

For the last few years in Great Britain have begun to attract attention such as they have not received in a long time, says Harold Frederic.

Russia is said to have crowded England out of the flowery kingdom; but it is hardly probable. John Bull has planted his feet in that China shop, and it will require something more than diplomacy to remove him.

The butchers and meat dealers of Berlin complain that \$7,664,000 worth of meats were imported into Germany in 1896, principally from the United States, and at prices with which they are unable to compete. They therefore petition the government to open the frontiers to the free importation of animals and meats from European countries, and to restrict by all practicable means the import of meats from America, which is steadily increasing from year to year. Even in the matter of apples the Yankees have seized the market, and last year there were landed at the single port of Hamburg before November 18, 64,538 barrels. In short, American competition is now spoken of in Europe as the "transatlantic danger."

The latest advices from Peking brought new stories illustrating the arrogance of the European governments in their treatment of China. Until recently all business with foreign nations was transacted at the tsung-li-yamen, and the members of the diplomatic corps visited that place almost daily whenever they had business with the government. But the German minister compelled Weng Tung Ho, Chang Yen Yuen and other members of the gentry to come to his legation for the purpose of discussing the demands of the kaiser's government for indemnity for the death of the Jesuit missionaries and other matters relating to the occupation of Kia-Chow. This is the first time such humiliation has ever been imposed.

Two years ago a Kansas colony consisting of about a dozen persons sold out all their property and set forth with the proceeds to the Holy Land, for the purpose of rebuilding Jerusalem in preparation for the second coming of Christ. The fund all told consisted of about \$10,000, and it must have required faith as a grain of mustard seed to believe that such a sum would be sufficient to make the towers of imperial Salem again rise crowned with light and restore the splendors of Solomon's Temple. The experiment has, of course, turned out a failure, announces the New York Tribune, and the colonists are to return to Kansas, leaving Jerusalem to its natural processes of growth and decay, as they ought to have done from the beginning. In starting life over again in the homes they abandoned they are not likely to find the experience acquired in their pious exile worth anything like the money it cost them.

Says the Chicago Drivers' Journal: The tendency to feed cattle and not raise them is growing more popular with the farmers of the middle west every year. This is a short cut to quick returns, and saves about two cents a bushel. Of course somebody has to raise the stock cattle, but as this part of the industry can be carried on more cheaply on the big ranches, farmers who raise corn prefer to let them have a monopoly on the breeding and raising end of it. The number of range cattle that are being fed on corn each winter is growing rapidly. This fact is just as noticeable with sheep as with cattle, for naturally the same conditions and results obtain.

The revised figures showing the extent of the American grain crop for the past year have just been given out by the United States department of agriculture. The acreage devoted to the six principal cereals, viz.: corn, wheat, oats, rye, barley and buckwheat, aggregated 150,431,105 acres, while the total amount of grain produced aggregated 3,040,922,822 bushels. The value of the entire crop is estimated at \$1,121,295,762. In detail the figures showing the amount of each cereal produced, together with acreage and valuation, are as follows:

Corn.	Wheat.	Oats.	Rye.	Barley.	Buckwheat.
80,097,051	32,465,061	25,739,375	1,708,551	2,719,116	1,121,295,762
1,922,967,933	1,591,141,163	69,767,909	27,333,331	66,655,127	14,307,451
450,672,922	428,547,121	147,974,719	12,233,640	25,142,130	6,319,148

While the figures represent but little profit to the individual farmers scattered over the United States, they nevertheless serve to indicate the surpassing magnitude of the country, which is capable of producing harvests in such abundance.

VALUE OF GOOD ROADS.

IMPORTANT FACTS FOR RURAL COMMUNITIES TO CONSIDER.

Conclusions of Professor Latta of Purdue University, Indiana, as to the Monetary Worth of Improved Highways to Farmers—A Most Convincing Statement.

The following paper upon "The Value of Good Roads to Farmers" was written by Professor Latta of Purdue University, Indiana: That good roads have a money value to farmers will be granted by all. That the money value of improved highways is alone sufficient to justify the cost of their construction, will be confidentially claimed or readily admitted by many farmers, questioned by others, and denied by not a few.

