmaster is everywhere. The fruits of his labor are to be seen on every side (road side). He works on opposite principles to every theory and established scientific fact. He holloweth out the hollow and heighteneth the height. Water he concludes must run up hill. His work is indeed an example, not to be followed—neither are his highways. His duties are manifold but may be summed up in substance as that of making *good* roads bad and *bad* roads worse.

He goes forth in the early morn (usually at eight or nine o'clock) and finds beside the wayside a motley crew of thin, overworked men and a number of lazy, fat horses, ready and willing to do his bidding. His eagle eye, dulled a little perhaps by the bright sun and flying dust, taketh in the situation. It seeth before it a smooth piece of highway, long the envy of his neighbor, but the pride and joy of the stranger who journeyeth over it. For forty years or more man and beast have traveled over it and no ugly plow furrows have ever ruffled its smooth green slopes and gentle level surface; alas! now so soon to be no more.

The pathmaster, having cheerfully or rheumatically (as the occasion may warrant) greeted each and every member of his little band, straightway orders them to "strike out" and "plow deep" and "scrape high" and before the sun has flown many "moons" across the sky, the wondrous work is complete and he and his men (having first carefully tethered each lazy, fat horse to a fair bundle of hay) lie down in the shade of the nearby willow bushes not to die (as might be supposed) but to rest. In their rapture of the grandness of the monument they have just raised (to their future disgrace) they overlook even the nimble mosquito who is doing his best to extract the balance of their zeal not already spent in their laborious effort to overthrow the laws of nature.

They emphasize and dwell long upon the artistic ridge of earth they have just reared toward the sky. They laugh while nature weeps. They realize now, perhaps for the first time, that they have chosen the wrong calling in life. That hunked-up mass of clodden mud, heaped like a camel's back in the centre and with its water-pits on the side, arouses their enthusiasm as well as the imprecations of the wayfarer.



The pathmaster undertakes also to see that his highways, like the path of life, shall be crooked and narrow, very narrow in fact; it is presumably the following out of this principle which causes him to scrape an extra load of slush on top of a ridge and draw one out of the hole beside it.

The foresight of this mighty man is great, a great deal more so than his aftersight. He is not gratified with a thirst for blood, but pants for glory—and he gets it—from the public that must travel over the road of his making. He is an original designer and his work speaks for itself.

The young man who starts out at dusk when the sun glints across the treetops for the last time and wraps the earth in warm colors, smiles, and steps into his new Concord buggy, for he is going to take Melinda out for a spin, “by forests and everglades fair, over laughing brooks and log bridges.”

The smile, however, soon dies away and furrows of care are gathering on his usually serene countenance. Why this sudden change? Oh, that is easy to tell; he is just passing over the grand byways founded that day by his highness, the pathmaster. He has already exhausted two vocabularies of light words, and his hair is in danger of turning gray, as he reaches the end of the road and turns up the lane that leads to Melinda’s home.

His boyhood smile returns, and his Melinda thinks he looks as calm and complacent as if he had just come from his Sunday School. But woe unto him! For he seeks new highways, where, he says to his enamored, “The old roads still exist and we can whirr and spin with pleasure.” Alas, for human ambitions, his hopes are soon blasted. It is dark, a sudden thump, and he strikes his head through his Concord top, just in time to hear some one ahead call out, “Gee me half road there.” He trembles for well he divines that here on top of this hill the great general who has been superintending those hard-worked men and lazy, fat horses has undertaken to elevate, not alone the hill top, but also the unwary passer-by, but necessity knows no law—half road must be given. The result is evident—a side slide—a new Concord buggy upside down; his Melinda and himself nowhere, if not in a well.

Hereafter this young man and Melinda exercise on foot and rest in a hammock.

There is only one thing more to be done for the pathmaster and that is to grant him a Government pension, *not* for the work he has done, but for the designs he may have on the future (and allow the work to go no further).

## GOOD ROADS THE CIVILIZER.

BY HORATIO CRANE.

THE Railroad commissions, organized under State law to restrain railroads from over-charge, if they have constitutional existence within limitations, still cannot do a great deal to satisfy the complaints as to freight over-charges by rail.

Railroads are costly contrivances, and are maintained at large expense. Suppose the country districts were gridironed with fine dirt roads, then the farmer could drive his team with produce to near markets with ease, and even long distances, if convenient places of accommodation at reasonable rates are maintained.

The country has been neglected because we, as a people, have felt that from its extent and productiveness it could be left to take care of itself, and the farmer from his natural training in economy encouraged this view by resenting any city man's ideas as to "how to do it."

Whoever has slept from twenty to forty miles out from New York or Philadelphia, in the neighboring burgh of New Jersey, may have listened, as he lay disturbed at night by the tramping of the horses, hauling wagon loads of truck to market. The truckers want and must have good roads, and as the cities grow larger, and the farm areas grow smaller, the truckers will increase like the other armies of peace, and good roads will wind and curve through the country, until the inevitable gridiron of fine dirt roads begins to develop, and the impetus started will continue; and the country districts will rise in power and wealth, and become once more as attractive as of old.

Modern taste will not go back to old systems of country living.

The backwoods will do for adventure, or in which to fell the timber for farms, or till the virgin plains; but the country as a whole wants more of country air in the cities, and of city comforts in the country, and the good road is the civilizer that will soonest make this interchange of blessings possible.

When the country was new and the cities small, culture pioneered, charmed with the glory awaiting success. Cities like magic grew, and the farmer became the banker and remained the farmer still. He was a legislator and a farmer still; but the country district has not kept pace with city development, chiefly from the want of good roads, and the country can easily account for loss in population and in calibre as to culture, while the cities acquire the best the country affords.

A good road means a fine breed of horses and money in the

breeding of them. It means a ready exchange within the country districts, of country produce.

It means the ability to at any moment deliver produce or seek a market for it by team.

It means the lordly independence of the farmer because it promotes barter.

It means making the country attractive to visitors, who will seek retired nooks for quiet, assured of delightful drives in getting there.

It means in the country parts a freer, more delightful interchange of social life.

It means happiness and joy where now reigns the dreary monotony that kills.

Then the old-fashioned taverns may come back without the old-fashioned drinking, for they may be places of social interchange, where country statesmen, still in the green state, may put up their teams and enjoy the contest of talk and brighten their wits for higher triumphs.

Dirt roads will solve the monopoly of the railroads. The farmer will cluster about busy centres, content with smaller farms. Busy centres, therefore, will increase. A back country that is handsomely accessible is the very life of the busy centre, and its support.

Then railroad managers, in order to maintain their expensive equipment of men and material, will so conduct their roads, with a view to local traffic, as to tickle the farmer with a victory never before achieved.

Railroads are desirable, but they are most desirable and at their best when they serve the people best, at a fair profit to the corporation, and this can soonest and best be compelled when the country is gridironed with the best dirt roads known to modern means and to modern experience.

Let us respect white hair, especially our own.—*Petit Senn.*

Let us also respect the absence of hair.—GOOD ROADS.

# NOVEMBER

is the time to do several things.

One of the more important of which is to see that the roads are properly graded, and the holes, where water is likely to stand, filled up and got ready for frost. Also see that the drains are thoroughly cleared out.

All stables and sheds, where livestock is to be wintered, should be made tight and warm. The man who is kind to dumb animals will stand more than an even chance both here and hereafter.

Day of Year.	Day of Month.	Day of Week.	Length of Day. H. M.	ELEVENTH ▲ November, 1894 ▲ MONTH
305	1	Th.	10 20	<b>H</b> unger is the best sauce.
306	2	Fr.	10 17	<b>O</b> ut of debt, out of danger.
307	3	Sa.	10 15	<b>W</b> ide will wear, but narrow will tear.
308	4	S.	10 12	<b>G</b> OOD ROADS,
309	5	M.	10 10	\$1.00 per year.
310	6	Tu.	10 08	<b>I</b> f you like it, say so.
311	7	W.	10 05	<b>S</b> orrow will pay no debt.
312	8	Th.	10 02	<b>T</b> o League members
313	9	Fr.	10 00	half price.
314	10	Sa.	9 58	<b>Y</b> ou know the address.
315	11	S.	9 56	<b>O</b> f two evils choose neither.
316	12	M.	9 53	<b>U</b> niversally wanted: GOOD ROADS.
317	13	Tu.	9 51	<b>R</b> ome was not built in a day.
318	14	W.	9 49	<b>B</b> ut it <i>was</i> started
319	15	Th.	9 46	in a day.
320	16	Fr.	9 44	<b>R</b> iches are not all there is.
321	17	Sa.	9 43	<b>H</b> e who is contented is happy.
322	18	S.	9 41	<b>E</b> at what you need and stop.
323	19	M.	9 39	<b>U</b> tility first, beauty afterward.
324	20	Tu.	9 37	<b>M</b> ake your toil a pleasure
325	21	W.	9 35	<b>A</b> nd don't complain.
326	22	Th.	9 33	<b>T</b> ruth needs no prop.
327	23	Fr.	9 31	<b>I</b> t can stand alone.
328	24	Sa.	9 29	<b>S</b> eeing is believing.
329	25	S.	9 27	<b>M</b> uch would have more and lost all.
330	26	M.	9 26	Checks,
331	27	Tu.	9 24	Bills,
332	28	W.	9 23	Silver,
333	29	Th.	9 21	Money orders,
334	30	Fr.	9 20	It is all the same to us.

# LEAGUE OF AMERICAN WHEELMEN.

..... Organized 1880. ....

A voluntary organization having for its object the systematic improvement of the public roads, and the protection of wheelmen against unjust legislation. The present officers of the League are as follows :

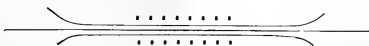
*President.*—CHAS. H. LUSCOMB, 280 Broadway, New York.

*First Vice-President.*—A. C. WILLISON, 47 Baltimore Street, Cumberland, Md.

*Second Vice-President.*—GEO. A. PERKINS, 15 Court Square, Boston, Mass.

*Secretary.*—ABBOT BASSETT, 46 Van Buren Street, Chicago.

*Treasurer.*—W. M. BREWSTER, 411 Francis Street, St. Joseph, Mo.



## GOOD ROADS MAGAZINE.

Published on the first of every month by the League of American Wheelmen.

**Devoted to Highway Improvement.**

STERLING ELLIOTT, *Managing Editor.*

Publication Office, 12 PEARL STREET, - - - BOSTON, MASS.

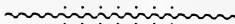
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League Members, 50 cents.  
\$1.00 per year.

Please send Good Roads for \_\_\_\_\_ year \_\_\_\_\_  
To \_\_\_\_\_  
Street \_\_\_\_\_  
Town \_\_\_\_\_  
Amt. enclosed \_\_\_\_\_ County \_\_\_\_\_  
Beginning with \_\_\_\_\_ State \_\_\_\_\_

# Opening of a Chestnut Burr.



ILL-BEHAVED BICYCLE RIDERS  
PLEASE TAKE NOTICE.

Anybody can see through people who make spectacles of themselves.

MOST OF THEM ARE FULL OF  
BOOTJACKS.

Little Dot — Mama says th' cat is full of 'lectricity.

Little Dick—Of course. Put your ear down on 'er an' you can hear the trolley.—*News.*

WAS THIS BASSETT?

He had just worked up to a three-minute gait,

When at this interesting juncture  
His rear wheel tackled a rusty nail —  
And the wind blew through the puncture.

—*Bearings.*

HOW ABOUT GOOD ROADS AT  
ONLY \$1.00 PER YEAR.

Isaacstein — I sells you dot coat, mine frent, for elefen tollars. You take him along?

Customer — I thought you didn't do business on Saturday, Isaacstein?

Isaacstein (in low, reverent tones) — Mine frent, to sell you dot coat for elefen tollars was not peesness; dot vos sharity. — *Ex.*

AN ADVERTISEMENT TAKEN  
FROM AN UNDERTAKERS'  
JOURNAL.

Go to John Smith's for your coffins and undertaker's supplies. I will furnish hearse free to those who buy coffins of me. I am not out of the coffin business, neither do I expect to be till I need one for myself. Give me a trial. I sell cheaper than any house in the West, besides I sell on easy terms if necessary.

Another undertaker in Kansas City, with a rare idea of business, advertises:

"You kick the bucket; we do the rest."

And yet the deceased is supposed to be entitled to the rest — eternal rest.— *Ex.*

ANOTHER EPITAPH.

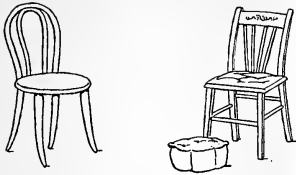
"To the memory of Mary Kent;  
Reader prepare to follow me."

To which a wicked man added in pencil.

"How can we follow Mary Kent  
Unless we know the way she went?"

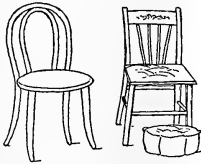
Some people are unwilling to assume anything.

A LOVE STORY IN FIVE CHAPTERS.



At first the bashful lover  
Interviews the modest maid,

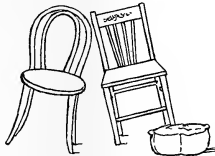
CHAPTER I.



And nearer then they  
hover,  
Though both are half  
afraid.

CHAPTER II.

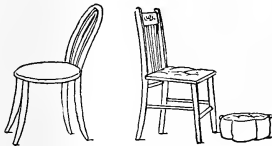
But Cupid  
However great



always triumphs,  
the cost,

CHAPTER III.

Which sometimes is  
apparent  
In a very early frost.



CHAPTER IV.

Whatever wealth time may pro-  
vide,  
Like every spony pair,  
At first they'll be quite satisfied  
With just a single chair.



CHAPTER V.









C. F. KIMBALL,  
Chicago, Ill.

*Chairman Road Committee Carriage Builders' National Association.*

# GOOD ROADS.

Vol. 6.

December, 1894.

No. 6.

## ROADS AND CARRIAGES.

*By Sterling Elliott.*

THESE two subjects are as closely related as are the two subjects of bread and butter. Yes, even much more so, for without the road the carriage would be useless.

Of course the road was a necessity before the wheeled vehicle was known. In olden times freight was transported upon the back of an ass; now the hauling is done on wheels by horses, and it is the ass who spends his time arguing against the extensive building of better roads.

Railroad companies do not consider the subject of building locomotive boilers in which to generate steam, except in connection with the engines which are to utilize that steam. No more do they build any part of a road; bed, ties or rails without considering to the fullest extent the use to which it is to be put, and the rolling stock which is to be run over it.

One of the commonest and best understood principles in human experience is that all co-operating agencies should be devised with a view to results which may be expected; not from either one alone, but from the combination.

Although this is an axiom so familiar to all when applied to other matters, it is too apt to be overlooked, or at least not sufficiently regarded, when the subject of roads and vehicles comes up; in fact the two are rarely planned or built by the same men.

The *public* ownership of roads and the *private* ownership of vehicles unfortunately prevents that close scrutiny of results which would be inevitable if both the tracks and the rolling stock belonged to one organization.

Imagine, if you please, two wagon roads running between two distant points and each owned by a shrewd, intelligent business man, and suppose that these two wagon roads were the only means of communication between those two places; that these two men who owned the roads also owned all the horses and wagons, and thus had a monopoly of all the hauling of both freight and passengers from one place to the other, but that people who furnished the freight were free to patronize whichever road they pleased.



CHANNING M. BRITTON,  
New York.  
*President C. B. N. A.*  
(Brewster & Co., of Broome St.)



