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## THE LIGHT OF THE FUTURE

A Prophecy Fulfilled Much Sconer Than the Prophet Dreamed.

THE BEGINNING OF ELECTRIC L'GHT

however, there was a glare of light which by the city, but he prefers to be independent came from this ball of fire in the glass globe. It was before the days of electric lighting and old Uncle Baldwin stopped and gazed in open-mouthed wonder. As he did so this big, broad shouldered young man came to the door. His brawny arms were bare to the elbow. A leathern apron covered his chest and fell to his knees. His hands were blackened and his face was smudged blackened and his face was smudged dirt, but his eye was bright and his athletic form was the personification of vigor and force. As Uncle Baldwin saw him he

"That is a wonderful light. I don't underit. What is it? There is no pipe for Where is the wick and where is the oil? Say, what is it, anyhow?"
Then came the reply:
"That is the light of the future. That is

electricity! I am going to light the world

The old man, for a very sharp old man he was, became interested at once. He inquired how the light was produced. He inasked many questions as to its cost and before he left he had told the young man that he would take \$500 worth of stock in his company, which had been organized to push the invention. He rather hugged himself over his investment, as he left the young man and his ball of fire, and when a half hour later he found himself in the home of his friends, surrounded by some of the most prominent people of Cleveland, he could not rest until he had told of the wonder he had seen and of the stock which he had secured. As he spoke the crowd burst into laughter and Uncle Baldwin's relative, then and now one of the most influential men of Cleveland, said: The old man, for a very sharp old man of Cleveland, said:

of Cleveland, said:
"Well! well! well! And so you have been taken in by that young fellow Brush and his crazy ideas about electricity. I have had dozens of chances to buy his stock, but I wouldn't give a cent for a thousand shares. Why, uncle, the man is crazy. His ideas are impracticable and impossible of execuyou might as well put your \$500 into Lake Erie as to give it to him." so the Cleveland man went on. He cited the noted capitalists of Cleveland who would have nothing to do with Brush's invention and he finally persuaded Uncle Baldwin that

he had made a mistake.

The result was he withdrew his offer. As he came to the door the young man looked up from his bench and said: "I suppose you have come to back out of your proposition as to that stock. That is

the way they all do. But I tell you you are making a great mistake and you are losing a

THE MILLIONS IN ELECTRICITY. It was not many years before Uncle Baldwin realized how great a fortune he had lost. Within twelve months after his refusal the name of Charles F. Brush, the great Cleveland electrician, was on every one's tongue His light had been shown at the Franklin in stitute in Philadelphia. It had surprised the scientists of the world in the great electrica exposition at Paris and the French govern ment had decorated him a chevaller of the Legion of Honor for his achievement. A great company had been organized to operate his inventions. The Brush stock had doubled and quadrupled over and over again until Uncle Baldwin's \$500 worth was of more value than all the savings and speculations of his lifetime. The prophecy of the young man had been fulfilled. His light of the future had become the light of the present and today he has lighted the world with it The streets of the biggest cities of every con-tinent blaze at midnight through the genius of Charles F. Brush. I have stood under his are lights in Tokio and Osaka, Japan. I have seen them cast their snadows over the pigtailed Chinamen of Shanghai and Hong Kong and I have threaded my way through some of the streets of Calcutta, Cairo and Constantinople by the Brush light of electricity. The same light illuminates the big cities of South America and Australia, and Europe and the United States have turned night into day through the genius of this man. His inventions in electric lighting alone are held by many companies the world over, are now represented by an aggregate capital of \$500,000. 000 and his inventions in other electrical lines have created a capital of many millions more. There are today more than \$1,000,000, 000 invested in electrical industries outside o the telegraph and telephone and the electric railways of the world have assets amounting to more than \$600,000,000. Mr. Brush is the inventor of the storage battery, and all electric roads which are run in this way pay him a royalty. He received \$500,000 in a single sale of some patents in London, and the rubbing of his electric lamp has caused the genit of electricity to bring him a greater fortune than that represented by the wildest freams of Aladdin. The poor young man is poor no more. The capitalists of Clevelant