In view of the financial and many other advantages of good roads, a majority of the farmers of the state would, doubtless, favor their construction as rapidly as practicable under some efficient, economical and equitable system of highway improvement. But there is a considerable proportion of the farmers—doubtless one-fifth and possibly one-fourth—who have little knowledge or appreciation of the benefits of good roads and who, therefore, object on account of the great cost of highway improvement. The farmers of this class know what they will have to bear their full share of the burden of such improvements; they discredit (not wholly without reason) the statements and conclusions of many public writers as to the losses and gains to farmers from poor and good roads respectively; hence they view with apprehension the general agitation in favor of improved highways. Ignoring or undervaluing the educational and social advantages, as well as the comfort and enjoyment of good roads, or feeling unable to pay the price of such benefits, these farmers regard with distrust and disfavor measures for highway improvement; and they are likely to oppose efforts for the betterment of our roads unless they can first be convinced that good roads will prove a paying financial investment. Speaking, therefore, in behalf of those who for any reason are not influenced, by the higher considerations in favor of improved highways, I raise the question. Will it pay the farmers in dollars and cents to improve their public roads?

Before attempting to answer this question, let us consider in what ways permanently good roads will prove financially beneficial to farmers. All will agree, I think that a good road will—

1. Economize time and force in transportation between farm and market.
2. Enable the farmer to take advantage of market fluctuations in buying and selling.
3. Permit transportation of farm products and purchasing commodities during times of comparative leisure.
4. Reduce the wear and tear on horses, harness and vehicles.
5. Enhance the market value of real estate.

But while it is easy to enumerate the ways in which improved roads will be financially advantageous to farmers, it is very difficult to estimate, in dollars and cents, the benefits to accrue therefrom. Distrusting my own judgment in the premises and fearing, also, that my opinions would have little weight with others, I sought the advice of the farmers themselves. Letters of inquiry were sent to sixty of the most intelligent farmers in forty counties located in the central and northern parts of the state. The substance of these letters is given herewith:

1. About what proportion of the public highways in your county are now good gravel roads?
2. Please estimate the average increase (in dollars and cents) in the selling price per acre of land throughout the county, as the result of such gravel roads.
3. If all the public roads in your county were converted into improved highways, how much, in your judgment, would it increase the average selling price per acre of land throughout your county?
4. What would be a fair estimate of the cost per mile of converting our common dirt roads as they now exist into good gravel roads, provided, of course, the work were to be performed economically under some competent, general supervision, and not hampered by legal restrictions?
5. Supposing that your county were divided into 100-acre farms and that the average distance of each farm from market were five miles, what, in your judgment, would be the average annual cost (in dollars and cents) to each farmer of our unimproved highways?

In answering the fifth question please take into account the reduced loads, increased time, extra wear and tear, and loss in sales from inability to deliver products when the market is best.

Over forty replies to these queries were received. As would be expected, from the difference in soil, surface and distance from gravel beds, there is a wide range in the estimates of the different correspondents. Many of the estimates are necessarily mere guesses, while others are based on a thorough knowledge of the matters under consideration.

Now, by modifying their surroundings Daresto produced monsters. If this is true, can we not, when we know all the factors of the problems, obtain new races?—Dr. T. C. Minor in *Cincinnati Lancet-Clinic*.

How It Happened. The Emperor of China—And all this trouble results from the attack on the German missionaries? Li Hung Chang—Apparently. As soon as Kaiser Wilhelm heard of the attack on the missionaries he got religion.—*Luck*

which the average is made refer to most cases to lands near the improved roads; but in a few instances they apply to all the lands of the county. The average increase, therefore, of \$6.48 per acre is lower than was intended for the lands near the improved roads.

Second—The estimated average increase per acre that would result from improving all the public roads is \$9.

Third—The estimated average cost of converting the common public roads into improved highways is \$1146 per mile.

Fourth—The estimated average annual loss, per 100 acres, from poor roads is \$76.28.