HENRY C. MCLEAR,  
Wilmington, Del.  
*Secretary C. B. N. A.*  
(McLear & Kendall.)

In order to make this comparison, we must assume that these two road owners do not form a trust, or pool their interests in any way, but remain in actual competition.

The shipper of freight wants his goods transported as rapidly as possible and with the least injury. If he is to become a passenger, he will demand comfort and speed. He will also take into account the amount which he must pay for this service.

The owners of the roads and teams would at once begin to regard their entire outfit as a "plant," and in order to compete with each other would be obliged to make such improvements as would not only give satisfaction to the customer, but at the same time be profitable to themselves.

No business can go on without in some fashion paying a profit. If a certain improvement in wagons made it possible to haul more load with the same motive power, or to travel faster with the same load, such an improvement would at once be seriously considered. If the new wagon injured the road more than the old one, it would simply be a question of whether the advantages were enough to warrant the increased cost of keeping up the track.

Or, suppose some change in wagons, as for instance, a broad tire, should make the wear on the road materially less without increasing the draft, the shrewd owner of both the road and the wagons would at once consider whether he would not be justified in the adoption of such tires. And surely the improvement would not have to go begging if it were demonstrated that it



G. W. OGDEN,  
Milwaukee, Wis.  
(G. W. Ogden & Co.)



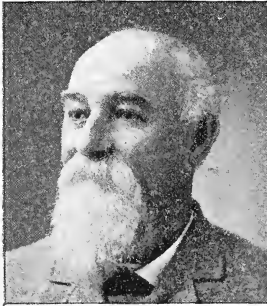
F. D. C. HINCHMAN,  
Detroit, Mich.  
(Prest. Detroit White Lead Works.)

would save in draft as well as in road repairing. Add to this the fact that in purchasing new wagons, as teamsters often have to, they need pay no more for broad tires than for narrow ones, and the question of which to buy would seem to need for its settlement only an understanding of the facts.

Assuming that the roads and vehicles which co-operate to accomplish what we call transportation, do have a direct and definite relation to each other, it is a most interesting and hopeful symptom when we see the carriage builders taking up the subject of road improvement. All the more intelligent makers of vehicles have as individuals been interested in the road question for years, but really effective work on any public reform is only accomplished by organized effort.

The Carriage Builders' National Association is now in its twenty-third year and is one of the best managed and most harmonious organizations in this or any other country. During the present year it has started out to do in its organized capacity what many of its members have long believed in, and so far as possible have used their influence to accomplish.

The executive council of National Carriage Builders' Association has appointed a road committee, consisting of forty-seven members, located in twenty-four States. These are all practical business men, most of them being the heads of the concerns with which they are connected. The chairman is Mr. C. F. Kimball, of Chicago, who is well known as a builder of the very finest vehicles and a man whose reputation needs no commendation from GOOD ROADS. We take pleasure in using his face as the subject for our frontispiece this month and we



W. T. JONES,  
Carthage, N. C.  
(Prest. Tyson & Jones Buggy Co.)



T. J. McMURRAY,  
Marion, Ohio.  
(Prest. McMurray & Fisher Sulky Co.)

are able to show portraits of many other members of his committee. We made an earnest effort to get them all, but this was not possible.

At the recent meeting of the carriage builders in Philadelphia, Chairman Kimball made the following report :

*“Mr. President and Gentlemen of the Convention:—*The subject of good roads was first brought to the attention of this association at the convention at Syracuse, in 1889, when an address was presented by Col. Albert A. Pope, of Boston, who has been prominent for years in this matter, and by his tireless energy has accomplished much good. At that time the association was heartily in sympathy with the movement, but was somewhat appalled at the task of transforming a million miles, or more, of bad roads into good ones, involving, as it did, a complete reversal of old systems, new legislation in all of the States, and in many of these States changes even in their Constitutions. But the movement was then started, and we had our minds turned toward this important matter, and one of such value to our business. Since then, at the annual meetings of this association, this question has come up from time to time, but no real action has ever been taken upon it.

*“At the last meeting of the Executive Committee of this association, a committee was appointed to report at this meeting on the subject of good roads. Our committee is a large one, comprising, so far as possible, one or more gentlemen from each State represented in the association, and right here I wish to say that there is evidently much interest taken by the members*

**CORRECT, THEN YOU MUST BE ALIVE, PHYSICALLY AT LEAST, AND HENCE YOU**



J. A. LANCASTER,  
Merrimac, Mass.  
(J. A. Lancaster & Co.)



L. M. FRENCH,  
Plainfield, N. J.  
(Carriages, etc.)

of this committee in the subject, replies having been received from almost every member of this large committee of forty-six gentlemen, and the great majority of them have taken much time and trouble to collect the latest information on this subject in their respective States, and the committee feels that your interest in this matter is so great that you will pardon a rather long report.

“In the outset, we find the conditions existing in this country very different from those in older countries. In the Old World, from the earliest days, good roads were a necessity for military purposes, and in England good roads were known from the time of Cæsar’s conquest, and portions of them are still in existence, a tribute to the thoroughness of their construction. Next came the mail coach, and the traffic between cities was largely by road. Lastly, the railroad superseded other means of transportation, and yet the countries of the Old World still appreciate the great necessity of good roads as feeders to their railroads, and contributing also to increased prosperity and intelligence among the rural classes. In this country in early days most of our settlements were along the Atlantic and by the great rivers, and while in the Old World the railroad followed civilization, here it may be said to have preceded it, naturally to the neglect of our roads and highways. To-day the United States has more miles of railroad than all the Eastern Hemisphere, and we can well afford to turn our attention to the subject of our highways. This is a subject in which we are all interested, rich and poor alike. The great railroads should contribute largely to these great feeders of their systems,



WM. GLESENKAMP,  
Pittsburgh, Pa.  
(C. West & Co.)



WILLIS E. MILLER,  
New Haven, Ct.  
(Prop. Mt. Carmel Axle Works.)

and the rural classes should be brought to appreciate the advantages of good roads, for with good roads the farmers can easily take their produce to market, and they must learn that it costs less to transport commodities across the continent by rail or from continent to continent by water than it does over a single mile of some of our common roads during nearly one-half the year. It is a matter of record that a few years since, in Springfield, Ill., the price of hay went up to \$30 a ton, and the market was supplied by railroad from outside the State, while on farms a few miles from the city, hay was plenty at \$10 a ton, but completely embargoed by the mud. Numerous instances of this kind could be cited, but we will now call your attention to the present condition of the good roads movement.

“The first general gathering of persons interested in this movement was in Chicago, in October, 1892, and comprised delegates from all the existing State organizations for road improvement, from many boards of trade and agriculture and farmers’ clubs, the wheelmen’s league and the Carriage Builders’ National Association, besides many individual leaders in the general movement. All were enthusiastic in their approval of this great movement and eager to have some work done. The outcome of this gathering was the formation of the ‘National League for Good Roads,’ and the following winter a convention was held in Washington with more than one-half of the States in the Union represented.

“During the winter of 1892 and 1893 Congress appropriated \$10,000, specifying in their appropriation as follows:

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WHICH YOU EAT, USE AND WEAR YOU MUST HAVE TO BUY, AND IF YOU DON'T





LOUIS McCALL,  
St. Louis, Mo.  
(McCall & Haase Carriage Co.)

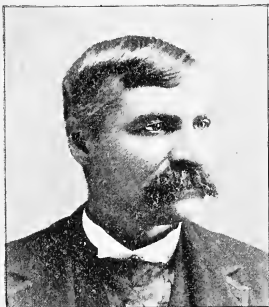


J. W. HENNEY,  
Freeport, Ill.  
(Henney Buggy Co.)

'To enable the Secretary of Agriculture to make inquiries in regard to the systems of road management throughout the United States, to make investigations in regard to the best methods of road-making and prepare publications on this subject suitable for distribution, and to enable him to assist the agricultural colleges and experiment stations in disseminating information on this subject.'

"Gen. Roy Stone was appointed as such special agent and engineer, and by his able management and energy has already accomplished much good. Sixteen States have passed new road laws, more or less radical in their nature, and one has amended its Constitution to permit the adoption of such laws. These States are: California, Indiana, Massachusetts, Michigan, Missouri, New Hampshire, New Jersey, New York, North Dakota, Oregon, Tennessee, Vermont, Washington, Wisconsin, Kentucky, North Carolina, and in every one of these States the departure from the old system has been marked, doing away as far as possible with the old method of working out road taxes by so many days' labor on the roads. When the farmers gather together without definite knowledge of what they wish to accomplish, the supervisors under whom they work do not care to show power over their neighbors, and the result is a general interchange of gossip and very little work done.

"Indiana has some good laws on gravel roads, and during the last few years great improvements have been made. The Parry Manufacturing Co., of Indianapolis, has issued a very instructive map showing the whole State of Indiana, and just



C. H. STRATTON,  
Buffalo, N. Y.  
(C. H. Stratton Carriage Co.)



FERDINAND F. FRENCH,  
Boston, Mass.  
(The French Carriage Co.)

where good roads exist, something that we wish could be done in every State, and in this way the people could plainly see how few or many good roads they have, and encourage them to bring pressure to bear upon the Legislatures for action.

“Pennsylvania has not made many new laws, but there is now a law being prepared on this subject to be presented at the next meeting of the Legislature, and from many reports received we learn that there is an increased interest among many of the counties and much work is being done.

“Delaware has no State laws on this subject, but the people are becoming alive to the subject, and many improvements are being made.

“Wisconsin enacted some good road laws in 1893, doing away with the labor tax. Now all taxes are to be paid in money, and good results have followed.

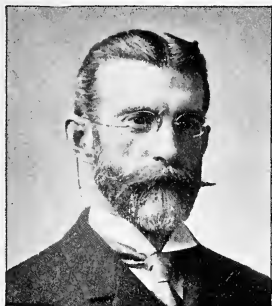
“West Virginia.—Here the people are interested in the question, and we learn from the member of our committee in that State that some action can soon be expected.

“Georgia.—A road conference was recently held in Atlanta, and while no laws are in operation, such laws are soon to be expected, and the State officials are deeply interested, and the people are awake to the advantages of good roads.

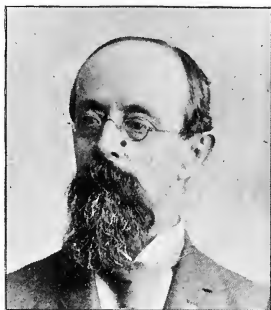
“Colorado.—This State has no special laws on the subject of improving their highways, their natural roads being, as a rule, as good as the improved roads in the East. The character of the soil is sandy loam, and is such that the roads dry very readily by absorption and evaporation.

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THEM, YOU MUST PAY THE MARKET PRICE. ARE YOU AWARE THAT THIS



GEO. W. JOYCE,  
Washington, D. C.  
(Andrew J. Joyce's Sons.)

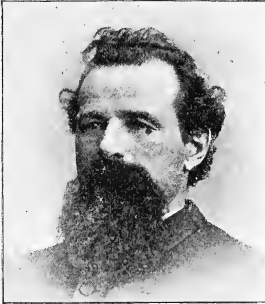


THOMAS M. SECHLER,  
Moline, Ill.  
(V. Pres. D. M. Sechler Carriage Co.)

“North Carolina.—This State is making a rapid advancement in the matter of good roads. On the twelfth of last month a largely-attended State Conference was held at Charlotte. The member of our committee from this State is also prominently interested, and reports that the people are awake to the advantages of good roads. Under laws recently enacted, county commissioners have full control of all expenditures, and all jail prisoners and State prisoners for a term of less than five years, and vagrants, are available for highway work, and Court may sentence convicts to hard labor on the public road for not exceeding ten years.

“Illinois has no special laws on this subject, but such laws are now being prepared. The State officials are interested, and we may look for some definite action at the next session of the Legislature. This State will find it difficult to compete with many of the other States in the matter of good roads, for, while its soil is rich and fertile, there will be great difficulty in many parts of the State in securing a proper foundation for roads; but the railroad companies have offered to transport stone at nearly a nominal figure for this purpose, and the people are beginning to realize how good roads would benefit them in every way.

“Michigan has a county road system, and while the reports carefully prepared by the members of our committee from that State, from over one hundred different points, all agree that there have been improvements made in the last few years, yet all object to the system still in vogue there of the road taxes being worked out by farmers, which, they say, is only useful



TOM CONNOLLY,  
Dubuque, Iowa.  
(Carriage Manufacturer.)



JOHN G. HESS,  
Hagerstown, Md.  
(Pres. Hess Mfg. Co.)

as a neighborhood reunion, and that the work is supervised by too many cheap politicians instead of practical road builders.

“Maine and Connecticut have no road laws, and both of these States have the same complaint as others where there is a labor tax to be worked out by the farmers. Many improvements are reported, however, in and about large cities and towns.

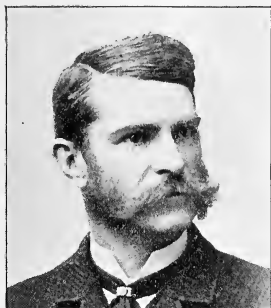
“New Hampshire has county road laws and good natural roads, but like the other States suffers from the labor taxes.

“New York.—A State road law was proposed a few years since, known as the Richardson bill, whereby the cities would pay three-fourths of the cost of State road construction; but, strange as it may seem, it was defeated by the farmer element. There are, however, many good township roads, especially about Canandaigua, which may serve as a model of utility and low cost. It was hoped that good results would come from the Optional County Road Law, passed last winter by the strong efforts of Governor Flower, but the results have not been satisfactory, as board after board of supervisors have rejected it. The State also appropriated \$15,000 for the purpose of trying convict labor on the roads. The results have been most satisfactory. One of our members has a communication on this point.

“Iowa has no particular laws on the subject of good roads. A certain per cent of road tax is levied each year, a small portion of which is payable in cash for repairing bridges and such work, and the remainder is worked out by the farmers under

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CONDITION OF THE HIGHWAYS? BUT OF COURSE YOU ARE AWARE OF IT.



H. A. LANMAN,  
Columbus, Ohio.  
(Pres't. Columbus Bolt Works.)



J. E. CRANDALL,  
Providence, R. I.  
(Carriage Manufacturer.)

the guidance of a road supervisor. The supervisor often does not own any real estate, and is generally entirely ignorant of road construction, so with the farmers in working out their taxes it is generally a "go as you please." There is a marked difference in the condition of the roads, however, of late years, as the farmers are waking up to the benefits of good roads.

"The two States that are the most advanced in the matter are Massachusetts and New Jersey. Massachusetts has, under the law of June 10, 1893, a highway commission of three competent persons, appointed by the Governor; then there are also the usual boards of road commissioners in each town, and when they request a road to become a State highway, upon presentation of such request, the Board of Highway Commissioners refer the matter to the Legislature for their adoption. The road is then built and owned by the State. The custom of each man working out his road tax is obsolete in this State. The tax is a money one, and the work is done by competent men. The Legislature of 1894 made an addition to the previous law, whereby it is proposed to have two or more roads running east and west the whole length of the State on the customary and natural lines of travel, taking the existing county and town highways and placing them wholly or in part under such control, and so improving them as to form a continuous line of travel over a splendid road from one end of the State to the other. At first the farmers opposed such action, but now they understand the advantage of having a good road running by "their place," and are coming into sympathy with the work. Among all the States that have taken action in this matter,

EXTENSIVE EFFORTS ARE BEING MADE TO IMPROVE THE ROADS. MUCH HAS



W. C. DALZELL,  
So. Egremont, Mass.  
(Pres. Dalzell Axle Co.)

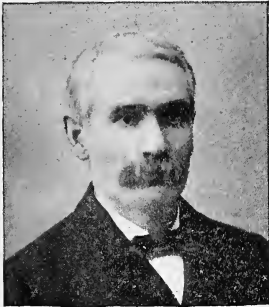


WM. G. HOFFMAN,  
Cleveland, Ohio.  
(Wagon Manufacturer.)

