ROUGH AUTO TRIP TOLD BY WOMAN

Mrs. W. R. Logus Has Decided Part in Return From Journey Through East.

DESERT EXPERIENCES HARD

Husband Often Relieved at Wheel and Assistance Given in Pulling Machine From Holes and in Fording Streams.

(Part XI of the account of the double transcontinental trip taken by Mr. and Mrs. Logus, of Oregon City. In this part Mrs. Logus takes up the story.—Auto Editor's Note.)

BY MRS. W. R. LOGUS.

For weeks my husband has been prevailing upon me to write at least one article for The Oregonian of our double transcontinental trip, so reluctantly do I take the pen to describe a few hundred miles of our tour west of Raton. My unwillingness may be ascribed to timidity in attempting a newspaper story.

While the tour was being discussed and actual plans carried out I made up my mind that I would not be a mere passenger, but would do all that a woman could in making the trip a success. Hardly a day passed that I did not relieve my husband at the wheel, allowing him to relax his muscles and enjoy his jimmy-pipe, and not a few times did he actually slumber, which I considered a great compliment, as it showed his confidence in my driving.

Of course, I was the commissariat of the expedition, purchasing all supplies and attending to their preparation; kept the diary, book of expenditures, read the maps and road data to him as we sped along, besides being advisory mechanic and utility derrick in extracting the car from difficult places, to say nothing of assisting at the power end of the block and tackle.

Auto Crossings Found.

Leaving Raton, N. M., at 10 A. M., we lay our route for Las Vegas, a distance of 120.3 miles, and for the first 15 miles crossed and recrossed the Santa Fe railroad at frequent intervals over a good natural prairie road, which led through ranch after ranch.

Where the fences divided these ranches special crossings had been built for autoists, which saved one the trouble of opening and closing gates, consisting of runways or troughs ten inches in width right over the fence. As far as the eye could reach there was nothing but beautiful prairie, with high waving grass, upon which cattle by hundreds fattened themselves for market. Some ten miles to the right and far in advance were ranges of low-lying blue mountains and to the left Maxwell's historical ranch.

While crossing a deep arroyo we found a man in trouble. In attempting to pull out with a heavy load he had broken the double-tree on his wagon. After repeated efforts to fix him up it finally was agreed that we should drive to his ranch, 15 miles out of our way, for assistance, which we did after getting lost several times, this section of the road being extremely rough and making slow-going necessary.

Mexican Village Reached.

Toward late afternoon we reached Springer, a typical Mexican village, where were found adobe houses, mustang ponies, the cowboy of the great Southwest that one sees in moving pictures and some half dozen real Mexican senoritas. Our larder replenished, we slowly followed a poor road into Colmor Station, and thence to Nolan, where the road improves.

Rain had been threatening all day, but so far we have escaped it. As I glanced back, though, I could see the storm coming, and urging my husband to greater speed, we began a race with the oncoming storm. Lightning cracked all around us, and every second we were in danger of being struck, but the little motor hummed bravely on, and we won, establishing camp at the foot of Wagon Mound, a small rocky mountain some 400 feet in height, where some 50 years previous a brave company of pioneers had been encompassed by Indians and starved to death.

River Is Forded.

Just before reaching Watrous' ranch it was necessary to ford Mora River, which had become swollen by the rains. With some misgiving, we put on all power, drove in and, luckily, made it without stalling.

Passing through Kroenig, Onava and Arriba, we finally reached Las Vegas, where gas was purchased. Then up, up, up, over some of the poorest roads of the entire trip, passing through many quaint Mexican villages, where the church is the principal edifice, and the padre ruling all. After reaching an elevation of 8600 feet we camped for the night near the Santa Fe tracks. Save for an occasional passing train, this was one of the lonesomest camps of the trip. Surely here we were at the top o' the world, with no habitation within 20 miles. Engineers on the railroad had become quite well acquainted with us by this time, and, seeing our little camp, would say, "Hello, good luck," by short blasts of the whistle, with a waving of caps from the train crew.