MR. BRUSH'S EUCLID AVENUE PALACE. Still, with all this the world knows but little about Charles F. Brush. With all his genius he is modest in the extreme. He early adopted the policy of keeping out of print. I do not know of a single interview which he has hitherto given to the public. He has contributed little to the scientific terms, and the world knows him. He has contributed little to the scientific journals, and the world knows him only through his work. It has no idea of the man, and there are few who appreciate his wonderful character and the wide extent of his achievements. I spent an evening with him not long since at his big mansion on Euclid avenue. He has one of the finest houses in the United States, and one of the most comfortable homes. It is lonest houses in the United States, and one of the most comfortable homes. It is located in the best part of Euclid avenue, which is, you know, one of the finest streets in the world, and it is surrounded by seven acres of magnificent lawn, where the land is so valuable you have to carpet it with greenbacks to buy it. Looking into the grounds from the street makes you think of one of the old English estates. Immense forest trees shade the velvety green and a forest trees shade the velvety green and a winding walk leads through these up to the house. This is a massive structure of Beren sandstone, the whole front of which is cov-ered with carvings, save where, here and there, magnificent windows of stained glass show out. It is an immense building of three stories, with many turrets and towers.

to longer talk about his crazy ideas or elec-

wailed vestibule contains another diamond globe, whose rays bring out the contrast between the polished wood of San Domingo and the mosaic floor of a Roman pattern, which might have been transplanted from the famed baths of Caracaila at Rome. As you look into the rooms beyond you note that, though it is night, everything is as bright as day. Mr. Brush has not invented the electric light to live in darkness, and like house is perhaps the best lighted paloe in the world, and there is certainly no other which is lighted in such a zerious way. It is provided with nearly 400 incandescent and a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights, and the electricity for a number of arc lights. A symposium of interesting Gosaip for Ex-

little finger. This old man was A. C. Bald-nected with the tower by a system of belts and pulleys, and the whole machine is so win of Tiffin, generally known throughout automatic in its make-up that it needs only automatic in its make-up that it needs only northern Ohio as old Uncle Baidwin, and a little oil on wand then to keep it perpetunoted for his great common sense and ally at motion with the wind. It has been shrewd business ability. He had made a in operation now for more than seven years, fortune out of manufacturing churns and but it is so made that it works as well as he was now passing through Cleveland on when it was built. It produces enough electricity to charge the hundreds of cells of these ten tons of storage batteries, and it He had left the depot and was walking furnishes the light for the house and gives through the streets. It was in the early power to run the machinery of Mr. Brush's evening and the gas lamps cast their flick-ering rays upon the pavement. In one spot, however, there was a glare of light which

> NEW FEATURES IN LIGHTING. The arrangement of the electric lights in the house is after the plan of Mr. Brush and his wife. Some of the rooms are lighted lights?" from the ceilings. Others have lights so shaded by opalescent globes and reflectors that only the softest rays surround you, and of the magnificent paintings which cover the walls, each has an electric flame in front of it, so covered by a green reflector that you do not see it and you know of its existence only through the rays which are thrown back by the work of art behind. In the top of the building there is a great hall, in which Mr. Brush has one of the finest magic lanterns in existence and this he operates through an electric light of 3,000-candle power. The average calcium light, or that produced by oxygen-hydrogen gas for magic lantern use is, he tells me, 500-candle power. His electric light for this purpose is six times as strong and he has a dissolving apparatus of his own invention in which all his slides are registered. During my talk with him he referred to the wonderful work which the Japanese have been doing in coloring lantern slides, having seen some

which I used in a lecture recently delivered in Cleveland on Japan, and I told him I ould give him an address where he could get his slides colored. He replied: "I do not want any one else to color my slides. I could prefer to color them myself and I ope to have time to experiment in this way ater on. I think there might be as much art shown in coloring slides as in painting pictures, and the artistic effects of the best antern work are yet to come. CHARLES F. BRUSH IN 1895.