If these estimates are even approximately correct, they furnish a key to the satisfactory solution of the question of highway improvement from the money standpoint. On the basis of the last mentioned estimate the average annual loss per acre from poor roads is over 76 cents. In five years the losses would aggregate \$2432 for every section of land, and this sum would construct two miles at a cost of \$1226 per mile, which is \$70 per mile above the estimated cost given by the farmers themselves. The present road tax which, under existing laws, is largely thrown away, would, under a proper system of road maintenance, doubtless keep improved highways in perfect repair.

If the foregoing statements are a near approach to the truth, it follows that the losses and expenditures which farmers actually incur on account of poor roads would also secure permanently good roads. Can any sane mind doubt the wisdom of exchanging the losses, delays, accidents and vexation of spirit, occasioned by bad roads, for the comfort and other advantages of good roads when the cost is the same?

But there is another side to this question, viz, the increased value of land from highway improvement. As already stated, this increase is estimated by the farmers consulted at \$9 per acre. This would enhance the value of each section of land \$5760, which is more than double the estimated cost (\$2292) of the two miles of improved highway, which constitutes the quota for the section. Just here the objection may be raised that the improved roads would not increase the productive capacity of the land, while the enhanced commercial value would increase the taxes. Let us, for the sake of argument, grant this plausible but fallacious objection, and then find what it amounts to. Let us suppose the increase in appraisal for taxation to be \$1 per acre, and the tax rate 1-1-4 per cent. This would mean an annual increase in taxes of five cents per acre, or \$5 per hundred acres. Would not our objector, after enjoying the benefits of good roads, be very willing to give therefore the extra \$5, if necessary? Would he keep the money and go back to the thralldom of mud roads? If so, he has the option of selling his farm at an advance, according to the average estimates of his brother farmers, that will more than doubly reimburse him for his expenditure on highway improvement; and he can then remove to some native wild where quiet waters have not been "troubled" by the spirit of progress.

I am aware that many intelligent farmers will not accept the estimates of their fellow farmers as to the money value of good roads—many who will even deny that improved highways have any appreciable money value. I am glad to know, however, that many of these very same farmers favor good roads, and would aid in their construction for the same reason that they would build for themselves comfortable and even luxurious homes.

In view of the very general recognition among farmers of the necessity and benefits of good roads. I am encouraged to believe that a very large proportion of the farming classes will heartily join with the people of the cities and towns in an effort to devise, adopt and put into execution some efficient, economical and equitable system of highway improvement.

How to Make Animal Freaks.

In 1858 the great Camille Daresto was named director of the Laboratory of Teratology to the Practical School of Higher Studies. Teratogenesis was now on a firm foundation; monsters were produced in multitudes.

Daresto was able to obtain over thirty thousand specimens—wonderful creations too—Cyclopeans whose single eye might have frightened the companions of Ulysses, ancient swine with both lower limbs united, animals with two heads and eight legs, twins with trunks united, etc.—everything from the domain of fable to argument his scientific conquests.

One may obtain monsters in various ways—by warming the egg unequally, by varnishing or glazing certain portions of the shell, by shaking it during the period that separates the laying of the egg and putting it in to incubate. Only recently Feve made monsters by submitting the eggs to the action of electric currents or injecting toxins under the shells. The most different types may be obtained by using various processes.

This curious study has of late years been undertaken in foreign countries, among others by Gerlach and Wrigle. Finally recently some Frenchmen have undertaken it anew.

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OUR NAVY AND SPAIN'S.

NAVAL STRENGTH OF THE TWO COUNTRIES COMPARED.

They Seem Evenly Matched on Paper, But the United States Is Much the Stronger—In Ships For Bombardment and Harbor Defense We Are Ahead.

The United States and Spain are not unevenly matched in respect of a navy—on paper. An examination of the details, however, says the New York World, shows that in naval matters as in all else Spain indulges in dreams and delusions.

Let us discard all "projected" warships, all masted-over iron and wood vessels, and compare the two navies as they would meet each other. The steel vessels of modern type are alone worth considering, because other vessels can be easily obtained on short notice, and it is therefore a matter of minor importance which nation has the more of them at the present moment.