The road from here led along the backbone of the Glorieta Mountains, rocky and rough and necessitating careful driving, until we reached the village of San Jose. Houses, store and church are all built of adobe bricks, manufactured from mud and straw. None of these people spoke our language, but with the aid of a few Mexican words taught me by Mr. Logus I managed to obtain some supplies and water; in fact, the little Mexican we knew stood us in good stead on many occasions.

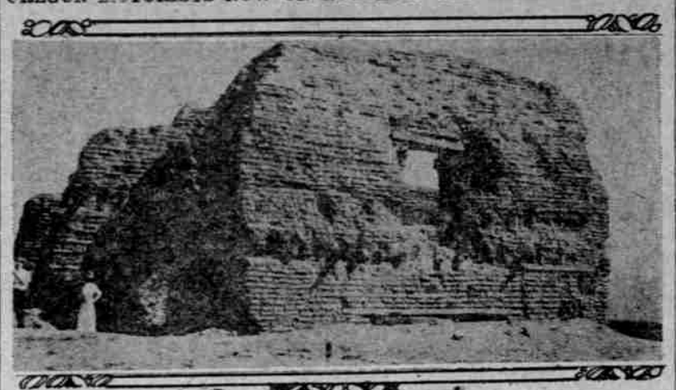
Mission Ruins Viewed.

Following the Santa Fe and the canyon of the Pecos River, we soon reached the ruins of the old Pecos Mission, said to be more than 300 years old. Of this we took pictures and explored to our hearts' content, and thence on through the Apache Canyon, over sandy, heavy roads into Santa Fe, one of the oldest cities in the United States, with its narrow streets, for the most part probably 20 feet wide, boasting the oldest church in our country, and houses for the most part of adobe construction. Lunch, and we are off for Albuquerque, for 30 miles over an excellent highway, which ends at the edge of a high lava cliff, from the brink of which a most magnificent view of the mesa for 30 miles greets the eye. Down the steep sides of the cliff lay the route, over a convict-built road, zigzagging back and forth, a most wonderful bit of engineering. If the brakes failed a man here he might as well say goodby for good and all, for some of the turns are so abrupt that backing is necessary to make them.

We are now in the Bad Lands of New Mexico. All streams must be forded, and to make fording more difficult, deep, clinging sand is their only foundation.

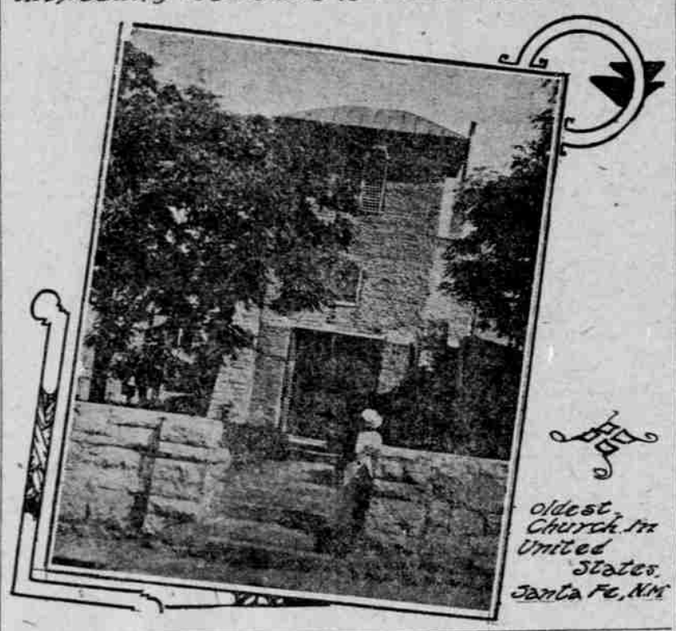
Albuquerque we reached at 7:30 P. M., thoroughly tired out and grateful to find a suitable hotel, after having traversed some of the worst roads of the entire tour.