New Jersey seems to have the best plan. Their laws are known as the New Jersey Local Option and Co-operation Plan. This plan in detail is as follows :

“The law provides that ‘whenever there shall be presented to the Board of Chosen Freeholders of any county a petition signed by the owners of at least two-thirds of the land and real estate fronting or bordering on any public road or section of road in such county, not being less than one mile in length, praying the board to cause such road or section to be improved under this act, and setting forth that they are willing that the peculiar benefits conferred on the lands fronting or bordering on said road or section shall be assessed thereon in proportion to the benefits conferred, to an amount not exceeding ten per centum of the entire cost of the improvement, it shall be the duty of the board to cause such improvements to be made; provided, that the estimated cost of all improvements made under this act in any county, in any one year, shall not exceed one-half of one per centum of the rateables of such county for the last preceding year.

‘And be it enacted, that one-third of the cost of all roads constructed in this State under this act shall be paid for out of the State treasury; provided, that the amount so paid shall not in any one year exceed the sum of \$75,000; if one-third of said cost shall exceed said sum, the said \$75,000 shall be apportioned by the Governor and the President of the State Board of Agriculture amongst the counties of the State in proportion to the cost of road constructed therein for such year, as shown by



JOHN M. SMITH,  
Atlanta, Ga.  
(Carriage Manufacturer.)



N. ROBERTSON,  
Denver, Col.  
(Pres. Robertson & Doll Carriage Co.)

the statement of costs filed in the office of the President of the State Board of Agriculture.'

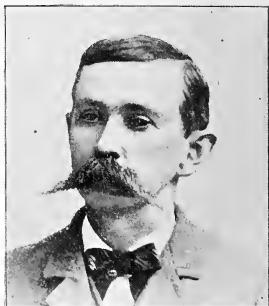
"Too much cannot be said of the good effects of this law. It does not require the education of the whole county to start the work, and the object lessons with which it is filling the State are fast completing the general education of the people on the road question. It helps those who help themselves in a practical fashion, and no locality can be jealous of the work given to others, as the same help is offered to all.

"In summing up the conditions of the laws in our various States on this subject, your committee recommends the adoption of road laws similar to those in vogue in Massachusetts and New Jersey—the doing away with the working out of taxes on the road, and that the work be done by men under the direct employ and supervision of competent road engineers. This opens up a vast field for the employment of convict or unemployed labor and vagrants, as may seem expedient to each State. The road tax to be paid in cash, and that due regard be had to the fact that in many counties the taxes are already very heavy, and that this work should proceed slowly, and not by too rapid strides and too high taxes, and thus gain the ill will of the farmers and other taxpayers.

"Another subject collateral with good roads and highways, and within the province of this committee, is the subject of wide tires on traffic vehicles. Your committee are almost unanimous and strongly in favor of wide tires for all traffic vehicles, not only that it is an economy in power of hauling,



F. T. CLYMER,  
Wilmington, Del.  
(Prest. F. T. Clymer Co.)



S. R. BAILEY,  
Amesbury, Mass.  
(S. R. Bailey & Co.)

but also tends to improve the highways. Many instances might be cited, but there are none better than the experiment made by the Studebaker Bros. Manufacturing Co., the results of which are detailed in the GOOD ROADS magazine for March, 1893, as follows:

'These experiments prove that across fields a three-inch tire has an advantage over a one and a half inch of one-eighth in starting a load, and one-seventh in pulling it after starting. This advantage, together with the lessened liability to cut through and kill the grass of newly-seeded fields, must gradually lead to the introduction of wide tires for farm wagons, and when used on farms they will be used on roads. The test also showed an advantage in starting a load on hard road of one-sixth in favor of the three-inch tire over the one and a half inch, and a small advantage in favor of a four-inch over a one and a half inch in starting and hauling over sandy and gravelly roads, but a slight disadvantage in the wide tire on muddy road and block pavement.'

"Your committee would also call your attention to the question of varying tracks. For many years this association has been on record in the matter of uniform tracks throughout the States, but your committee are of the opinion that where good roads are once built they can be maintained and kept in order more satisfactorily at far less expense if the traffic vehicles have wide tires and vary in track. All the evidence on this subject goes to show that vehicles with wide tires and varying tracks improve the roads instead of cutting them up and making ruts.

AGITATION, IT IS STILL AT WORK. YOU ARE RECEIVING SOME BENEFIT FROM





H. D. JOHNSON,  
South Bend, Ind.  
(Studebaker Bros. Mfg. Co.)



D. E. CLAPP,  
Auburn, N. Y.  
(E. D. Clapp Mfg. Co.)

“In conclusion your committee beg to present for your discussion and action the following resolutions :

WHEREAS, The Carriage Builders' National Association of the United States, assembled at their twenty-second annual convention in Philadelphia, on the 17th day of October, 1894, having listened to the report of their committee on the subject of good roads, wide tires and varying tracks for vehicles, and after full discussion of the same, it is hereby

*Resolved*, That as carriage builders we are vitally interested in the subject of good roads in the United States, and do hereby extend to the National League of Good Roads and the League of American Wheelmen the assurance of our hearty co-operation.

*Resolved*, That the secretary of this association be instructed to issue in pamphlet form a summary of the best road laws in this country, and the results of same, so far as known, with cost of roads and methods of construction in various parts of the country, and mail a copy of same to the governors and other State officials of each State, and a copy to each member of this association, who, it is hoped, will urge upon their local officials immediate action.

*Resolved*, That, as an association, we urge upon the different States the passage of laws requiring wide tires on all heavy traffic vehicles, the width of tire to depend upon the weight of vehicle and usual load, and due regard being paid to the nature of the soil.

*Resolved*, That, as fast as the condition of the roads in this country will permit, we recommend the use of vehicles of varying tracks, and feel that we will then create vehicles that will be road-makers instead of road-destroyers.

“In the course of the discussion that followed the reading of the report, Mr. Studebaker said : ‘I believe there is no question before the American people to-day that is of more interest to the welfare of the farmer, the manufacturer and the merchant than this question of good roads. [Applause.] There is no heavier tax paid by the farmer than the tax of bad roads. I know it is a very sensitive question to place before the farmer, to ask him to be taxed for the improvement of roads. We know that it is a sensitive question to ask the people in our cities to improve the streets, but after the streets are once improved there are very few but what would be willing to pay double what it cost rather than to have them removed.’”

THAT WORK ; WE ARE GLAD THAT YOU ARE. DO YOU BELONG TO THE LEAGUE ?



W. E. WELD, JR.,  
New Haven, Ct.  
(Sec. and Treas. Boston Buckboard  
and Carriage Co.)



J. D. DORT,  
Flint, Mich.  
(Pres. Flint Road Cart Co.)

After a number of members had expressed similar views, at the invitation of the president, Sterling Elliott, editor of GOOD ROADS, spoke as follows:

"The teamster objects to being *forced* to use wide tires, because he says he pays taxes to make good roads and he doesn't want to be made to do it any other way. It is true that a wide tire is not quite an advantage in wet weather on a clay road, as the mud sticks to the tire and makes it pull a little harder. It is true that it pulls slightly harder on a stone pavement; but it is also true that it makes an immense difference to the *pavement* whether the wheel and its load rest on one stone or two. Where the stone is broken the narrow tire sinks into the hole, and as it becomes deeper the wheel strikes with accelerated force, making the hole larger and larger and deeper and deeper, while a wide tire will perhaps bridge the hole and be prevented from sinking into it as the narrow tire does.

"The teamster says, when he makes his objection to the passage of wide tire laws, 'I am in business to make money, and not to make roads.' This objection on his part is a very strong argument — I might say, a conclusive argument — to prove that the wide tire does make roads, though such an argument is hardly needed at this date.

"Assuming that it takes more power under *some* conditions to haul a wagon having broad tires, it will always be noted that it is on roads which are not traveled universally by wide tires. If they were, even this objection could not be made.

"And, after all, who should do most toward improving the



ZENAS THOMPSON,  
Portland, Me.  
(Zenas Thompson & Bro.)



W. F. BENNETT,  
Greenland, N. H.  
(Carriage Dealer.)

highways, the people who make direct use of them, or the people who do not? The teamster objects to doing more than his share toward road improvement. I freely admit that no man should do more than his share, but I do claim that the teamster's share is more than that of a man who does not directly make use of the roads.

"I *don't* think you ought to *force* a man to use wide tires at first, but should make it an *object* for him to do it. The Michigan people have done a right good thing.

"I *do* think if you pay a man a premium in the form of a reduced tax, for using wide tires, or by a little additional tax on his wagon with narrow tires, you will succeed in obtaining the desired point and he will not know that he is being *made* to use the wide tire, and you will succeed better with this method than if you attempt to *force* him to adopt it.

"Now, about roads. The drainage of roads is the most important thing. Take a road made of prairie mud, built where they can have no stone or gravel. If it is made with proper drainage, so that the surface is kept free from standing water, it makes a pretty good road. It is the *best* road when it is dry, and a *good* road all the time. It should be made and repaired by an expert. The farmer *knows* that he cannot build wagons for himself; he goes to you gentlemen if he wants a wagon; but he thinks he can build roads, because the road is made of dirt, and he thinks he understands dirt, and that he can certainly make roads with it.

"Let him pay his taxes in money and have the roads built by somebody who knows *how* to build them. It is a most important fact that much better roads can be built with the

money that is *now* spent, and without increasing the cost a cent. What they want is to be educated how to do it.

"Instead of trying to build a mile of road 24 feet wide, build two miles 12 feet wide, or still more, 8 feet wide. A dirt road is best when it is dry. A stone road is best when it is wet; a stone road *wears* best when wet, and a dirt road *wears* best when dry. The road might be built of stone on one side and dirt on the other, the stone road being on the right-hand side, so that the wagons would use it when loaded and going to market, and the dirt road on the way back.

"Now, in connection with the wheelmen, I think I may say, without any discourtesy to you, that he is not appreciated by you gentlemen. Of course there are many boys, hoodlums, and others, who at times tend to bring the wheelmen into bad repute, but we are now taking in a more dignified class of men, and are going to offer a resolution at the next meeting of our Association to the effect that no wheelman who breaks the ordinances or regulations of any community shall be entitled to retain his membership in the League of American Wheelmen. We have thirty-five members to one of you, but I will admit, for the sake of politeness, that it takes thirty-five of us to equal one of you. [Laughter.] And I will ask you to do me the courtesy to believe that we are at *least as important as anybody* on the question of good roads. We have spent \$40,000 in money, and have the only magazine devoted to that subject, and it is published at a loss, simply because we are extending it so far and fast that it can't pay; we don't want it to pay, but are doing it in the interest of good roads. We are going to keep up the work, and we hope you will look on the wheelman as kindly as you can.

"I want to tell you that it was the wheelmen who started the good road movement, for the reason that the carriage men didn't know about it; the *horse* knew about it, but couldn't talk. As soon as man began to be his own horse, he realized the power it took and commenced to make a fuss about it, and he saw other wheelmen, who agreed with him, and they commenced to organize and we are now doing more for good roads than anybody else is or has been doing.

"Now that you carriage builders have started in earnest, we want to ask you, in all justice, to join with us for better highways, strengthening each others' hands in every way possible. One of your members (Mr. Emerson) said to me, 'Good roads make good people,' and good people are what we want. That is the idea exactly. Good roads not only make good people, but they enable good people to earn good money with which to buy good carriages."

[For additional portraits and names of members of carriage builders road committee see page 323.]

## ANOTHER PLAN FOR RAISING ROAD MONEY.

BY J. M. MARTY.

**N**OTHING can be said in favor of our mud roads, nothing in favor of the system by which they are kept; it is as old as it is ineffectual, as clumsy as it is disgraceful.

Gotten up in the first place as a make-shift, it is a make-shift to-day, filling here a bad hole with worse dirt, putting a new board upon a rotten stringer some other place.

Good road building is a science, a trade and an art combined; worthy of the attention and ambition of the best intelligence in the land, and as useful and as much needed as anything we may think of. All that has been done in that direction is small in comparison with the tremendous task before us, for this and the coming generations. No single corporation, no city, county nor even state alone can monopolize this great work; it is of national importance, and a national *duty*.

Why cannot road building be made a branch of study at West Point and Annapolis? Turn the swords into plowshares, lay aside the uniforms, and send the coming warriors over our plains in the more useful and profitable garb of road builders.

It takes more than a farmer's or a politician's training to properly lay out a public road, to drain it, and cover it properly with suitable material; nor is the material the same everywhere; it may be good gravel, it may be hard rock, all limestone or part limestone.

Whatever considerations of distance from quarries and pits may demand, above all, it is a question of money in the first place, and a question of judicious distribution of such roads in the second place. It is the money question which is the most important and difficult in the road problem, the point which causes all of our patching and tinkering, and deeper mud every year. As our government is supposed to be for the greatest good of the greatest number, and as half (at least) of the population of the United States are directly or indirectly suffering from our road system, and have a right to be heard, and to be helped, why not ask Congress to take the road question in its hand, about in this shape:

Let the United States issue money of common or special green, gray or yellow back shape, to the amount of say twenty dollars for each inhabitant of the country; to be issued in not less than six, not more than twenty years, equal amounts every year; then come to the towns, cities, villages, counties, and

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FOR ONE YEAR. WE HAVE ON HAND A FEW SETS OF BACK NUMBERS, BOTH

make the following offer: That they shall receive their respective quota from the Government, viz., twenty dollars for each inhabitant, provided, that each town, city or county shall raise an equal amount of money with which to build macadam or gravel roads of suitable width on such lines as may be determined by United States engineers, acting with county and town commissioners, which lines should form a continuous network through the county at nearly regular distances apart. These roads to be built under the management of United States engineers, who should, in conjunction with the local authorities, spend the money for that purpose, beginning where better roads are most needed.

Should more than one-sixth of the towns apply the first year, preference to be given to first applicants, and the balance to take their turn as soon as the next allowance became due. Thus would the work be spread over a longer period, and investments in hauling, crushing and quarrying machinery be made easier and more profitable.

It costs from five hundred to five thousand dollars a mile to put the roads in good shape, and it would take a large sum of money to do it. But is there a work or enterprise to-day that would prove a greater blessing?

It cost many times as much to free four millions of colored people. And this would practically set twenty millions of white folks out of the slough of despondency on the paved road to success.

Kingdoms in extent have been given to railroads, millions of dollars beside, and still their toll is heavy.

Why not call on the nation, of which we are a part, to give us our portion of what belongs to us? One hundred and fifty millions a year in good paper, with the honor and word of a great prosperous nation to back it, spent for a grand, noble and peaceful and paying investment, certainly never would lower our credit nor burden the treasury.

Think of the struggle for life thirty years ago, and with all the mistakes, misfortunes and dark days, money came forth, millions after millions, to be spent in war, to be shot away, burned, destroyed.