Of battle-ships Spain has only one. The *Pelayo*, of 9900 tons, is an excellent war vessel so far as protection is concerned, but its armament is not especially formidable as battle-ships go. It has two 12.5-inch guns, two 11-inch, one 6.2-inch and twelve 4.7-inch as a heavy battery. The Iowa of our navy has a much more effective battery in its four 12-inch guns, eight 8-inch and six 4-inch. We have altogether seven battle-ships, each carrying tremendous batteries of the most approved and supposedly of the most dangerous modern types.

Spain has no sea-going coast-defense ships, while we have six, carrying thirty heavy guns and fifty-two guns in secondary batteries. And these ships are at all intents and purposes battle-ships. Many naval experts regard them as far more dangerous than the so-called battle-ships.

In the class of non-sea-going coast-defenders Spain has two vessels only, and they carry but nine large guns. We have fourteen of these floating but non-sea-going forts, and they carry thirty large guns.

Spain has seven armored cruisers, carrying 208 large guns. But they are not so new or so well equipped or so dangerous as they seem to be when one reads about them. We have only two ships—New York and Brooklyn—that fall in this class, and they carry seventy-four large guns. But not only are these two more formidable than any of Spain's armored cruisers; but also some of our protected cruisers are more worthy of this class than several of Spain's that are put in it.

Of protected and partially protected cruisers—the most attractive and sensible kind of modern war vessels—we have sixteen, all made of steel, and in good condition, all equipped with the best possible armament and all entitled to the name of ocean greyhound. Spain has only five steel vessels of this class and ten iron vessels.

We are therefore stronger and Spain is weaker at the two most important points—heavy warships for bombardments and harbor defense, and swift, well-armed, easily managued cruisers.

"Miss Juliet Capulet."

The Postoffice Department desires information of one Miss Juliet Capulet. Some weeks ago the letter was addressed to the fair heroine of Mr. Shakespeare's romance, but the carriers here did not know her address. All of them had fair Juliets on their routes, but none knew Miss Juliet Capulet, the daughter of the head of the royal house of Capulet, who domiciled at Verona and had a fuss with a man named Montague. Nor were they acquainted with any man named Romeo, who was a botch of killing himself on her account. So the letter after going the rounds of the department gravitated to the dead letter office, and now the department seeks by newspaper advertising to carry out the directions of old man Capulet to his servant: "Go, sirrah, trudge about through fair Verona; find those persons out whose names are written there."—*Washington Star*.

"Pluck Me" Stores Being Abandoned.

One gratifying feature of the industrial situation during the year closing is the abandonment by a number of large employers in the Pennsylvania coal regions of the company stores which kind the miners to trade their wages away for the commodities sold them and deny them the right to trade where they can trade most advantageously. The employers who maintain these stores do so in the face of a State law which requires them to pay their employees semi-monthly and in cash and which forbids the gouge game practiced by the company stores. Yet the employers have violated these laws and set an example of lawlessness to their men. Every employer continuing this lawlessness against his working men should have the law drawn on him like a sharp sword.—*Minneapolis Journal*.

The Effect of Fog.

Accidents due to the obscuration of objects by fog are so common that scientists are making a study of absorbent power of fog as regards lights of all kinds. It appears that London fog absorbs 20.8 per cent. of the light from an incandescent burner, while the ordinary gas loses but 11.1 per cent. The incandescent light contains more blue, and this is readily absorbed by the fog. Red lights are much more penetrating than blue, and as the gas light contains far more red than the electric, it is much more valuable as a light for use in very heavy fogs. It is a fact familiar to every one that when the sun shows through mist it is of a deep red color. This is accounted for by the fact that the blue rays are entirely absorbed, leaving only the red with its much more powerful quality of penetration.—*Catholic World*.

IS THE DAY CROWING LONGER?

Scientific Reasons in Support of the Theory That It Is.

One of the most interesting subjects discussed by Professor George Darwin during his recent visit to this country was that of the possible and probable increase in the length of the day.