OREGON MOTORISTS NOW ON ROUTE OF OLD SANTA FE TRAIL



Old Pecos Mission, Near Santa Fe Over 300 Years old

Inspecting Old Ruins of Pecos Mission



Oldest Church in United States. Santa Fe, N.M.

STABILITY IS SHOWN

George E. Daniels Discusses Auto Conditions.

STEADY PROGRESS MARKED

E. E. Gerlinger, Vice-President of Gerlinger Company, Receives Copy of Interview Given Out by Oakland Vice-President.

E. E. Gerlinger, president of the Gerlinger Motor Car Company, which handles the Oakland car for Oregon, received yesterday from the Oakland company an interview which its vice-president, George E. Daniels, gave out to the Pontiac Press-Gazette, showing the stability of the company in question and discussing the automobile industry and situation as it exists today. Mr. Daniels said:

When one analyzes automobile conditions one finds that the present status is not a question of supply and demand, but a condition that exists among a number of companies. It has been said for some time that it would be a question of survival of the fittest and we are just beginning to realize that this is actually so and it is the weaker companies that are suspending business. One will find upon investigation that there are good reasons why some of them have been unsuccessful.

There are three vital essentials necessary to enable a manufacturer to market a motor car successfully. First of all, the car must be meritorious; secondly, the material must be purchased at a price consistent with quality and quantity; and last, it is absolutely necessary to have a distribution plan extensive enough to market the product after it is made. It is one, two or all of these things that the weak companies lacked. With one or two of the others it has been a matter of financial mismanagement, which was of the brainstorm variety, and for this class I do not have any sympathy at all.

Gain in Business Shown.

In going over a statement of our business for the period extending from August 1 to December 1, 1912 and 1913, I find that we show a gain of business in every way.

We have produced more cars this year than we did during the corresponding period of last year. I find that in actual sales, we show an increase of 28 per cent and for the month of November, one of 30 per cent. As the matter of gross receipts from the sale of cars from August 1 to November 30, 1913, we find they total two and one-quarter millions of dollars, which is about half a million more than we received for the same period last year. You will admit these figures show a healthy increase. There are employed today in our plant about two-thirds as many men as last year, but that is because we ran much heavier during the Summer months. We have a good supply of orders for immediate shipment. We are selling on an average 24 cars each working day.

December Quiet Season.

It is true that we are approaching December. This is the quietest month of the year, but there is a reason for it. With the holiday season coming on, the people are centering their attention on Christmas and New Years and there is a certain class that cannot be interested at all this month, their minds being occupied with other things. However, I find that upon looking up our records, our December business is the best we have ever had.

With the coming of the new year we expect to greatly increase our production, and by the first of February the factory will be running heavier than last year. We are now manufacturing, in quantities, our Light-Six. From the advance sales we are confident this model will prove to be the most popular Light-Six on the market.

This company last year did a business of over $16,000,000 and expects not only to equal this amount this year, but to better it considerably.

Hays Finds Washington Prosperous.

"Handsome" Harry C. Hays, road man for the Howard Automobile Company in the distribution of Buick cars throughout the Northwest, returned this week from a two weeks' trip through Central and Western Washington. He reports both these sections of the state of Washington as being unusually prosperous, and was particularly impressed with the activity shown throughout the Yakima Valley and in the Grays Harbor country.

BRITONS ARE OUT FOR BLOOD.

English Enthusiasts Urge Building of 12-Cylinder Sunbeam.

English racing enthusiasts are urging the construction of a 12-cylinder Sunbeam, similar to the one that set a new world's hour record of 107.95 miles at Brooklands not long ago, to compete in the next 500-mile race at Indianapolis. Jean Chassagne, who handled the original during its transcendant flight, is named as driver.