Now we only ask for what is intended to stay; every dollar to pay highest interest in freeing us from the bondage of mud and consequent idleness.

There can be no doubt as to the constitutionality of the Government's help, no doubt as to our right to be heard, nor as to power and ability of the Government to carry it out.

But the patient suffering countryman must be heard from, again and again, and louder every time. More than silver

dollars and warehouse schemes we need good roads, and if incidentally prices should come to a standstill, it would be a blessing to a man who has a mortgage to pay.

If "Black Beauty" were in the United States, quite likely another chapter would have been added to the book; her complaints about roads.

Money so issued by the Government could be converted into low interest bearing bonds, after a certain lapse of time from the issue; this would counteract any deluge of fiat money, and would besides bring the money thus issued in greater demand.

We have at present no issues at hand in our public life that compare with the magnitude, the necessity and far-reaching benefits of this road question.

It touches all alike, from the richest railroad king to the cheapest laborer, and is worthy of the attention of the grangers, the Alliance, and any other farmer's or mechanic's political or social body. The people need it, are entitled to it, but it needs a systematic pushing, first to find what they really want, and then to learn how to get it. But the men who will accomplish it will rank as benefactors second to none.

**I**F the owner of a skating rink has a right to say what sort of skates shall be used in it,

If the owner of a billiard table has a right to say what shots shall not be made on it,

In fact, if any owner has a right to control the property owned, then the government of a certain area, as, for instance, a State, has a right to say what use shall be made of the roads which it must maintain.

\* It is not a privilege, it is the duty of a State government to see to it that its highways are not misused.

## THE FEASIBILITY OF MACADAM ROADS IN PRAIRIE COUNTRY.

BY HORACE G. KAUFFMAN.



H. G. KAUFFMAN.

THAT eminent American statesman and patriot, Henry Clay, was traveling one springtime from his home in Kentucky to Philadelphia. When nearing the end of his journey, and while riding with the driver on the box of a stage coach that was speeding along a macadam road, he suddenly found himself thrown from his seat and rolling several times over along the side of the track, caused by the overturning of the stage from the horses shying at an unfamiliar object. None of the passengers received bodily injury, but Clay was more or less

covered with the fine particles of the stone of the road bed. Shaking and brushing these away, he remarked to a fellow passenger, "This is an instance of Clay of Kentucky being mixed with limestone of Pennsylvania."

Instead of journeying eastward, if in those days Clay ever came north at the same season of the year, over the highways of Illinois (and I shall suppose for my purpose that he did) his experience was doubtless different. The stage in all probability did not upset. There was a mishap, though, but of a more simple kind—the stage stuck fast in the mud. After the whole day had dragged its slow length along, without the horses getting out of a walk, just at nightfall, in a lonely spot, the wheels went down *nearer* the hub, the horses stopped, and there they were.

Then when the passengers got out, the horses, relieved of their load, tugged away and raised the wheels from their miry depths, the extent of which by that time each passenger was experiencing for himself. Clay of Kentucky was again mixed with the material of the road bed, which in that case was not particles of Illinois limestone, but the black, pasty mud of Illinois soil. There was plenty of limestone at the nearest



quarry, a mile away, but the road was wholly and wofully without it.

It is true that as far back as 1850 Illinois was a comparatively new State, and improvements of all kinds were in their infancy, but after nearly a half century, during which phenomenal progress has been made in so many directions, our common roads are just the same that they were in the early days. Each year our experiences on our highways are precisely those of the early settlers. In the summer and fall our roads are excellent; in the winter and spring they are among the worst in the world. In the words of Mr. Brown, master of the Connecticut State Grange, "They are imaginary pathways composed for the most part of fearfully realistic quagmires, washouts, thank-ye-marms and profanity."

I make frequent drives to Oregon from the east edge of Mt. Morris. When roads are good, I often get over the distance of five and one-half miles in thirty minutes. When roads are bad it takes from an hour to an hour and a half. Several years since while in the East, I drove over a hilly but good Macadam road a distance of nine miles in March, when the weather was cold and dry; returning a week later when there had been rains and the dirt roads were soft. The time occupied in going was one hour and a quarter; the time in returning one hour and a half. Such is the difference between a dirt road and a macadam road in the one item of time. Now, when to the saving of time there is added the saving in wear and tear of horse, harness and vehicle (as well as in the sweetness of temper of the driver) together with the satisfaction that comes from a brisk trot instead of a slow walk, the ability at any time to draw a full load instead of a half one, and in general the easy communication on every day of the year between homes in the country and between town and country, whether for purposes of trade or social pleasure. When these are some of the things that distinguish the two kinds of highways, it goes without question that everybody desires macadam roads.

No, not everyone. A man I know, born and brought up in Illinois and who had never traveled on any but dirt roads, spent a month in the East not long since, and while there did some driving on a macadam road of the first class. He did not like that kind of road, he said. It was too solid, and it was noisy. Fortunately few are so sensitive.

Yes, the expression of opinion is practically unanimous in Illinois, as well as elsewhere, that permanent roads are very desirable. But those of us who say, "Let us go ahead and make them" are met with the objection that they are expensive. We are reminded that material cannot be had along the

roadside and in adjoining fields as it can be in the East. It is probable, the objectors say, that here and there in Illinois, where the supplies of stone are more numerous and abundant than they usually are on the prairies, macadam roads can be made. But not extensively, because for most of the road making the stone is so far away that the necessary expense of hauling them long distances would be so great as to make the project impracticable. The most we can do, they say, is to macadamize for a few rods here and there at the worst places, but as to a system of hard roads, that belongs to the category of the impossible. It will do to dream over. It is Utopian and Sir Thomas Moore did not write of Illinois; "If it be ever realized the time will be when seasons are never late, when crops never fail and when farmers are millionaires."

The matter of expense is an important and a necessary one to consider. And as to that, is there any system of road making that could possibly be more expensive than our present one? What have we to show for the money and labor that have been put upon our highways for the past twenty-five years? Absolutely nothing, unless it be that in some instances the roads are worse since they have been "worked" than they were before. Whatever is done one year must be done over the next and should be repeated oftener.

The meagre benefits are soon gone and so is the money.

To this direct loss must be added the indirect, but just as real losses already referred to, viz., suspended traffic, half loads, wear and tear, double time, etc., and when all are considered, if a committee of engineers were appointed to bring forward the most costly system of roads that they could devise, it may be seriously questioned whether they could improve on what we now have. Midas alone could have with reason adopted such an extravagant plan.

Isaac B. Potter in an able article in the *Century Magazine* for April, 1892, says, "Measured by every rule of economy, public or private, these common roads of the United States are not only the worst in the civilized world, but in labor and money we are spending more to carry on a so-called system of inefficient and shiftless maintenance, than would be sufficient to keep in proper repair double the length of high class roads under the methods pursued by France, Italy and other European States."

Now, while it is clear that macadam or telford roads are in the long run less expensive, the making of them does require considerable outlay. Fortunately the agitation for better roads for this county (Ogle) has reached a point where we are beginning to know just what macadamizing will cost. The experiments made in some of the townships during the past year, a

report of which has been made to the Secretary of the Institute, give just the facts needed. In Mt. Morris township 80 rods were macadamized. When the width of the track was 16 feet and the depth of stone at the middle was 12 inches, crushed stone being used in all cases, the cost was \$5 per rod. Perhaps this is not far wrong, one way or the other, from what the cost will usually be. At that rate the outlay will be \$1600 per mile. That is a good deal less than the figures sometimes given by writers on the subject.

Taking that amount as the probable average cost in Ogle County, it is entirely and easily feasible for some of the townships, and within reach, I believe, of most of them, to make each year from a half-mile to a mile of macadam road, that, with slight repairs, will last a century, and accomplish it with little or no increase of present taxes, provided two things are done.

First. Give up making dirt roads. At least after the road has been *once* graded, let that suffice. After that the absence of the grades will be neither noticed nor felt by any one, unless it be the road overseer, or perhaps the "able bodied substitute," who in the convalescent condition in which he often appears, may like Othello, "find his occupation gone." I drive over stretches of road that have not, to my knowledge, been touched by a grader for five years, and they are essentially just as good and just as bad as other parts of the same road where the grader has been used every other year. The money thus saved can be made part of the fund for macadamizing. It will not be a large sum but it will keep.

Second. Instead of having the road tax "worked out," have it all paid in money. Vote on that next April in townships that have the labor system and carry the election, not by but for cash. It is conceded by all who have had anything to do with it, that the system of working out the tax is unreliable, inefficient and costly. The matter should be strictly a business affair. But there is a numerous kind of taxpayer that does not view the matter in that light. He does not think of himself as working for pay, but rather as bestowing his services upon his country. He works accordingly. His composure of manner is equalled only by his deliberation of movement. The latter is especially noticeable. He seems to have taken for his guide the motto of the Spanish Americans in certain of the South American States, viz., "He that makes haste dies; he that does not make haste, dies also." The situation readily lends itself to oft-repeated chats with his fellows, among whom are those of like leisurely ways with himself. Together they lighten the eight hours of toil (?) with now a jolly tale that sees

*"Laughter holding both his sides,"*

and now a lengthy argument on the tariff, proving conclusively that the tariff is a tax and equally conclusively that it is not.

And so the day passes.

Those who would render adequate service, can't go ahead alone, and besides are often hindered by a lack of knowledge of the work in hand. Frequently the road overseer knows no more than the others and, despite a belief to the contrary, to make properly even a dirt road requires a particular knowledge of what to do and how to do it. Of course this is true to a far greater degree in the construction of macadam roads.

In the apt words of J. M. Olin, Esq., of Madison, Wis., in an address before the State Agricultural Society, "A good road is not made by accident, nor maintained by ignorance."

As a business investment the labor system probably never pays over fifty cents on the dollar, and as a rule not that much. Says Attorney Olin, "One of the commissioners appointed by Gov. Winans, of Michigan, to report a plan of road legislation for that State, a man who, for twenty-five years had been a highway commissioner in his town, which for ten years has collected its road tax in money, said in a recent letter:

"I would much prefer twenty-five cents in cash to the average day's highway labor, as it has been and is being performed in this State."

"The late Gov. Hovey," says M. Studebaker, "in his last message, estimated that between two and three millions of dollars in money and labor had been expended upon the roads of the State during the year ending October, 1890. The amount was sufficient to build six or seven hundred miles of substantial macadam roads, of a nature, with light repairs, to last a hundred years. Instead of such an enduring improvement to show for this great outlay, for the most part the work done was more appropriate for the preparation of an onion bed.

It would be better for a country to build five miles of good macadam road each year and let the remainder of the roads alone, than to continue the course usually followed."

It must be remembered that under the labor system as provided for by our statute, all of the tax for road purposes levied by the commissioner of highways on property lying within the limits of an incorporated village goes to the village authorities for streets, whereas under the cash system only one-half so levied is paid over to the village. The latter way is right. Every village is directly benefited by good roads in the surrounding country, upon which it depends in large measure for its business.

One of the commissioners of Hardin County, Ohio, which has constructed a system of macadam roads under a late law,

wrote of the value to his town of Kenton of good roads in a letter to Mr. Olin as follows :

“ During one day in January last, when the weather had been a little open and soft for some days, I had occasion to go over to the county seat of the adjoining county of Wyandotte, Upper Sandusky. I found the entire town and surrounding country stuck in the mud. Not half a dozen teams to be seen on the street during the day ; business of every description at a standstill, and business men said to me that this was a fair sample of what they had experienced for more than two weeks, and they rightly and clearly attributed it all to the want of improved roads.

Upon my return home in the evening, I found it had been a busy day in Kenton and a great many farmers had been to town. One of our police officers had taken the trouble to count the conveyances at two o'clock hitched in and around the business part of the town. They numbered over six hundred. This demonstrated pretty clearly that pikes will tell.

Putting together the money wasted in making dirt roads, and all the money obtained from having the road tax paid in cash, excepting what must go for bridges, will give a fund in every township that will build the major part of a mile of good macadam road, and in some of the townships a full mile. That is enough to be appreciated even the first year, small though it is, and continued year after year, according to a system, will in a reasonable time, gradually but surely, result in macadamizing the roads of heaviest travel. That is a “ consummation devoutly to be wished,” and we shall have something to show for the money expended.

I imagine, however, that the small beginning will have larger and quicker results. After the first few miles of permanent roads are made and all the people see for themselves what such roads will do for them, they will like the investment so well that the fund for it will be increased and the good work pushed more rapidly. Then in less time than would now seem probable, each township will be crossed from north to south and east to west by at least one macadam road, with others soon to follow, until all the principal highways, together with their feeders, form a system of excellent hard roads.

In some localities a start has been made. This is true at Rockford, and notably so at Dixon. When the same may be said of every locality and the matter has gone forward to a completed system, then some future student of economic questions will doubtless say of the great State of Illinois what is now said of France, viz. : “ The road system of France has been of equal value to the country, as a means of raising the value of lands, \* \* \* with the railways.

It is the opinion of well-informed Frenchmen who have made a study of economic problems, that the superb roads of France have been one of the most steady and potent contributions to the material development and marvelous financial elasticity of the country. The far-reaching and splendidly maintained road system has distinctly favored the success of the small landed proprietors, and in their prosperity and the ensuing distribution of wealth lies the key to the secret of the wonderful vitality and solid prosperity of the French nation."



#### A COMMERCIAL QUOTATION.

"Is there anything in this for me?"

This is a question which most men are apt to *think*, even if they do not *ask* it.

In working for improved roads we need use no argument other than that it is directly *profitable* to have them. Sentiment is all right in its place, but the building of roads is strictly business and need be considered in no other light.



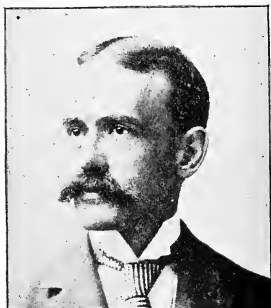
GEO. W. HOOVER,  
York, Pa.  
(Vehicle Manufacturer.)

We sincerely hope that all L. A. W. members who are in earnest on the subject of wide tires and road improvement will become acquainted, if they are not already, with the members of the Carriage Builders' Road Committee who live nearest to them, and in all matters of importance let us co-operate so that the greatest results may be obtained, with the least possible waste of energy.

If any road or tire legislation is contemplated in your locality, be very careful to see that all who are interested on the right side of it are brought together so as to work in harmony. Carriage builders willing to lend a hand should confer with local L. A. W. Consul, who will be anxious to meet them more than half way. Don't forget that every vote counts more than one, since the man who is interested enough to vote is very apt also to talk, and may influence still others.



W. T. LEWIS,  
Racine, Wis.  
(Pres. Mitchell & Lewis Co.)



C. W. SHIPLEY,  
Cincinnati, Ohio.  
(Vice Prest. and Sec. Sechler & Co.)



JAMES H. BIRCH, JR.,  
Burlington, N. J.  
(Carriage Manufacturer.)



S. K. HERR,  
Westminster, Md.

Members of Carriage Builders National Association Road Committee whose photographs we were unable to obtain in time for this issue:

Geo. Looms, Louisville, Ky.  
G. W. Hedrick, Dayton, Ohio.  
D. M. Parry, Indianapolis, Ind.  
Chas. J. Richter, New York, N. Y.  
Wm. W. Ogden, Newark, N. J.  
Wm. H. Walborn, St. Paris, Ohio.