When once the earth is in motion about an axis, no matter how the motion came about, it would continue forever, and at the same rate, thus making the day always of the same length, unless something is happening or will happen to interfere with that motion. Now, there are several causes in operation which affect the period of the earth's rotation, some of which tend to make the period less and others to make it greater. Fortunately the influence of each of these causes is very small. They are generally easy to understand, and a simple experiment will illustrate one of them.

Tie a stone to one end of a string, and holding the other in the hand, whirl it around as near as may be in the circumference of a circle. When its speed is nearly uniform allow the string to wind up on the finger. It will be noticed that as the string shortens the angular velocity increases. In the same way, if the matter forming the earth should in any way be drawn nearer the axis of rotation, it would turn faster, and the day would be shortened.

By continual loss of heat a shrinkage of the earth is probably in progress, and although the process is exceedingly slow, it certainly tends to diminish the period of rotation. On the other hand, any addition of matter from the outside will tend to increase that period and make the day longer. Undoubtedly slight additions to the mass of the earth are constantly made by the arrest of meteoric bodies passing through the atmosphere. Their influence is opposed to and tends to neutralize that of any earth shrinkage that may be going on.

The most important interference with the rotation of the earth that we know of is that of the tidal wave, which is due to the attraction of the sun and moon, but more largely to the latter. It is easy to see that this is a resistance against which the earth turns, and its effect is to increase the length of the day.

Astronomical observations extending over about 2000 years have failed to show any sensible change in the day, but the influence of the tides must become evident after the lapse of a great many years. Professor Darwin declares that the day may lengthen until it is at last fifty-five times as long as it is at present, and that would be also the period of the revolution of the moon about the earth.

A day of 1320 hours, such hours as we now have, would offer many interesting advantages, but there would be some things about it not altogether agreeable. As it is not likely to come for some millions of years, it is not a matter for immediate anxiety.—*Youth's Companion*.

Rescued From the Sioux.

In the Children's Home at Sioux Falls, South Dakota, is a bright-faced maiden who last fall was found living among the Sioux Indians at Cherry Creek, a tributary of the Upper Missouri. She was taken from the Indians through the efforts of the Rev. O. H. Sprout, of Pierre, and Senator Kyle, and an endeavor is now being made to find her relatives, if relatives she has. Had her presence among the Indians not been discovered when it was she would by this time have been the squaw of one of the braves of the tribe. Her Indian name is Swift Fawn. It is supposed that her parents were killed by Sitting Bull, by whom she was brought up. The only clue to the relatives of the child is a small linen handkerchief, marked with the name of Russell, and a little silver drinking mug, upon which is engraved the name Luella. She prefers to be called Anna, and so, at the Children's Home, is known as Anna Russell. She is a ward of the Government.—*Philadelphia Record*.

Cradle Run by Mule Power.

A traveler going through a sparsely settled section of Canada came to a lonely cabin, and, finding the door open, went in. Nobody was in sight, but in the center of the room he saw a cradle with a baby lying in it fast asleep. The cradle was rocked back and forth with great regularity, and he was puzzled to know what kept it in motion. On examination he found a stout cord attached to a nail driven in the side of the cradle and passed through an auger-hole in the side of the house. He took up the trail, which led him into a ravine, where a donkey was standing and switching his tail. The mystery was explained. The other end of the cord was attached to the donkey's tail, and the constant switching kept the cradle in motion. It was an ingenious device on the part of the mother to keep her baby asleep while she went off for a time.—*Ontario Banner*.

The Clever Artist.

Not infrequently the art student falls in arrears for the rent of even his airy perch on the "sixieme," and landlords have scant sympathy for beings who can "soar to the empyrean," but can't pay cash. One young man, six months in arrears, knew that his landlord was keeping a watchful eye on his trunk, which stood opposite the door, feeling sure that while it was there the owner would not depart. Our artist painted a portrait of his trunk on the wall opposite the door, and in the night took himself and his belongings quietly away; nor was he missed for several days. Good work sometimes serves very inartistic ends.—*Catholic World*.

GOOD ROADS NOTES.

Oil on Roads.