The Britons desire to avenge the defeat of Guyot in a Sunbeam last year at the hands of Goux. The wiping out of the latter's record of 106 miles in an hour at Brooklands recently they consider a long step in the right direction. A 12-cylinder car having accomplished that feat, they are prepared to pin their faith on machines of this type in the future. With proper preparation they are confident of winning.

Last year the English, like the French, came over comparatively in the dark. Their gear ratios were all awry, and several other things were lacking. At the last moment the factory had to be cabled for information on several important points. Next year, with conditions known, a different result is looked for. France will have no walkover.

ATLANTA GETS CONVENTION

American Highway Association Will Meet in Georgia.

As a result of the contest among ten of the leading cities of the United States for the 1914 convention of the American Road Congress, under which title the American Highway Association and the American Automobile Association hold their annual conventions, Atlanta, Ga., has been selected as the next convention city. The convention will be held from October 19 to October 26.

Fairfax Harrison, who succeeded the late W. W. Finley, as president of the Southern Railway Company, was elected at the meeting to succeed Mr. Finley as vice-president of the American Highway Association and as a member of the executive committee. Mr. Harrison accepted the position and declared that he intended to carry on the work for improving highways in the South through the association, as his predecessor had done. It is likely that the executive committee will elect Mr. Harrison chairman of that body.

BUICK AGENT ON WAY EAST

Coos and Curry County Man Passes Day in Portland.

Isaac R. Tower, Buick agent for Coos and Curry Counties, Oregon, with headquarters in Marshfield, passed Tuesday of this week in Portland, while on his way East for a six weeks' visit. He will visit relatives throughout the East, and will go as far as Boston, Mass.

Upon his return trip he will stop over at the Buick factory to pay his first visit of inspection to this famous manufacturing plant.

Tower is enthusiastic over the 1914 line of Buicks, and is congratulating himself that through his ability to get early deliveries he already has sold and delivered six of the 1914 Buicks in his territory. He reports that the prospects for Spring business were never more encouraging, and expressed the belief that he would be able to make deliveries of 20 cars with the opening of Spring.

ROAD TEST UNIQUE

New York Holds Remarkable Reliability Run.

ALL PARTS ARE SCANNED

Buick Models Make Good Showing in Contest Involving Almost Every Feature of Automobile Except Wind Shield and Tops.

An unique reliability run brought to a close at New York, on December 6, provided one of the most remarkable tests in many ways ever held in this country, for not only were the cars penalized for lateness at controls and for chassis trouble, but also for defective equipment and work done on the road. This is the first time that cars entered in a reliability run have been penalized for the electric starting and lighting defects, also the first time that blowouts have been taken into account in making up the score for a technical test of this nature.

Besides these, other subjects of penalization were speedometers, horns, springs, tire racks, baggage racks, shock absorbers, gas tanks, and in fact every bolt, nut and screw in the car, excepting tops, windshields and tire-carriers.

Technical Examination Rigid.

The day before starting the 500-mile journey the 11 entries were subjected to a rigid technical examination by engineers, and all noticeable defects recorded. At the close of the three days' run the cars were again subjected to the engineer's examination, and the results compared, the differences between them being made the basis for penalization for technical defects.

Another feature of the contest was that at the close of the run each car was given a brake test and was required to stop on either set of brakes within a distance of 50 feet, at the speed they were required to average in the contest, according to their piston displacement. On the clutch test the cars were brought up with the two front tires against a six-inch curb, the low gear was engaged and the motor speeded and the car required to spin thte wheels, stall the motor or climb the curb. There were no failures in this respect.

On the gear set test the cars were required to show perfect performance on each speed forward and reverse.

Electric Tests Made, Also.

Every one of the 11 entries carried electric lights and all but two had electric starters. Each entry was compelled to carry a full lamploaad for three hours each day.

The electrical division of the technical committee made a most searching investigation of the ignition, lighting and starting systems.