J. C. Adams, Baltimore, Md.  
Andrew Reitz, Wheeling, W. Va.  
Henry Tine, Danbury, Conn.  
H. C. Larrabee, Binghamton, N. Y.  
W. A. Rech, Philadelphia, Penn.  
J. W. Renwick, 39 Wooster St., New York, N. Y.

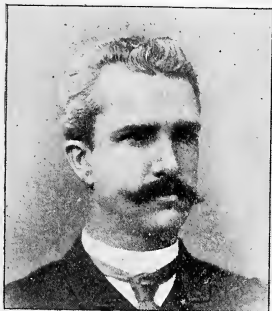
MANNER, AND HE CLOSES HIS VERY TOUCHING LETTER BY "TOUCHING" US FOR



## HOW IT LOOKS TO A MINISTER.

BY REV. CHAS. A. CRANE,  
*Of Colorado Springs, Col., (formerly of Danville, Ill.)*

"In the days of Shamgar, the son of Anath, in the days of Jael, the highways were unoccupied and the travelers walked through byways."—*Judges V., VI.*



REV. CHAS. A. CRANE.

**H**ISTORY repeats itself. "The days of Shamgar and of Jael" when "the highways were unoccupied and the travelers walked through byways" come upon Illinois every winter.

In his wonderfully suggestive discourse on "The Day of Roads," from the text just quoted, Horace Bushnell elaborated, as only his skill can, the idea that roads are the best evidences of civilization. "If a people have no roads they are savages."

Does this apply to the American farmer? Is he a savage half the year?

Bushnell goes on to suggest that "If law is weak and society insecure, men should spend their strength, not in opening roads, but in closing them as so many avenues of danger.

"Or, if you inquire after commerce, look at the roads; for roads are the ducts of trade. If you wish to know whether society is stagnant, learning scholastic, religion a dead formality, you may learn something by going into universities and libraries; something also by the work that is doing on cathedrals and churches, or in them; but quite as much by looking at the roads. For if there is any motion in society, the road, which is the symbol of motion, will indicate the fact.

So if there is any kind of advancement going on, if new ideas are abroad, new hopes rising, then you will see it by the roads that are building.

Nothing makes an inroad without making a road. All creative action, whether in government, industry, thought or religion creates roads."

More than 150 years ago, Field Marshall George Wade superintended the construction of those roads which led to the civilization of the Highlands. "Had you seen those roads

before they were made you'd have lifted up your hands and blessed General Wade," sung an Irishman in quarters at Fort William, alluding in reality to the tracks which had previously existed in the same lines and which were roads all but the *making*.

Following Wade, came Macadam, who added a word to the English language and earned for himself the tribute of a grateful remembrance as a great public benefactor.

Telford, another Scotchman, improved the macadam road by suggesting a causewayed sub-structure as a basis for the small stones used in the macadam process. Great Britain thus presented the field in which the modern hard road passed its infancy and youth. Centuries before this the Romans made roads in Great Britain, but they generally fell into decay. In 1825 A. D., one of the earliest road laws enacted directed that all trees and shrubs within 200 feet of roads between market towns should be cut down to protect travelers from robbers. (Though I do not advocate it publicly, I am privately in favor of a closely woven barbed wire fence being stretched along our public highways a like distance from the road, behind which shall be safely kept all dogs and "road-hogs.")

I've said enough to show you that the energetic, world-conquering Anglo-Saxon in the tight little island, knew and appreciated the importance of good roads and developed them with that same liberal and enterprising spirit that has also made the seas the highways for his commerce, and the harvests of almost every country pay tribute to his shops and factories.

If, as Bushnell, the philosopher, says, roads are indicative of a people, what is indicated by the roads of Illinois? The Arkansas Traveler's roof is suggested. In fair weather it needed no repairs, in foul weather it could get none.

These soft roads of ours that paste great cushions of mud upon the wheel, doubtless furnished the idea to the inventor of cushion tires.

A party of young people once left Springfield in an omnibus, when the mud was bottomless, to go two miles into the country to attend a wedding. The 'bus rolled and heaved and tossed like a tug in a stormy sea, until two of the party actually became seasick. Not a solitary jolt or jar relieved the sickening swing and sway, as the four horse team struggled along through that sea of mud. Some one with a like experience, who "had sailed the ocean blue," as he compared the sea of mud to the "sea of waters salt" must have named the old fashioned "mover's wagon" the prairie "schooner."

The present state of affairs, sad as it is, is not altogether sad, being relieved by an aspect of humor which grows upon one-as the subject is studied.

The crab-like and illogical process of reasoning, which in the early days of our state compelled the man who had no cattle to build a fence to keep the cattle of others away, is also displayed in striking conspicuity by the hibernating countrymen, who, because of bad roads, locks himself up at home half the year, and persuades himself he can't help himself because he's so poor.

In order to get the proper perspective and true proportions of this picture, look at it for a moment.

The cattle bred and fed in Illinois are the finest in the world. The swine cannot be excelled even in the roast pig dream of Charles Lamb. Our horses are the pride of every people. Our vehicles from omnibus to bicycle are the best and most perfect the cunning skill of artesans can frame. But with all these cattle, horses, swine, mules and vehicles in the superlative degree of perfection, we suffer an embargo of block paste to gum our endless lanes six months of the year.

We are wide-awake and ingenious people, no doubt. The march of progress has nowhere struck wilder applause or excited more frantic approbation than here where the inventive genius of man, laureled with a thousand triumphs, still wallows in the mud of its own sufferance. See how these soft roads fit in the picture.

Every machine for travel has been brought to the highest notch of perfection; our draft horses and roadsters alike have been bred to the highest degree; our wheels roll on frictionless balls; the skill of the mechanic, the skill of the artist vie with each other in the symmetry and glittering finish of our vehicles, but with all these triumphs of science, our roads are worse than they were when we tore them from the hands of nature with a subsoil plow and a two-horse scoop-shovel scraper.

It is as if some modern Beau Brummel should array himself in shining tile, immaculate linen, and faultless broadcloth, and then walk forth barefooted to work the virgin mud between his toes.

Strangely incongruous indeed these primitive, longitudinal mud-holes, filling the lanes between well-kept farms, and ruining the streets of wealthy county seats and towns of no mean proportions.

Every means of travel has been perfected save the very one that intimidates every traveler who dares pursue a journey in bad weather—the roads.

Our system of making country roads is like healing a wound by tearing it open. Lest our heavy rainfall, our narrow-tired wheels and our quickly alternating frosts and thaws fail to keep the tarry surface of the roads well churned and mixed, the able-

bodied men turn out under the supervisor and spend two days of the fall in destroying every possible chance of good roads till summer comes again.

Thus, the prison bars of the farmer are strengthened, so that he may now rest assured that he and his are well locked up till the baking and healing heats of summer remedy the outrages he has committed on nature.

To say we are too poor to help this state of affairs is to smite facts in the face, and hold up our stinginess before the ridicule of the world. The thin, reluctant soil of France and England, which has to be manufactured almost every year, can yet support a thrifty race which builds and keeps such roads as would cause the average Illinoisian to almost die of envy.

To complain of poverty when poorer countries far surpass us in good roads is enough to make the generous and juicy loam of Illinois cry out with righteous wrath. Why, we only have to scratch it a little, when the bounty of our fields leaps forth to fatten warehouse, granary and bank account. We have never really cultivated our Illinois soil, barely cultivated its acquaintance, and yet no harvests are like unto ours in quantity and quality. The very richness of our land, and the abundance of our never failing crops, are eloquent persuasion to weave a network of hard roads all over the State, from Freeport to Cairo, from Danville to Quincy.

The following authoritative presentation furnishes enough facts to make even the most miserly farmer in a hurry to bring to pass substantial reform in the building of roads.

"In many respects we have greater need of hard surfaced roads than has either France or England. Our rainfall is considerably heavier than theirs, and our dirt roads for weeks at a time are half as deep as they are wide. Farm traffic is suspended and horses are kept in idleness.

"Official statistics show that there are something over 16,000,000 horses and mules on the farms of the United States, and at a moderate estimate of 25 cents per day as the cost of feed for each animal, we see that it costs the farmers of this country about \$4,000,000 per day for this item alone. Less than 20 per cent. of these animals would be sufficient to do all the hauling of farm produce carried on in this county even if the main roads were put in first-class condition, but, not to hope too strongly for the attainment of distant things, let us suppose that such an improvement be projected as would render unnecessary only one-eighth of the total number of the draft animals now employed. This would reduce the entire number by a little over two million, and would effect a saving each day of about 14,000 tons of hay and 750,000 bushels of oats, which,

reduced to a money value, equals \$300,000 per day, or about \$110,000,000 per year.

"Add to this the value of the animals, \$140,000,000, and we have a total of \$250,000,000 saved for the first year. Of course these figures do not represent the real loss entailed to our farmers by the use of dirt roads. That loss is beyond computation; but in whatever way the computation is directed, and wherever the loss is susceptible of calculation, the same startling exhibit is bound to appear. A recent careful count shows over 300 abandoned farms in the fertile and populous State of New Jersey."

Railroads are not run for fun. They are purely business, and because they *are* purely business, the best road-beds possible are made. Good road-beds mean nearness to market and despatch in business. They mean this no more in the case of railroads than in the case of wagon roads, in proportion to the traffic.

Mr. Potter, the former editor of GOOD ROADS, points out forcibly that "we are hauling over our common roads enough produce, in one form or another, to supply a freighting business for 150,000 miles of railroads, using more than 1,000,000 horses, and earning a traffic income in 1890 of nearly \$1,000,000,000." Let us suppose that the traffic over the common roads were carried on in the same way as that over the railroads; that is to say, that great corporations operate over them lines of wagons, which collected the produce of the farms and carried it to the nearest market towns. Our country roads would be subjected to a revolutionary improvement within a year.

The road system of France has been of far greater value to the country as a means of raising the value of lands, and of putting the small peasant proprietors in easy communication with their markets than have the railways. It is the opinion of well-informed Frenchmen, who have made a practical study of economic problems, that the superb roads of France have been one of the most steady and potent contributions to the material development and marvelous financial elasticity of the country. The far-reaching and splendidly maintained road system has distinctly favored the success of the small landed proprietors, and in their prosperity and the ensuing distribution of wealth lies the key to the secret of the wonderful financial vitality and solid prosperity of the French nation.

The experience of New Jersey teaches the same easy lesson in economics. There, macadamized roads built by funds borrowed upon bonds have once again demonstrated the truth of the old saying that "the best is the cheapest."

"The property in these counties has appreciated in value

far more than the cost of the roads, and that not only in the case of sales and exchange, but upon tax levy. The actual increase in land values, caused by the improved road, meets the increased taxes requisite to pay the interest upon the bonds issued for the improvements."

Thus disappears the old bugbear "poverty" that has throttled many a wise, prudent and economical enterprise.

There is also a social question wrapped up in this problem of hard roads at which we may only glance in closing.

The boys, most of them, want to leave the farm.

Who blames them?

Thurlow Weed once said, "I remember how happy I was in being able to borrow a book after a two-mile tramp through the snow, shoeless, my feet swaddled in the remnants of an old rag carpet."

The boy on the farm is built on the same social architectural plan as are the rest of us. In the seed time and harvest he works so hard his social nature almost starves but for the crumbs of sociability he gathers from the hired hands, but when the surcease from his labor comes, he longs to see and talk and visit with new acquaintances, not too familiar. All the social instinct demands a chance to get around and see people, and become used to affairs and men.

He will struggle through miles of mud and darkness to get to a meeting house where a few tallow candles make the gloom and the crowd visible, and then go home happy and light hearted because the intolerable routine and lonesomeness of the mud-bound home have been broken up by a bath of refreshment, wherein his social faculties have all been revived and quickened. This social instinct is greater and deeper and stronger than a mere fancy to meet his best girl—greater and deeper and stronger than the gregarious instinct that gathers wolves into packs, cattle into drives, birds into flocks and fish into schools. It is that same instinct that holds men by thousands in our great cities to suffer the pangs of poverty and the ravages of vice rather than turn out into the verdant country where plenty waits to be wooed by the hands of honest labor.

Put hard roads through every country side and you add the comforts of the town to the comforts of the country, and you make the sociabilities of the city possible to the homes that have all too long, through mistaken ideas of economy, been lonely, unsocial and forbidding.

If the unspeakable mud embargo could be permanently raised in Illinois, so that the boys and the girls, married and single, old and young, who live on the farms, could with forty fold more ease visit and be visited, the horror and haunting

solitude of farm life "would fold their tents like the Arabs and as silently steal away."

I strongly hope that the same official conservatism of antiquated absurdities may not stand in the way of present day progress that balked John Palmer of Bath in his effort to secure a system of fast mail coaches in England. Although he clearly showed that the improvements would economize time and public money, he was set down as a half-crazed enthusiast. The postoffice authorities were against him to a man, and even those who saw and admitted his data prophesied sure failure. The enlightened judgment of Pitt, however, came to his assistance, and Palmer's plan for fast coaches materialized, and the public quickly endorsed it.

In view of the experiments made by the Postoffice Department in free delivery for the rural districts, let this convention memorialize Congress to take steps looking to the perfection of those highways along which the mails must travel. Let us point out to the postmaster general that if he would immortalize himself, he has but to become the successful champion of a national policy that will put a permanent hard road under every hoof that bears the United States mails.

#### MISDIRECTED EFFORT.

**A**N artist has written the Lord's Prayer with a diamond on glass so microscopic as only to cover the 800th part of an inch.

Is the unhallowed statement intended to advertise the Lord's Prayer or the artist, or the glass, or the diamond, or the fact that all the fools are not dead yet? If a man wrote the prayer on the rim of his hat, and tried to live up to it, there would be some sense in it. If a man wrote the prayer in big letters on his office window there would be some reason in it, but to write it on a piece of glass the 800th part of an inch!

When I see a fellow,  
Write such things on glass,  
I know he owns a diamond,  
And his father owns an ass.

— *Australian Agriculturist.*

## HOW TO GET A "FLYING START" ON THE ROAD.

BY E. J. PENNINGTON.

**A**S far back as the beginning of the Christian era, humanity has been looking for some method by which man could soar through the atmosphere. Many attempts have been made in various directions in the hope that by careful observation we should be able to accomplish the art. At the time aeronautics were first thought of, locomotion on land and water was still crude, and was considered by people of those times a difficult problem. So much so that the idea of soaring in mid-air was not to be seriously considered.

The subject of rapid transit is one which has interested the more intelligent class of people for many years. In looking back over the means of transportation which have been used, we find that in designing machines to travel over the surface of the earth we have no trace of any successful experiments in conveying either freight or passengers, where the mechanism of animal locomotion has been copied. For instance, the locomotive was not built with legs and feet to operate as do those of the horse, but a mechanical appliance suitable for the purpose was constructed. This device was not only able to make the speed of the swiftest animal for a short time, but could continue at a greater speed than has ever been attained by any animal, and is capable of keeping it up for many hours at a time.

Again, we take the matter of water navigation. Boats were built to travel upon the surface of the water, being partially submerged but not wholly under the surface as is the fish, their paddle wheels and propellers giving altogether a different movement from that of the fish, or even the duck or other water fowl, which more nearly resembles the action of the boat than does the fish. I mention these illustrations to show that it need not be necessary in the matter of mechanical flight to follow the same style of motion as that used by the bird. In order to improve upon the action of animals, we must have instruments which have been invented for our special use. Therefore, we can readily see that in order to accomplish mechanical flight, man must not only have specially adapted mechanism, but that it may be necessary to have this mechanism entirely different from that used by the flying bird.