Crude petroleum has been used with good effect to suppress dust on railroad beds. Now it is advocated as a good application for country roads. It is claimed that by excluding water it keeps the road good in wet and dry weather. It will suppress dust and render the water-cart unnecessary, and it prevents the formation of mud in winter.

Better Roads For Mobile.

They have taken hold in a practical way in Mobile, Ala., and organized a Good Roads Club, with a view to having the city streets improved. The call for the first meeting stated that Mobile "has the worst streets of any city in this country" and that "the few that are paved are fast becoming unrideable." The newspapers are already with them; so, with constant agitation and persistent work, the outlook is encouraging.

Good Roads Profitable.

The Real Commissioner of New Jersey, Mr. Budd, points out that it costs three cents a bushel to haul wheat on a level road a distance of five miles, and at least nine cents to haul it the same distance on a sandy road, which goes to illustrate the practical economic importance of good roads. This is a point which deserves the serious attention of farmers. Sandy and rough roads are wearing out their horses and vehicles and increasing the actual cost of their farm supplies and of the marketing of their produce. Though little recognized, this is a fact most patent to the careful observer, and most pointedly and truly expressed in Mr. Budd's report. When this fact penetrates the minds of farmers more generally, they will begin to realize that money and labor expended on road improvement will save money for them in reducing the actual cost of hauling and in saving vehicles and horses.

It is high time to dispense with the idea that good roads are luxuries, mere fancy trills, and to regard well-made highways as among the necessities.—*Easton (Penn.) Free Press*.

A Commendable Policy.

In a recent letter to the State Highway Commission of Connecticut Colonel Albert A. Pope said: "It is a commendable policy to build in the very best manner possible, so that the common ways may be of advantage not only to us but to generations yet unborn. The mistake of the past has been that this work was done for a day or a season, a poor investment which resulted in the loss of hundreds of millions of dollars.

"A few years since the price of hay in Springfield, Illinois, was \$30 a ton, and the market was supplied by railroad from outside the State, because, though hay was plenty at \$10 a ton, the farms within radius of a few miles were completely embargoed by mud; and yet not long ago the Richardson Bill, the terms of which provided that the cities in New York would pay three-fourths of the cost of State-road construction, was defeated by the farmer element.

"If a saving of 22 cents per ton per mile could be effected in hauling to and from the depot the way-freight carried annually on the New York Central Railroad the saving to the community represented would be \$3,000,000.

"The Connecticut Highway Commission is entitled to unanimous support in building only the best Macadam and Telford roads, and I believe the press of the State should take hold of the question, and by a free discussion of the subject convince the people that good roads are the only ones worth building. As a rule, those who complain most loudly about the first cost of roads are the very ones who, in the end, reap the greatest benefit therefrom."

In the New York Legislature.

In his message, Governor Black, of New York, advocated highway improvements, or, at least, dwelt on the advantages of good roads, although he did not offer recommendations as to how they are to be secured. He said:

"I call special attention to this subject because the need of improvement is apparent and admitted, and because the benefits following it would be extensive. Many sections of the State, unsurpassed in beauty and fertility, are neglected and almost unknown, because the condition of the highways affording the only approach makes them difficult of access. A good road is one of the chief elements of the value of a farm. If its fertility be slight, it may still be desirable if its location and surroundings are attractive, and the approaches suitable.

"In many parts of this country, notably in New England, farm values, which had been reduced by the competition of the West, have been, in great measure, restored by the demand for summer homes. Every such community finds itself benefited to the extent of its power to attract investments from the towns and cities.

"Its markets are enlarged, the prices of all commodities raised, railroad facilities are improved, and those changes which the expenditure of money is likely to create are largely realized. New York has natural advantages unsurpassed by any State. Better roads will bring them more generally into view."

About half a dozen bills dealing with various phases of the subject are likely to be introduced into the Legislature. One provides for a State bureau to gather facts and statistics, and act as a medium of information and advice; levies a tax of five cents on each \$1000 of valuation, and divides the cost of roads, fifty per cent. to State, thirty-five to county and fif-

teen to town. Its other provisions are permissive, leaving it to each locality to take action in the matter, and making it thoroughly local option. The roads, when completed, are to become county roads.