The total mileage covered was 515 miles, of which 174 9-10 was made the first day, 178 3-10 the second and 168 8-10 the third.

The entry list, though small, carried many representative cars. There were five Buick entries, a 25-horsepower four-cylinder roadster, two 25-horsepower four-cylinder touring cars, a 35-horsepower four-cylinder roadster and a six-cylinder touring car. Among the other six-cylinder entries were the Chandler, the Oakland, the Oldsmobile and the Hudson.

Buick Average High.

The De Dion was the sole representative in the eight-cylinder class and the National the only other representative than the Buick in the four-cylinder class.

In declaring the results of the race, one of the four-cylinder Buick touring cars and the Buick six-cylinder touring car tied for first place with perfect scores. The Chandler was placed third with the penalty of 1 point, while the other four-cylinder Buick touring car finished fourth.

Of great interest is the gasoline consumption on the run. The average of the entire run for all the cars was 12 73-100 miles per gallon, and the highest average for any car obtained in any run was the four-cylinder Buick roadster, which averaged 19 miles to the gallon.

MANY-DEMAND BLANKS

AUTOMOBILE CONTEST KEEPS DEALERS IN BUSTLE.

Prizes of $1000 Offered for Corect Lists of 12 Cars With Name of One Live Prospect.

"It's a good job this is what some people call the quiet season, that's all I can say," said C. H. King yesterday, between talking to half a dozen people in connection with the contest inaugurated at the Keats Automobile Company offices, where the Chalmers Master Six is on display.

About a week ago Mr. Keats and Mr. King, his sales manager, started the competition whereby $1000 is given away for what really amounts to a little automobile education. Between them they drew up a list of cars showing the features that the Chalmers possessed as the line to go by, then left the names of the other 12 cars blank, showing where these cars possessed the characteristics and where they did not. All that is necessary for any one is to fill in correctly the names of the cars and give a genuine prospect's name to the company and he wins the prize.

"Anyone thinking of buying an automobile who could not in an hour or so fill in at least half of the machines must be sadly in ignorance of the elementary principles of modern cars," said Mr. King, "and must need greatly the education that this study affords, because no man should buy any car at all without looking into and knowing about the main features of all cars in the class in which he is going to purchase.

"This contest is not made a hard one. We all know that in picture puzzles and so forth the illustrations might mean anything or half a dozen things. Here, though, out of all the cars we name there is only one that is not sold by a dealer in Portland and that car was represented here until recently. The price, the shape of the motor, the fenders, in fact everything of importance is given, and any man with the catalogues before him could deduce the cars merely, like Sherlock Holmes, by a process of elimination."

While Mr. King was talking there were no less than ten people came in for blanks, three of them men who did not look in the least as though they would ever be able to afford cars or to know anyone who did. Two of them were pointed out, though, as men who own their own cars today and were personally known to the Keats firm. All they needed was a little information and this is keeping every one busy.

A longer distance has been covered every day in 1913 by airmen than the combined distance of all flights in the entire year 1909.

ONLY WOMAN GOOD ROADS BUILDER IN WORLD IS ARKANSAS RESIDENT

MRS. JOE ASHER.

Mrs. Joe Asher, wife of County Judge Asher, of Little Rock, Ark., is the only accredited woman delegate to sit in the councils of the National Good Roads Association. Mrs. Asher has gained her knowledge of roadbuilding by accompanying her husband on his rounds during the past six years, and is now considered an expert on roadbuilding. She attends all county and state good roads meetings and is permitted to take part in the discussions. She has been appointed a delegate-at-large for Arkansas by the Governor. At the good roads convention in 1912, Mrs. Asher, merely as a compliment, was asked to make a speech. She made so favorable an impression that she was placed on the programme for the 1913 convention at Detroit.

OUTPUT IS PLEASING

HOWARD M. COVEY FINDS FACTORIES RUNNING FULL TIME.