It is quite natural and proper to study the different movements of fowls, beginning carefully with their starting and stopping and many other of their movements, and I do not doubt that a man may be able to fasten an aero-plane to himself

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ARE SUBSCRIPTIONS ACCOMPANIED BY CASH OR SOMETHING EQUALLY USEFUL.



and to soar while using gravity to propel him along a gradual decline, or a current of air strong enough might raise him as it does the sailing bird.

We are capable of swimming in the water, yet the fish far surpasses our speed. We may run over the land with our feet, yet animals of the same weight will distance us; but we cannot fly at all, so that in order to imitate the bird we must look to the use of a mechanical appliance. A constant current of air cannot be depended upon, and something more practical must be obtained. It was quite feasible for a man to swim many years ago, but this art was first attained by long practice. If we will remember that it requires for a human being a year to learn to walk, and people have been walking since man was created, we will realize that in order to fly man must not only have a special machine made, but he must learn how to use it.

The riding of a bicycle to-day is very common, and we are apt to wonder that this grand art was not brought about many years ago. There is no doubt in my mind that the bicycle will be the means of bringing a machine suitable for navigating the air. I do not mean to say that we would care to sail more than a few inches, or at the best more than a few feet from the ground, until we became experts with the bicycle flying machine. However, in order to accomplish this evolution, *good roads* and a first-class surface are very essential.

This matter of flying, however, can be brought about in a short time. It will require a great deal of practice, which may be carried on without danger to the operator, as the flights will start at a low rate of speed, propelling the machine faster and faster until the bicycle and rider have attained sufficient speed so that the pressure of the air under the aero-plane will be sufficient to raise him and his mechanism one or two inches from the ground; the power which has been transmitted to the bicycle will be shifted to the flying machine, and the energy of the operator will be used to drive the propellor which pulls the machine along through the air. When the operator wishes to descend, he pitches himself a little forward and the wheels of the bicycle come in contact with the ground, and the speed is gradually decreased as would be done in the riding of a regular safety.

This kind of experimenting should be tried on smooth roads where there would be no danger to the operator, as it is not convenient to go to a hill, or to have a tower built to jump from to obtain a start; nor would the waiting for a current of air strong enough, be practical. It is quite necessary to have an apparatus which can be started in all kinds of weather and run with safety.

Please bear in mind that when I speak of a craft of this kind I do not mean an air ship. There is as much difference between a flying machine and an air ship as there is between a bicycle and an ocean steamer.

It is a fact that in proportion to our weight we have more strength than a fowl. In flying we cannot jump from the ground as does the smaller class of birds, neither can we strap wings on to ourselves and flap them with the rapidity of the bumble-bee whose body is many times larger than the surface of the wing. Therefore, to accomplish these results, a first-class light built bicycle with an aero-plane made of steel tubing covered with a thin sheet of aluminum, and having a propeller to be revolved by means of a connection with the sprocket wheels, or better, if a greater speed is desired, to have the propeller driven by a small engine. However, this is not essential.

Such an apparatus as this would give humanity a simple and efficient flying machine, with which, by practice, the operator may attain flight and will be no more fatiguing than the riding of a bicycle, and in fact, with the same amount of power developed, a much higher rate of speed will be attained. It will be found much easier to learn than the riding of a unicycle. The requirements of balancing to be similar, however, to the art of balancing on the bicycle, which is a very essential step toward mechanical flight.

It is a well known fact that the wild duck will fly many times further than an animal of its same weight can make by traveling over the surface of the ground. Nature has provided fowls with the necessary qualifications for starting and stopping; there is no need of a preparation of certain ways and means for them to have a point for starting and stopping. The fish of the sea do not require a harbor or landing place where they might stop. Still, we find many millions of dollars spent in building harbors and break-waters so that vessels which navigate the same waters may have a safe harbor.

With the flying machine the one essential point is to have a sufficiency of *good roads* and smooth surfaces so that there may be a starting and stopping place along any highway. In all matters of rapid transit, the fact of starting and attaining a given speed requires many times more power than is necessary to maintain the speed after once established. Therefore the getting of a bicycle under a good headway on the surface requires more effort than to keep the apparatus going after it has once raised from the surface. Again, the matter of landing is a very important one, and there is no method by which a flying machine may stop with safety, unless it is by means of a bicycle, so that if the aero-craft was attaining a speed of forty miles an hour sailing a few inches from the ground, a gradual descent of a few degrees would bring the wheels in contact with the ground, and the machine would soon stop as stated above.

## \*A COLORED STORY FOR WHITE PEOPLE.

BY FRANK WELLER.

OLD Zeke sat on the top rail of the "snake" fence separating the little plot of ground containing his cabin and "gyarden," as he was wont to specify the small ten by ten foot patch of potato vines back of the cabin, from the main road.

Zeke was discouraged; you could see in the broad, black, character-portraying countenance that something was weighing heavily on his mind. He sighed deeply and often. He moved restlessly on the not any too comfortable roosting place he had selected for the scene of his meditations, and poked the handful of "home grown" into the bowl of his cob pipe with his long forefinger in such an absent-minded and unscientific manner as to make its proper igniting and smoking a matter of no little doubt—for there is fully as much science required in properly "loading" a pipe as in properly loading a gun.

He slowly and moodily drew a match from the pocket of his tattered vest, scratched it, and holding pipe and match in position tried to draw on the pipe. It refused to draw, and in consequence the match went out. He took the pipe from between his lips, looked at it—sighed, and placed it in his pocket. Even his old and tried friend had refused him comfort in his hour of need.

"Hit do beat d' dickens," he muttered at last, regarding with apparent all-absorbing interest the movements of an eccentric lady-bug on the ground below—"Hit do beat d' dickens d' way d' ole ooman do hang onto huh onreasonable reasonin'." And after delivering himself of this somewhat anomalous opinion he relapsed into his former gloomy musing.

Thirty years before, Zeke, then a strapping awkward specimen of North Carolina colored manhood, had taken upon himself the responsibilities of married life. Attired in their wedding garments, he and his newly-made bride had received the hearty congratulations of their many friends, and settled down to a practical realization of their changed condition.

Shortly after the ceremony, anxious to escape from the crowded room in which with many a jest and laugh the guests were regaling themselves upon the bounteously spread wedding supper, Zeke had found a seat under a spreading oak tree in

\* [This story has no direct connection with the road question, but it touches in a very tender way the human side of life, and cannot help exerting a beneficial influence on the thoughtful reader. "Good roads make good people," and such stories as this have the same tendency.—ED.]

front of the house. He had hardly seated himself, however, when a horse was driven up and a young man alighted, threw the reins over the horse's head and proceeded to the nearest tree, which happened to be the one under which Zeke had sought seclusion, for the purpose of hitching the animal. Zeke's color and the color of his clothes prevented his being immediately perceived, and indeed, he might have evaded meeting the new guest, had he wished; but no sooner did he catch sight of the young man's face than he arose to greet him. It proved to be the son of a neighboring planter, and a great favorite of the groom. Stepping out into the bright moonlight, Zeke exclaimed:

"Howdy, Mars Harry? Gimme d' bridle; I'll hitch 'im."

"Hello there, Zeke," replied the new comer with a hearty grasp of the hand. "My! how you scared me. How comes it you're not in the house? Get scared out?"

"Dass 'bout hit," replied the groom with a grin; "I ain' used to so many people—en *my*! how dey kin eat!"

"Mars Harry" relinquished his hold on the bridle and proceeded to the seat which Zeke had just vacated.

"Well, well! so you're married are you, old boy?" said he, as Zeke having made fast the handsome animal rejoined him under the tree.

"Dass w'at d' preacher said,—en he ort to know, I reckon," replied the happy man with a grin, seating himself on the grass.

"He ought to know," acquiesced the young man, "but say, Zeke,"—he tilted his wide-brimmed hat back on his handsome head, threw one leg over the other and clasping his knee in his hands leaned back against the tree trunk, "Tell me now; what did you marry that girl for? Why, it wasn't two weeks ago you said you wouldn't marry anybody for the whole world."

"W'ad I want wid d' whole worl'?" the man inquired, evasively; "heap sight mo'n I kin han'le now to take keer ob d' half acre ob c'on en d' mules."

"No, that won't do." The young man shook his head decidedly. "You've got some reason for it; now, out with it. I won't tell on you."

The colored man glanced upward at the frank, handsome face above him, and then down at the pebble he was abstractedly attempting to dislodge from its resting place in the ground, with a small stick. He continued punching at the pebble in silence for some time, while the young man above watched him with an amused smile. It was his constant delight—this study of human nature on the lowly plane of the man at his feet, and he was content to remain silent until the slowly working mind reached its conclusion.

At last the colored man gave a more decided poke at the pebble and with a short laugh threw the stick away from him.

"W'y, Mars Harry" he began slowly—

"Well, go on; I'm listening."

"Yo' wan' to know w'y I mar'd d' gal?"

The young man settled himself into a more comfortable position against the tree.

"That's it."

"Well den," replied the other, "I done it fo' science."

"For—what?" in a puzzled tone.

"Yaas, fo' science," repeated the negro. "She 'n me's allus been 'sputin' 'bout science ev' sence I knowed huh, and I sez, sez I, d' bess way to make er ooman change huh 'pinion 'bout er t'ing is to marry huh, sez I—en dass w'y I done mar'd huh."

"Well, what kind of science? What's the dispute about?" asked the young man, his interest becoming more and more excited by this unexpected answer.

The negro stood up before him and after a cautious glance about him to discover any chance hidden auditor, replied:

"Well, Mars Harry, hit's juss diss way. D' gal's got huh mine sot on de fack 'at d' sun moobes eroun' d' worl' laik diss," illustrating with both hands.

"I see."

"En I say," continued the negro, "'at d' worl' moobes eroun' d' sun, laik diss"—again illustrating.

"And that's where the dispute comes in?"

The negro nodded. "Dass w'here it comes, en dass w'y I mar'd huh; toe git dat noshun outen huh haid."

"And," suggested the young man, "that's why she married you—to get your notion out of your head."

The colored man's jaw fell, and he thoughtfully scratched his ear.

"Hit *do* look kinder dat-a-way, don' hit?" he replied at length with a chuckle; "hit shorely do look dat-a-way. Won-nah w'y I didn' t'ink ob dat befo'?"

"Too busy with your own scheme," replied the other shortly.

"Well, I must go. I'll step in and speak to the bride a minute first, though. Good night. And I wish you luck with your scientific studies." And he left the negro to his own thoughts and emotions.

Yes, that was thirty years ago. Thirty long years; in which time Zeke and his wife had raised their little family—had seen the helpless mites of humanity develop into strong men and women. Six of them; two of whom now lay forever

at rest at the foot of the great mountain overlooking and guarding the valley in which the little cabin stood, all that the old couple had to offer as sacrifices at the altar of the Lost Cause. The remaining four children were now well married, and their little ones gladdened and brought sunshine into the hearts of the old people.

But, although Zeke's wife had proven herself a helpmeet beyond the shadow of reproach, still one thing rankled in the heart of the husband. Try as he would; argue as deeply and wisely as he could, aided by his thirty years' experience, he had not as yet succeeded in convincing her of the error of her reasoning on the great scientific subject of the relative position of this terrestrial globe to the source of all heat and light.

In fact, Zeke was even further from the goal than ever, for had not his wife within the month past produced the big family Bible and pointing triumphantly to the thirteenth verse, tenth chapter of Joshua, demanded of him a reasoning that could overthrow *that*?

"Dah 'tis in d' Good Book," she exultingly exclaimed. "Right befo' yo' eyes man. *Now* whay's yo' argyment gone to, hey? Does yo' wan' toe set yo'self up ergin d' Good Book? Bettah be keerful how yo' han'les d' mattah, ole man. Tell yo' d' sun *do* moobe, er how'd ole Joshua *stop* it? No suh, dass er seddled p'int, en I ain' goin' ter argify ergin no sich ignunt ole nigger whad don' know no mo'n ter 'spute d' Good Book."

To tell the truth, this argument had caused the old man considerable uneasiness as to his position regarding the matter, but he had become so used to reasoning against his wife's former theories that even this, supported though it be by the supreme authority of the "Good Book," was placed, for the time being, in the same category as the rest. Zeke intended looking this matter up sometime, but until he had so done, and had proven by investigation its truth, he purposed following the course he had followed for so many years, in hopes that his wife would yet be brought, in spite of her determination, to cease further argument, to see the matter in the same light as he did.

And so, on this balmy spring evening, his dejected attitude—his discouraged state of mind—proceeded from the same source as in days gone by. His attempt to reopen the argument had been met by the old lady's simply pointing significantly to the brass-clasped old Bible, and an absolute refusal to continue the argument.

The sun had long ago disappeared behind the heavily wooded mountain before him, leaving the valley in peaceful twilight. The many catydids and crickets were tuning up their

little instruments preparatory to taking part in the grand chorus of Nature, and Zeke's rheumatic old limbs warned him of the danger of further exposure to the night air; so with a parting sigh, and a half muttered, "Well, I hope it will come out all right, but I wisht it would hurry up," he slowly entered the cabin.

The next day, bright and early, the old couple, carrying out a pre-arranged programme started up the mountain side to spend the day in search of herbs. They each carried a basket, which was to serve the double purpose of conveying their lunch in the morning, and afterwards the result of their day's search.

Towards evening the old couple became separated, Zeke having left his wife and proceeded to a certain locality known to produce a particular species of the root they were in search of. He soon found the spot and collected the needed quantity. Then he retraced his steps, intending to rejoin his wife and descend the mountain, as the long-drawn shadows on the leaf-covered ground warned him of the approach of night.

He pressed forward, and on turning a corner of a large-sized mound, caused by the falling of a mighty oak, perceived his wife. She was sitting with folded arms on the half-rotted trunk of a prostrate tree, silent and motionless, her back towards him as he approached, the now filled basket at her feet, gazing with childish awe at the magnificent coloring lent to the landscape by the slowly setting sun.

He softly approached and stood behind her.

It was a scene well calculated to cause these simple-minded lovers of nature and nature's God to admire and wonder.

Before them, at the base of the great mountain, lay the valley, silent and restful. Beyond, the slightly rolling expanse continued as far as eye could see. To the left the mighty river sparkled as it pushed ever onward, supplying moisture to the sponge-like soil. A few fleecy, vaporish clouds passed before the slowly disappearing sun, now painting the whole scene a blood red, now a golden yellow, tinging tree top and mountain side with the glory of the living God. And the breezes as they passed lightly from mountain top to mountain top whispered softly,—

"The Lord is in his holy temple. Let all the earth keep silence before him" — and all was silent.

The old couple gazed at this wondrously beautiful scene for a long time; at last a big, loving hand was laid tenderly on the old lady's shoulder, and a deep voice half whispered:

"Ain' it gran'!"

A small, wrinkled hand stole softly up and clasped the larger one, and she answered simply:

"Look laik whad d' Good Book sez 'bout d' glory ob God bein' ober all t'ings."