Another bill contemplates, as nearly as possible, a continuous road across the State, following the leading routes through the various counties, and appropriating \$5,000,000 per year, beginning in 1899, until the work is done. Other bills propose to substitute a money tax for labor; for post-roads to be built in conjunction with the general Government; for taxing wheelmen to build side paths, and for the employment of convicts on the highways. The advocates of good roads will probably make a strong showing, and expect to be able to secure the passage of some satisfactory measure.

Pebbles.

Narrow tires and heavy loads, soon will spoil the best of roads.

A road properly built and cared for will shed water instead of absorbing it.

There are three principles of road-building: Drainage, drainage, drainage. Neglected and abandoned farms are one result of the costly transportation caused by bad roads.

Wagon manufacturers are turning out farm wagons, some of them with metal wheels, having tires four inches wide.

Brooklyn claims to have done more during 1897 in the way of street improvement than any city of its area in the country.

Mayor Boynton, of Port Huron, Mich., is actively interested in the Good Roads Association lately organized in that town.

Over thirty thousand dollars have been awarded this year in Berks County, Pa., in condemnation proceedings for free turpikes.

Hard roads yield large returns when intelligently constructed and suitably cared for. It is only when badly made and shamefully neglected that they prove an expensive luxury.

The Pongkeepsie Eagle suggests that a good plan would be for each town to improve its own roads, under the supervision of a skilled engineer employed by the State, and that the State afterwards contribute a portion of the cost.

Nothing is more ruinous to a macadam road than water. Ruts hold water, and, therefore, should never be allowed to exist. To guard against their formation and development is one of the principal parts of proper care of a roadway.

An object-lesson on the value of good highways is being furnished by Robert Mackinnon, of Little Falls, N. Y., who has been grading the road between Little Falls and Union, and putting gravel on it at his own expense, hoping that it will interest others in road improvement.

A great many of the statements made about the cost per mile of roads are apt to prove misleading. A fair comparison cannot be made without knowing the width and depth, the amount of grading required, methods employed, and many other details which seriously affect the price.

California's Gold Output.

In connection with the recent observance of the semi-centennial anniversary of the discovery of gold on the Pacific Coast it is interesting to note the magnitude of California's gold output during the past fifty years.

To begin with the amount of gold dug from the mines during the first year succeeding the discovery aggregated only \$245,301. But with a tremendous bound the value of the output for the year following mounted up to \$10,151,360. In 1850 the output aggregated \$41,273,106; in 1851, \$75,938,232, and in 1852, \$81,294,700. Since 1852 there has been a gradual falling off in the annual output of the yellow metal.

In the present time the amount of gold mined annually in California ranges in value from \$15,000,000 to \$18,000,000.

Since the first discovery of gold on the Pacific Coast in 1848 it is estimated that California has produced not less than \$1,300,398,779 worth of the yellow metal.

In view of what California owes to the discovery of gold, the people of that State have not been extravagant in holding such a brilliant festival as the one which has recently occurred on the Pacific slope.—*Atlanta Constitution*.

Theories Concerning the Voice.

One very interesting theory held by some vocalists is that the natural register of the speaking voice indicates the individual character of the speaker, as do the lines on the palms of the hand. For instance, a high soprano voice expresses joy and merriment. Complex natures, who carry on two qualities of thought at once, speak in harmonies, with several notes at a time, and have magnetic voices. The minor voice betrays lack of confidence, the major voice indicates intense vitality. The mental attitude shows itself in a voice with a sliding downward scale, as in most teachers' voices. Other instructors' methods go so far as to say that all who can talk may sing, if willing faithfully to devote their time and energy to the cause.—*The Chautauquan*.

Why the Blind Do Not Smoke.

A peculiarity about blind people is that there is seldom one of them who smokes. Soldiers and sailors accustomed to smoking, and who have lost their sight in action, continue to smoke for a short time but soon give up the habit. They say it gives them no pleasure when they cannot see the smoke, and some have said that they cannot taste the smoke unless they see it.—*The Ledger*.