Dealer Finds Policy of Regular Trip East One That Proves Broadening to Himself and His Customers.

Howard M. Covey, head of the Covey Motor Car Company, distributors for Cadillacs in the state, returned recently from one of his numerous trips East, well pleased with conditions at the factory, where the output has exceeded those of all preceding Novembers in the history of the Cadillac concern.

Mr. Covey is one of those dealers in the local field who recognizes the value of taking periodical journeys back not only to his own factory, but also to others, for he realizes that, though, of course, the expense is no small item, yet it is not to be considered when set against the value of the information that is to be learned and of the safeguarding of his own interests, and more especially those of his customers in the West.

"The Cadillac factory was running full time," he said, "in an effort to supply the demand for the 1914 model with its two-speed axle, which has met with such instantaneous success and received the indorsement of engineers all over the world. It seems to have proved definitely that however much the Six may be in demand among certain classes, there is a still greater demand than there was before for a four-cylinder car of the class of the Cadillac. There were men who prophesied that we must get a six or lose out. Results, which, after all, are better than all theories, have proved conclusively that the four is wanted just as badly as ever; in fact, even now signs are not wanting that the stampede towards a six has already led to a turning again to the four because the publicity they have received has served to show what we always have contended that no six can be run, from gas and oil consumption standpoint, as cheaply as a four, which is otherwise identical in construction.

"The Ford and the Hupmobile were other factories running at full time while I was there," added Mr. Covey, "even though this is the time of the year when production naturally is not supposed to be at full height."

"Good Roads in the Northwest Are Told Of Herein.

From the August Issue of "The Review of Reviews."

The farmers and the business men as well have at last come to realize the losses they suffer from bad roads, and the magnitude of the movement to better conditions is little appreciated by those whose interests have not brought them into contact with it. The cost of bad roads has long been known in a vague way, but recent scientific investigations have brought the matter home in tangible form to those who suffer from them. One of the most thorough investigations of the subject ever conducted, the results of which are used as a text wherever the doctrine of good roads is preached was made by the Minneapolis Civic and Commerce Association. While the conditions investigated were those of territory tributary to Minneapolis, they are undoubtedly typical, to a greater or less degree, of those existing elsewhere.

A committee of the association selected for investigating the farming district, 750 square miles in area, the trade of which is tributary to Minneapolis. From a thorough canvass of the conditions existing there it was found that the 4069 farmers in the district hauled 560,000 tons of farm produce to market in 1911 and sold it for $6,665,680. To do this they had to make 205,000 trips, the time spent equaling 800 years of eight-hour days and the distance covered 88 times the circumference of the world. Bad road conditions caused losses in time, partly due to slow progress, partly to the necessity of taking less direct routes and partly because smaller loads had to be carried.

Detailed investigation showed that the losses in time were as follows: Due to not taking the shortest route, $62,000; due to slower progress, $75,000; due to extra trips necessitated by smaller loads, $159,000—a total loss of $296,000. Losses from inability to reach the best market, from the spoiling of produce, and from injury to horses and wagons were found to aggregate $221,000; from restricted ability to haul manure, $91,000. The total loss caused by bad roads was placed at $608,728.

The committee made the following deductions: On account of bad roads each farmer lost for the year $1.70 for every acre that he farmed; 13 cents every time that he carried a ton of farm produce over one mile of bad roads; 9 per cent of his total crop. He paid as much for bad roads as for labor, more than for food for his stock and 25 times as much for fertilizer. The total loss to the farmers for the year in this district from this cause would have bought all the corn produced in it, or all the wheat or the oat crop twice over, or all but 10 per cent of the potatoes, or all barley, rye, flaxseed, timothy seed, hay and forage combined. The losses would replace the farm implements or the cattle every three years, the horse every four years and would pay off all mortgages in the district in three years with $100,000 to spare.