Then they arose to descend. All at once the old man turned around and stood facing the brilliant sight. She halted also, and watched him curiously. He remained in that position until gently reminded by his wife of the long journey before them. Then he turned towards her, and with a voice quivering with emotion addressed her:

"Chlarissy," said he, "fo' mo'n thutty yeahs I've been 'sputin' wid yo' 'bout d' sun's moobin. I's tried d' bess I could toe change yo' mine, en eben tried toe t'ink d' Good Book wuz mistaken—but now it seem laik d' w'ole t'ing is open befo' me. Seem laik d' voice kem outen d' clouds toe tell me ob my mistake. Yes, honey," he continued solemnly, "yo's right; de sun *do* moobe. I ain' got not'n mo' toe say 'bout hit."

She placed her basket on the ground, drew a long breath, and laying her hand on his arm replied:

"Zeke, do yo' know w'hat I wuz t'inkin' ob w'en yo' kem up toe me?"

"T'inkin' ob d' sunset, wasn't yo', honey?" he returned.

"No, Zeke," she said slowly, "I wuz watchin' d' sun go down, en wonnah'in' w'y yo' didn' see it d' way I did—en all at onct d' worl' begun to moobe up—I could see it jus' ez plain ez day. De worl' moobe up, an' de sun stood still—en I seen dat w'at yo' wuz sayin' all dese yeahs wuz right; de worl' *do* moobe."

"Now *ain'* dat disgustin'," exclaimed the old man. "Seem laik me'n yo'd nebber 'gree on d' mattah. W'y we ain' no bettah off den we wuz befo'—unless—" he suddenly turned again to the now almost vanished sun and watched it intently until it had dropped from sight. The next instant he had thrown his old hat from his head and was executing a genuine hoe-down on the grass, flinging his arms about, and laughing like one gone mad.

The old lady drew back in amazement as she watched the strange and undignified conduct of her aged spouse.

"G-r-e-a-t King!" she exclaimed, "what'n d' worl's d' mattah wiv d' man? Is yo' tekken leabe ob yo' senses? Quit dat jumpin' eroun' 'fo' anybody sees yo'—en yo' a gran'fadder ob nine chillun! Quit dat now!"

But he still continued the strange dancing; it seemed as though pent-up Nature had at last found a channel of relief, and was loth to relinquish her hold on the old man.

At last, however, he calmed down, and panting from the great exertion he grasped her arm.



"T'ank d' Lo'd," he cried; "bress d' Lo'd, it's cum! D' trouble's ober now fo' good, ole lady. No mo' 'sputin', no mo' argifyin', it's all juss ez plain ez day!"

"W'at's ez plain ez day?" inquired the puzzled woman.

"Juss ez plain ez day," reiterated he. "Cant yo' see, honey? Don' yo' see? W'y, we're *bofe* right. Bress d' Lo'd fo' dis happy day!"

"W'at is it?" She too had caught the infection from the old man's excited demeanor. "I don' und'stan'. W'at is it?"

"W'y don' yo' see? De worl' *do* moobe, *en so do d' sun*. Don' yo' see? Dey *bofe* moobe, en hyah we'se been makin' two ole fools ob ou'selbes argyin' en 'sputin' 'bout juss 'zackly w'at we hofe knowed to be d' troof. Don' yo' see?"

She made no reply, but as he anxiously scanned her face, he read there the glorious truth. She *did* see; she *did* understand, and their troubles were at an end forever.

Then, in the rapidly falling twilight they began the descent of the mountain. Carefully he helped her down the winding, half-made path; tenderly he placed himself in advance of her, carrying both baskets, and trying each suspiciously weak looking footing with his own weight before allowing her to proceed; and his merry laugh echoed among the silent trees as in days of old, when the great question was then but a matter of jest, and had not assumed the serious aspect of later years.

At last they reached the base and came out upon the road. Before crossing it, they turned to the left, and a walk of a few feet brought them to a carefully trimmed bower, in the centre of which were two long, narrow mounds—the resting place of their first born.

A rose bush in full bloom grew at the head of each. The old lady entered the enclosure, and plucking a flower from each—a red and a white rose—came out and carefully pinned them to the lapel of his old coat.

Then, clasped in each other's arms, they left the place, crossed the road and entered the cabin, realizing for the first time in their lives the truth of that beautiful sentiment:

"There is more religion in not contending, than there is in anything we contend about."

## ABRAHAM LINCOLN ON IDLERS.

UNDER date of December 24, 1848, Abraham Lincoln addressed the appended letter to his half-brother Johnson, in response to the latter's latest request for lucre—\$80 in this instance. The *National Baptist* reproduced the document because of its perennial quality of "wisdom in worldly matters." We gladly lend our aid toward extending its publicity to a new generation:

"At the various times when I have helped you a little you have said to me: 'We can get along very well now;' but in a short time I find you in the same difficulty again. Now, this can only happen by some defect in your conduct. What the defect is, I think I know. You are not lazy, and still you are an idler. I doubt whether, since I saw you, you have done a good whole day's work in any one day. You do not very much dislike to work, and still you do not work much, merely because it does not seem to you that you could get much for it. The habit of uselessly wasting time is the whole difficulty, and it is vastly important to you, and still more to the children, that you should break this habit. It is more important to them because they have longer to live and can keep out of an idle habit before they age in it, easier than they can get out after they are in.

You are now in need of some ready money, and what I propose to you is that you shall go to work 'tooth and nail' for somebody who will give you money for it. Let father and the boys have charge of things at home—prepare for a crop and make a crop—and you will go to work for the best money wages that you can get, or in discharge of any debt you owe. And to secure you a fair reward for your labor, I now promise you that for every dollar you will, between now and the first of May, get for your labor, either in money or on your own indebtedness, I will give you one other dollar. By this, if you hire yourself at ten dollars a month, from me you will get ten dollars more, making twenty dollars a month for your work. In this I do not mean you shall go off to St. Louis, or the lead mines, or the gold mines of California, but I mean for you to go at it for the best wages you can get close at home—in Coles County.

Now, if you will do this, you will soon be out of debt, and, what is better, you will have a habit that will keep you from getting into debt again. But if I should now clear you out, next year you will be just as deep in as ever. You say you would almost give your place in heaven for seventy or eighty

dollars. Then you value your place in heaven very cheap, for I am sure you can, with the offer I make you, get the seventy or eighty dollars with four or five months' work. You say if I furnish you the money you will deed me the land, and if you don't pay the money back you will deliver possession. Nonsense! If you cannot now live with the land, how will you then live without it? You have always been kind to me, and I do not now mean to be unkind to you. On the contrary, if you will but follow my advice, you will find it worth more than eighty times eighty dollars to you."

## POLITICALLY FRIGHTENED.

BY LIZZIE M. HADLEY.

"I'll tell you something," says little Belle,  
 "If you're certain, sure, you'll never tell.  
 "Well, then," whispers the little maid,  
 "My papa, a great, big man, 's afraid."  
 "Oh, isn't that funny enough?" laughed Sue,  
 "Your papa's afraid, and mine is too.  
 "Not of bears or tigers or bumble-bees;  
 It's something a thousand times worse than these.  
 "It's a terrible thing, that goes up and down  
 Through every city, village and town.  
 "And my papa says he almost knows  
 That things will be ruined wherever it goes.  
 "Yes, isn't it dreadful?" said Belle with a sigh.  
 "It will swear, and papa says, steal and lie.  
 "I s'pect it has horns and cloven feet;  
 And, Sue! what do you s'pose it will eat?"  
 Then closer together drew each little maid,  
 Looking about as if half afraid  
 They might see this thing with cloven feet,  
 And find it liked little girls to eat.  
 And then they fancied they heard it roar,  
 As it gobbled them up and cried for more.  
 "Oh, its name," cries Belle, "is so dreadful, too;  
 Does your papa call it 'Republican,' Sue?"  
 Sue shakes her head. "Oh, it can't be that,  
 For my papa calls it a 'Democrat.'"

—*Boston Journal.*

# DECEMBER

is a good time to take account of stock.

To see what we have done during the closing year, to note the mistakes we have made, and pass the usual resolutions for the year to come.

GOOD ROADS has done all this, and now asks its readers for *their* verdict.

Those who criticise us in the proper spirit we esteem as valuable friends. We want to hear from you.

The only suggestion which you might want to make and which we could not consider, would be an increase in the price. We are bound to be philanthropists and must steadfastly refuse to take more than \$1.00 per year. Nor can the address be changed. It is 12 Pearl street, Boston, Mass.

Day of Year.	Day of Month.	Day of Week.	Length of Day, H. M.	TWELFTH ▲ December, 1894 ▲ MONTH
335	1	Sa.	9 19	<p>FARMERS CALENDAR.</p> <p>Now the harvest is past, it is time to prepare for winter. Secure the fruit and vegetables in the cellar before freezing weather comes.</p> <p>Never cut your wood "from hand to mouth," as the old saying goes, but have a good pile ahead; then if you should be sick a day, your wife will not have to go out and chop wood before she can make you a little gruel. See that the sleds are in good repair before the snow comes; also other implements you may wish to use during the winter. No doubt you will have time to meditate and to read, especially during the long winter evenings. See that your sons and daughters have social entertainment, and do not be afraid to play a game or two with them in the evening; it will make you feel younger, and lead the children to love their home, and perhaps keep them from evil companions.</p> <p>Settle all your accounts, if possible, this month, so as to begin the new year with a clean page; you will feel much happier than to be in debt, even if you have to live a little closer in consequence. Be thankful for what success you have attained during the past year, and resolve to do still better in the future.</p>
336	2	S.	9 17	
337	3	M.	9 16	
338	4	Tu.	9 15	
339	5	W.	9 14	
340	6	Th.	9 13	
341	7	Fr.	9 12	
342	8	Sa.	9 11	
343	9	S.	9 10	
344	10	M.	9 09	
345	11	Tu.	9 08	
346	12	W.	9 07	
347	13	Th.	9 07	
348	14	Fr.	9 06	
349	15	Sa.	9 06	
350	16	S.	9 05	
351	17	M.	9 05	
352	18	Tu.	9 05	
353	19	W.	9 04	
354	20	Th.	9 04	
355	21	Fr.	9 04	
356	22	Sa.	9 04	
357	23	S.	9 04	
358	24	M.	9 05	
359	25	Tu.	9 05	
360	26	W.	9 05	
361	27	Th.	9 06	
362	28	Fr.	9 06	
363	29	Sa.	9 06	
364	30	S.	9 07	
365	31	M.	9 08	

# LEAGUE OF AMERICAN WHEELMEN.

..... Organized 1880. ....

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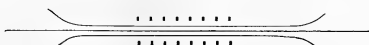
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*Treasurer.*—W. M. BREWSTER, 411 Francis Street, St. Joseph, Mo.



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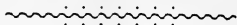
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Beginning with \_\_\_\_\_ State \_\_\_\_\_

TO GIVING UP THEIR OLD ROAD REPAIRING HOLIDAY? WE WANT TO KNOW ALL

# Opening of a Chestnut Burr.



HE MAY ALSO HAVE BEEN THE  
LARGEST DWARF.

A Western editor prides himself upon being the owner of the smallest diamond in the world. — *Hatchet*.

A NEW RHYME FOR  
"CHARLEY."

NOTHING STRANGE.

"Oh, my love she is so sweet!"  
Exclaims her ardent Charley.  
"She seems sweet enough to eat!"  
Which she does quite regularly.

— *Judge*.

NEITHER DOES THE MAN WHO  
IS TRYING TO SLEEP.

A cat with its fur ruffled doesn't feel fur-straight. — *Texas Siftings*.

EDUCATIONAL,  
(WILD AND WOOLLY.)

"Hold up your hands," the teacher cried,  
And *would* have added this beside.  
"You who have been to school at all,"  
For young and old and large and small  
Had gathered there from near and wide.

It was not easy to divide  
The motley throng, so to decide,  
He raised his voice in sudden call,  
"Hold up your hands!"

Some [children screamed, while others  
tried  
Beneath the furniture to hide;  
But one game infant, near the wall,  
Pulled forth a "gun" and yelled "By gol!  
I haint no tender-footed snide;  
Hold up *your* hands!"

— *J. E. V. Cook* in "A Patch of Pansies."

ANOTHER ONE ON THE MUCH  
ABUSED GAS COMPANY.

"I have sent for you," said the man of the house, "because these pipes need looking after. There's a leak somewhere, and a big lot of gas is going to waste." "N-no," replied the gas company's employe, meditatively; "mebby there's a leak, but there ain't any gas goin' to waste. It is all goin' through the meter." — *Unidentified*.

A ROAD WITH TOO MANY  
DIMENSIONS.

*Uncle Corners* — Finished s'vayin' the road to Puckerbrush yit?

*N. Gincer* — Ye-ep.

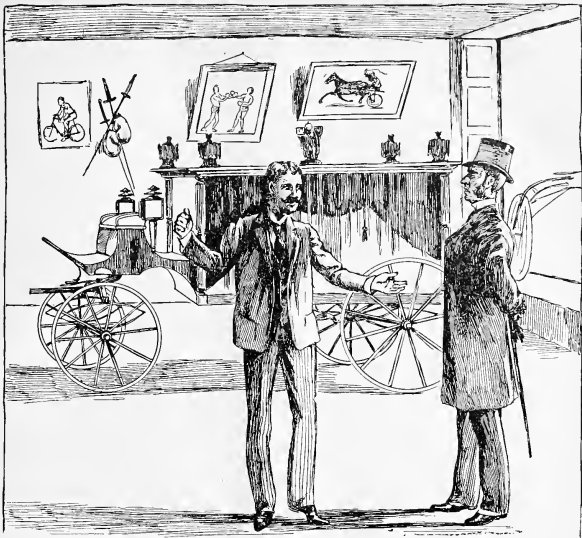
*Uncle Corners* — What do you make it?

*N. Gincer* — Four miles long, four rods wide and four feet deep. — *Puck*.

IT OUGHT TO HAVE BEEN  
BROKEN UP IF SHE HAD  
HER HAT ON AT ALL.

A Denver theatrical performance was broken up the other night because a lady in the audience had her hat on wrong side front. — *Hatchet*.

THESE THINGS. IF YOU HAVE ANY ITEMS OF INTEREST RELATING TO THE ROAD



**A** DIALOGUE which may be of interest to purchasers of bicycles :

*Dignified Customer* : I would like to look at your hearses.

*(Salesman recently graduated from the bicycle trade)* :

Yes sir, we can show you the finest line ever put on the market. Step right this way, please. We hold all the records from one hundred yards to five miles. Nancy Hanks, Alix, Directum, and all the great horses haul our —

*D. C. (horrified)* : What!

*Salesman* : As I was saying all the famous trotters and pacers use our sulkies and —

*D. C.* : Sulkies? What has that to do with it? I am talking about hearses.

*Salesman* : Well, you see the material is the same ; they are a little heavier, that's all. But they are made by our skilled workmen, than which there are no better, and it stands to reason that the concern which can get the most sulky records must know most about building all other vehicles, because, don't you see —

But the dignified customer's time was worth something and he had gone.

QUESTION PLEASE SEND THEM TO GOOD ROADS, 12 PEARL STREET, BOSTON, MASS.





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— Founded 1877. —

**"OLDEST AND  
BEST."**



**"LARGEST PAID  
CIRCULATION."**



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— ADDRESS —

**WHEELMAN CO.,**

167 Oliver Street,

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Boston, Mass.

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The Lightest and Strongest in the World.

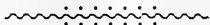


Are Winning Races at all Important Meets, but as a Practical Tire for all round Road Use, Note what a Prominent Wheelman says.

MR. RICHARD NELSON, New York Athletic Club, writes :

“Since I had your light road tires attached to my ‘Hickory’ I have fully realized what it means to ride a true pneumatic. I have ridden it over one thousand miles, making almost daily trips to Travers Island, and it is certainly doing great service.”