The farmers, moreover, were not the only losers from bad roads. The committee found that the worst sections of the roads they had to travel between their farms and the markets were within the city limits; that there were approximately 3600 business houses in Minneapolis, employing 5000 wagons, whose loss from bad roads was $910,000 for the year.

The combined loss of the farmers, merchants and manufacturers for one year was $1,518,000. As there are about 3000 miles of roads in the district, which could have been kept in good condition for $300,000 a year, if properly constructed, in order to ascertain what amount could profitably be invested in good roads, the committee deducted this amount from the total loss, leaving $1,200,000. Capitalized at 4½ per cent, or 5 per cent, which is more than bonds would cost, the principal is $22,000,000. If this amount were invested in good highways at $7000 a mile, the district would still break even on the investment.

EARL COOPER ALMOST WELL

Road Race Driver Not Permanently Disabled by Accident.

Earl Cooper, "without a peer as a road-race driver for the season of 1913," is well on the way to recovery from the injuries received in San Jose, Cal., Saturday, November 24. A cut in the face and two broken bones in his hand are the extent of his injuries, and his skill at the wheel will be in no way impaired.

One of the most prominent of the motor trade journals in America hails Cooper as the greatest of the road-racing stars of the season, and cites his record of five firsts and one second in six starts as the reason for awarding the laurels. Throughout the year's campaign Cooper's car was shod with Firestone tires.

The Californian's list of victories is as follows:

Broke 200-mile record at Fresno, February 10; second in San Diego road race, March 1; drove relief in Indianapolis races, Decoration Day; won Golden Potlatch at Tacoma, July 5; Montamara Festo races at Tacoma, July 7; Santa Monica road races, August 9; first in Corona 450 class, September 9; first in Corona free-for-all, September 9; first in 100 free-for-all at Bakersfield, September 28, and first in both 15 and 25-mile races at Fresno, October 4.

Michigan Cyclists Organize.

Motorcyclists of Michigan are organizing a state Federation of American Motorcyclists. A. R. Ketcham, of Ann Arbor, has been appointed as state commissioner and he expects to get the different clubs lined up in time to have a state convention next June. Members of the Bay City Motorcycle Club are working to have the convention held in their city.

CAR WINS ON FARM

Horse and Motor Compared for Tractive Powers.

UTILITY MOTOR IS SEEN

Automobile Conceded to Have Best of Argument, However Considered, as Decreased Value of Equines Shows.

BY DENNIS H. STOVALL.

PHILOMATH, Or., Dec. 20.—(Special.)—Both in figures and facts the motorcar has the best of it in the matter of pulling power for work on the farm. The writer is a graduate of the State Agricultural College, where economy and practice are made prime features in every method taught. This has naturally led to an attempt at economy and practice on the farm. And this, in turn, through the employment of a motorcar, has led to the conclusion that one good automobile is worth a number of horses if properly used.

In college we were taught that the tractive power of the horse must diminish as his speed increases; likewise does his working ability decrease. With the motorcar, speed increases rather than diminishes its working ability, when normal conditions exist. Three things cause the horse to lose his working force; these are speed or length of time employed; bad roads, due to mud, deep ruts, stones and sand, and steep roads. Only two of these affect the motorcar, and these are bad roads and steep roads; for, up to a certain limit, speed makes no difference with the machine, and as long as it is supplied with fuel and oil, it may be employed for an indefinite period—it does not have to "stop for wind," or for rest.

We were taught further and many of us have since learned by actual practice, that the average draft horse, traveling one mile per hour, has a pulling power of 250 pounds, for such time and distance, provided the road is good and practically level. This pulling power does not mean load carried, but foot-pounds or tugging strain exerted on the load. Under the same conditions, but traveling, two miles per hour, the horse will draw but 125 pounds; traveling three miles per hour he will draw but 83 pounds, and at four miles per hour only 62 pounds. Such calculations are made on the basis of ten hours steady work. If the horse works for a smaller number of hours, his traction may increase as the hours diminish, down to a certain point, this being to about five hours per day. Attempt to increase his speed above four miles per hour, and the horse, so far as draft purposes are concerned, is of but little service.

Tractive Power 250 Pounds.

So, under the most favorable conditions, and for the shortest time, the tractive power of the horse is not over 250 pounds. The motor-truck, or even a staunch touring car, low geared, will accomplish far more in the matter of tractive ability; moreover, the horse can do his best work only when kept within the limits of five to eight hours, while the motorcar knows no working limit—it works just as faithfully, just as strongly at the end of 10 hours, or at the end of 50, as it did at the close of the first.

As aforesaid, bad roads diminish the working power of the horse and of the motorcar, placing them both at a disadvantage, but steep roads, with a hard, smooth surface, may be negotiated by a motorcar under full load, when a horse would be completely stalled. This is best shown by comparison. On a level road a horse will draw a load, including the weight of the wagon, of one ton. Let him begin an ascent of 4 per cent, and he at once must increase his tractive force or tugging strain from 60 to 156 pounds, in addition to the 67 pounds required to lift his own weight, or 223 pounds in all. The horse may, for a short time, exert twice his regular tractive force without injury, but to persist in this for any length of time makes him unfit for any service.

Thus it is seen, and is well known to all drivers of horses, that the latter have but scant pulling power for continuous service on roads that are steep. A motorcar will negotiate a grade of 10, 20 or even 40 per cent under full load, taking all of them under 10 per cent at full speed, and those of steeper range at speeds of five to ten miles an hour. Unlike the horse, the motorcar does not stop to rest.

Utility Machine Coming.

So, in both fact and figure, the motorcar has the best of the argument when only the features of pulling strain and speed are considered. Still does it win when economy and practice are brought into the test. On the farm the horse, if kept in fit condition for service, requires almost constant care. Whether in service or idle, he must be given daily attention. The motorcar needs only to be sheltered properly. Farmers, particularly those whose farms are factories and are managed and operated on business principles, are beginning to learn the worth of the motorcar as a machine for service. Though the writer does not claim to be a seer or a prophet, the prediction is here offered that the time is not far ahead when the motor machine, as a combination of tractor and power plant, will be almost universally employed on the farm; that to the farmer, instead of employing two to four draft teams, will have but one swift roadster and possibly one utility or "family" horse. All his plowing, his harrowing, his seeding and harvesting will be done with the motor. And the same motor will supply all needed power for cutting silage, for chopping feed, for pulling stumps and clearing land, for sawing wood, for churning, for grinding tools and developing electricity to light his home.

After all, this is not a dream, for such machines, necessarily crude, as the first machines of any kind must be, are already in service. Better ones will come. Even now, in the Willamette Valley the finest horses are "going begging." The writer saw horses sell at public sale this Fall and early Winter for $1 to $5 each. The best animals sold for less than half the supposed market price. Already "horse flesh" is cheap, but the motor will make it even cheaper.

Commissioners Are Named.

President B. J. Patterson, of the Federation of American Motorcyclists, has just appointed the following state commissioners for the ensuing year: W. D. Gresham, Birmingham, Ala.; L. W. Page, Moss Point, Mo.; J. D. Miller, Atlanta, Ga.; R. L. Garrison, Memphis, Tenn.; T. O. Wansleben, Washington, D. C.; E. F. Hornie, Louisville, Ky.; William Wood, Baltimore, Md.; M. M. Counsel, St. Johnsbury, Vt.; Philip Kennard, Tampa, Fla.; A. R. Ketchum, Ann Arbor, Mich.; M. H. Hawkins, Honolulu, H. I.; M. D. Baird, Minneapolis, Minn., and E. B. Ewell, Richmond, Va.

Widnes, England, sells gas to its consumers at from 22 cents to 26 cents for 1000 cubic feet. The town now wishes to spend $5,000,000 enlarging its plant, as consumption is increasing rapidly.