If other Light tires are giving you trouble try ours.



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23 Warren Street, New York.

Eastern Agents for the Plymouth Wooden Rim. All Sizes in Stock.

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# Fine Work Will Tell!

You may not be able to purchase a TRIBUNE quite as cheap as some other wheels, but it will give you satisfaction and you will not regret the price.

## TRIBUNES

are built for the riders, and those who have them are always ready to speak in their praise. The following letter is an example of what is thought of TRIBUNES:

NORTH VASSALBORO, ME., Aug. 24, 1894.

THE BLACK MFG. CO., Erie, Pa.:

Gentlemen—I think it is my duty to write and give you the praise which you richly deserve in the manufacture of bicycles. I bought of you about two months ago a Model F (25 pounds) and cannot speak too highly in its favor. I have ridden almost every popular machine, but never saw one that I would exchange mine for. For lightness, easy running and hill climbing, it is far superior to any which I ever saw, also a very handsome modeled and finished wheel. Since buying mine have sold a Model G and the party that has it could not be persuaded to ride any other. Wishing you unbounded success, as your wheels merit, I am  
yours truly,

T. M. WILLIAMS.

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And see how it seems to ride a perfect wheel.

The Cycloidal Sprocket will itself be a revelation to you.

Write for catalogue and apply for agency.

THE BLACK MFG. CO., - - - ERIE, PA.

TALLY THREE!

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A BIG DEAL

THE DUNLOP TIRE

Will be furnished hereafter

On Sterling Bicycles

At the Same Price as Cheaper Tires.

... IT IS THE ...

ONLY DETACHABLE TIRE

Recommended by

THE STERLING CYCLE WORKS.

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AMERICAN DUNLOP TIRE Co., 504-506 West Fourteenth St.,  
NEW YORK CITY.

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TALLY FOUR!



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STEARNS BICYCLES

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# THE SEARCH LIGHT

An Illuminator,  
not simply a Signal.

IT ▼ ▼ ▼ ▼  
BURNS ▼ ▼  
KEROSENE



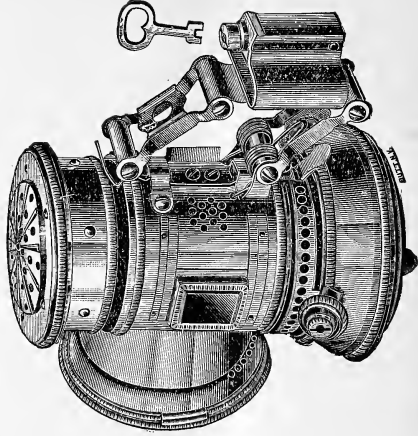
IT ▼ ▼ ▼ ▼  
BURNS ▼ ▼  
10 HOURS

(No Special Oil required any more.)

Will not jar out. Always cool, and wick does not char.

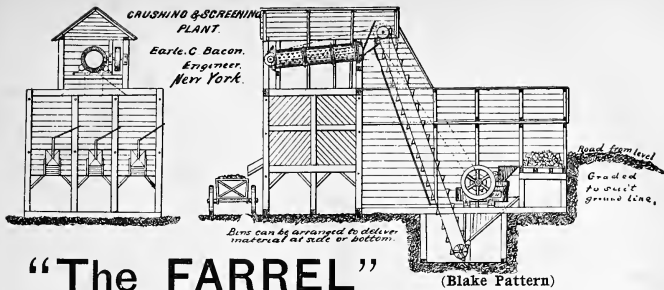
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The central draft principle; perfect in construction; handsome in appearance. A circular tells all about it. Send name and address and mention "Good Roads."



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“The FARREL”

(Blake Pattern)

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Screens, Elevators and Complete Crushing Plants.

The Standard for 25 years and BEST to-day.

**FARREL FOUNDRY & MACHINE CO.**

EARLE C. BACON, Engineer, Havemeyer Building, New York.

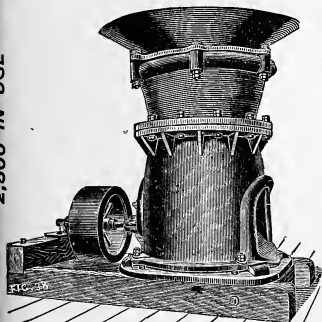
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Complete Macadam Road Building Plants. Storage Bins and Elevators for Crushed Stone. Street Sprinkling Wagons and Sweepers, Rock Drills, etc. Horse and Steam Road Rollers, Engines and Boilers. Competent Engineer furnished for locating and advising. Send for Catalogue. Mention GOOD ROADS.

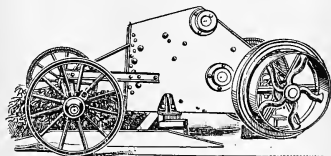
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DESIGNERS OF THE LARGEST MACADAM PLANTS EVER BUILT



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Built portable for Township, Village and Contractors' use, or for quarry work. We also manufacture

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SCREENS and ELEVATORS.

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# League Chainless Has Not Won

Any races, because no track racers  
have been built,

**.... BUT ....**

# The League Chainless Has Won

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These are the kind of records that tell the best story.

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NEW YORK OFFICE, 64 CORTLANDT ST.

Simplicity 47 Tires fitted when so ordered.





There is as much difference between

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and any other kind—

as between a coarse—common laundry soap and the choicest toilet article.

When next you buy a Shaving Stick—INSIST that your Druggist give you WILLIAMS'—. The only one in beautiful leatherette case—the only stick in the world—making a lather that will not dry on the face while shaving.

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# THE FARMER'S HANDY WAGON.

PRICE \$30.

Width of Tire, 6 in.  
Height of Bolster,  
30 in.



This is just the wagon for your farm, whether it be wet, sandy or side hill. Send us your address on a postal card, and we will mail you free a book of photographs, showing how the farmers in every State in the Union are using this wagon. We wish you or your son for our agent, to take orders in your neighborhood. Apply for agency, and we will show you how you can make money and not interfere with your farm work.

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BREECH LOADER  
\$5.00.  
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To those contemplating a trip to the mountains in search of health and pleasure, Deer Park on the crest of the Allegheny Mountains, 3,000 feet above the sea level, offers such varied attractions as a delightful atmosphere during both day and night, pure water, smooth, winding roads through the mountains and valleys, and the most picturesque scenery in the Allegheny range. The hotel is equipped with all adjuncts conducive to the entertainment, pleasure and comfort of its guests.

The surrounding grounds, as well as the hotel, are lighted with electricity. Six miles distant on the same mountain summit is Oakland, the twin resort of Deer Park, and equally as well equipped for the entertainment and accommodations of its patrons. Both hotels are upon the main line of the Baltimore and Ohio Railroad, have the advantages of its splendid Vestibuled Limited Express trains between the East and West. Season excursion tickets, good for return passage until October 31st, will be placed on sale at greatly reduced rates at all principal ticket offices throughout the country. One way tickets, reading from St. Louis, Louisville, Cincinnati, Columbus, Chicago, and any point on the B. & O. system to Washington, Baltimore, Philadelphia, or New York, or vice versa, are good to stop off at either Deer Park, Mountain Lake Park or Oakland, and the time limit will be extended by agents at either resort upon application, to cover the period of the holder's visit.

The season at these popular resorts commences June 23d.

For full information as to hotel rates, rooms, etc., address

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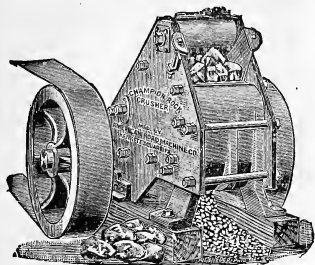
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The Champion Steel Rock Crusher.

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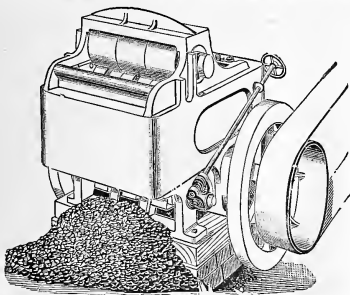
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If in need of any goods in this line send for our Catalogue, get our prices and

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**"Brennan" Breaker the Best**

**CRUSHES FASTER.  
 LESS REPAIRS.  
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Capacities, **8 to 150 TONS** per HOUR.

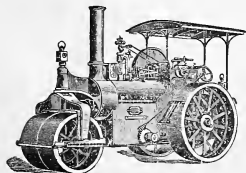
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We are getting out the hand-  
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Send your name and address,  
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**DON'T**

**SELL**

Your old wheel if it's a good one  
—you never feel the weight except  
on hills.



**HY-LO Changeable Gear**  
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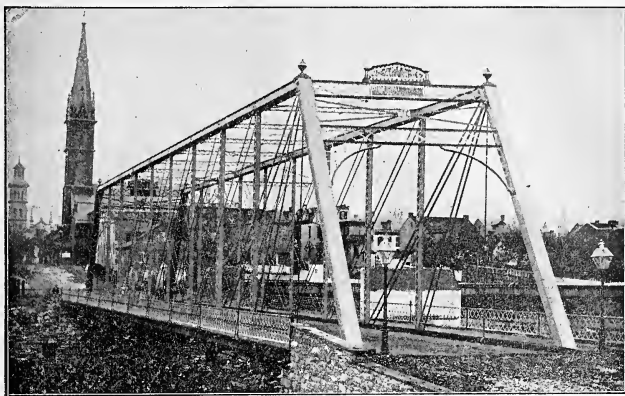
makes hill climbing easy on the same principle that long  
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Our book tells how. Write or call.

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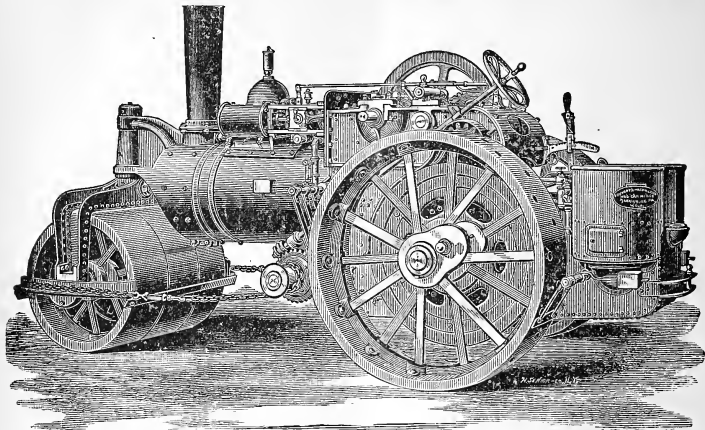
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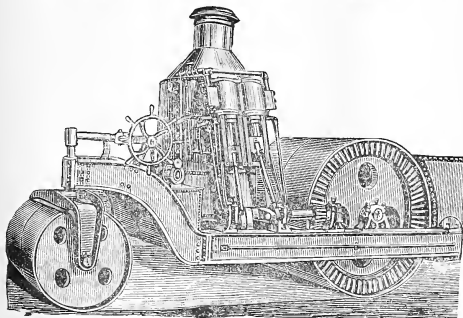
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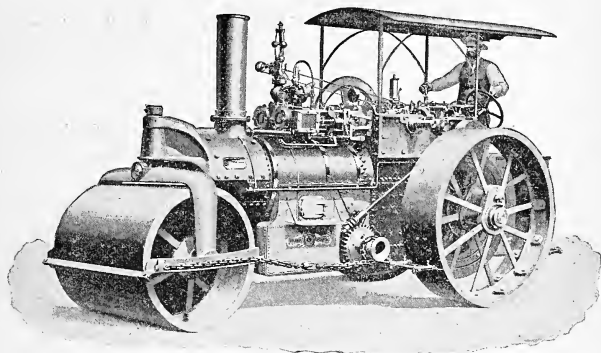
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Send for catalogue before buying, and we think we can convince you that we can furnish you the best Steam Road Roller yet built.

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Double Cylinder Engine Steam Road Rollers.



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15,000,000 Yards Genuine  
Trinidad Asphalt Pavement  
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8,000,000 Yards, or More  
Than One-Half of which,  
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This Company.

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Received the Highest Awards at the World's Columbian Exposition,  
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There Are No Better

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Ridden by A. W. W. Evans, of New Brunswick, N. J.

**TAKES TIME PRIZE AND THIRD PLACE**

In the 100-Mile Road Race of the Atalanta  
Wheelmen from New York to Princeton  
and return.

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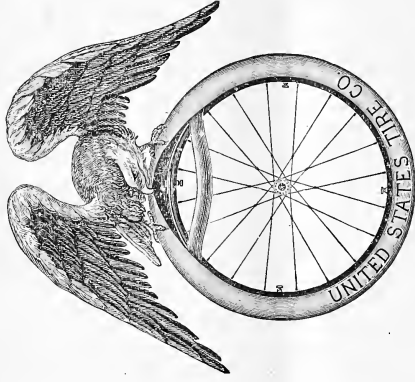
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**Do You  
Want the  
BEST?**



**SEE  
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**WOOD OR METAL RIMS.**

**The Lightest Mechanically Fastened Tire.**

Send for  
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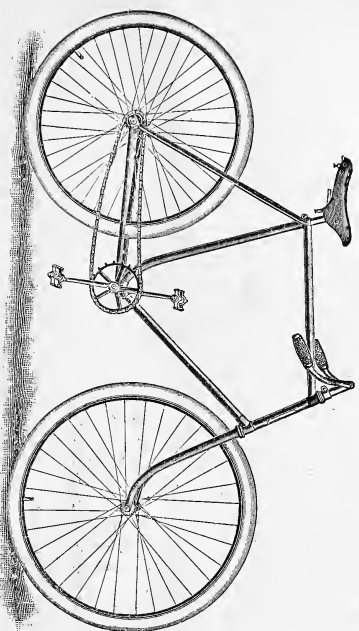
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## 'Tis Only Found on the KEATING,

And is the Point of Superlative Excellence in Which We  
Claim Supremacy Over All Other Makes.

It places the rider in the most advantageous position over his work, and not only adds to the strength and rigidity of the frame by preventing side strain or twisting of the sprocket, but greatly improves the appearance of the wheel. Read what this rider says:



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Gentlemen—Handicapped by the loss of one arm, I have sought for a long time to find the easiest running bicycle. Among the many wheels I have owned and ridden, I have chosen the KEATING as the easiest running, the lightest, and strongest wheel. I think the curve in the seat post or center brace places the power of the rider where it is best applied, makes the draft from the sprocket almost direct instead of a side pull, thus preventing side strain or twisting or friction, which are so common in wheels having a straight post. I can now make all the club runs, climb hills, and keep right in the front with the rest of the riders. Yours very truly, J. MAX DAVIS.

We have some new ideas for '95, and if you are interested in knowing NOW which is the best wheel, and WHY, send your name for illustrated booklet.

THE KEATING IS 365 DAYS AHEAD OF THEM ALL."

# KEATING WHEEL CO., Holyoke, Mass.

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## SOME FACTS

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Beside being the most popular  
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The Cleveland is recognized  
as one of the speediest.  
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There are more Cleveland Wheels  
on the track than any other make.  
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Why? Because They Win.

Do you notice that The Cleveland is putting some new marks on the world's record board?

For **HEALTH, PLEASURE, BUSINESS and SPEED**  
The **CLEVELAND IS THE LEADER.**

Our reputation is an assurance for



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