But before I give you our conversation let me tell you how Mr. Brush locks. I met him in one of the large parlors on the ground floor of his house. He is a physical giant, but so well proportioned that his form commands your admiration. When Gambetta saw him at the Paris exposition in 1881, he said: "I don't know which to admire most in Mr. Brush, his mental attainments or his magent physique. Mr. Brush is about six eet two in his stockings. He is broad-houldered and big boned. His head is large, and it is fastened to his frame by a strong well-shaped neck. He stands straight. ils shoulders well thrown back, and his chest s deep and full. He has a dark complexion and dark eyes, which show out from under heavy brows. His forehead is high and full, his mouth strong and characteristic, and his inder law firm and indicative of strength now 46 years of age, and is in his inellectual and physical prime. He retired rom active business several years ago, and it that time expected to devote five days out of every week to his laboratory work and one to his business. The demands of his large property, however, are so great that he has almost reversed the order and is now devoting about five days to business and one to his laboratory. He is working to get away from business, and he hopes in the uture to devote more of his time to scientific nyestigation and experiment. The day of his aboring hard for the dollar has long since gone by, and while in the future his good business brains will lead him to get all the money possible out of his future inventions. till his work will be more that of scientific

A BOY INVENTOR.

xperiment than money grubbing for new

During my talk with him I asked him a number of questions about himself and his first experiments in the field of invention been an experimenter all his life. father was a farmer, who lived near Cleve land, and he gave his boy a good education He showed a wonderful aptitude for chemical istry, physics and engineering. Said he to me the other night, "I can't remember when was not interested in physics. I began to addy them when I was about 12 years old. long before I had reached them in my course of studies at school.
"I was always experimenting with some-

thing, and while I was in the High school in Cleveland I made microscopes and telescopes, grinding the lenses and turning out some very fair instruments."

HIS FIRST ELECTRIC MACHINE.

"When did you first become interested in "I can't tell when I was not," replied Mr. "I can't tell when I was not, replied at Brush. "When I was 13 years old I had made a frictional machine to generate electricity. It was made out of a bottle, and I had it so fixed that I could charge a Leyden I don't jar with it. I wish I had it today. I don't know what became of it. About this time I made some electro-magnets and had an elecric battery or so. This was before I was in the High school, and I suppose my interest in electricity could be said to date as far back as the age of 12."

tricity. He lives among them, one of the greatest capitalists of them all. His genius has made his city noted and the great electric light company, which he founded, gives "Had you any idea when you were a boy at you would be an inventor, and did you ever think at that time of being able to make "Yes," replied Mr. Brush, "I did. While employment to hundreds of families and its influence reaches to the ends of the earth. I was in the High school I got up a plan for turning the gas off and on at the street lamps and of lighting it by electricity. The whole was to be done with an electrical machine. and it was to dispense with the lamplighters. I thought for a time that I might make

some money out of it, but, though it migh operate today, at that time it was hard commercially practical, and I gave it up." PROPHESIES ELECTRIC LIGHT.

"What was your next electrical experi-'I can't say as to that," replied Mr. Brush. "I was always working at electricity. I read all that I could find and I watched the reports of experiments as they were given in the newspapers. While I was still in the High school I produced an electric are light with a lamp and a battery of my own construction and when I graduated from there it was a curious thing that my oration was on electric lighting and I prophesied that electric lighting would be the light of the world and that it would be generated by means of dynamos."

'Have you a copy of that oration?" 'I don't know," replied Mr. Brush. have looked for it, but I can't find it. You see, I delivered it twenty-eight years ugo and that is a long time."

"Where did you go to school after that?" shafts of colored radiance. An attachment "I went to Ann Arbor to the University of Michigan and graduated there with the de-Heavy stone columns uphold the wide portice in the front, and easy stone steps lead you to the wide front door. The portice is lighted by an opalescent globe, which hards the device of mining engineer in 1869. I then came the rage. An American electrician who has brought the design over here has interpreted by the still experimenting on electrician proved on the original idea by using bulb the work of an analytical chemist, but still experimenting on electrician electrician who has brought the design over here has interpreted by an opalescent globe, which hards the design over here has interpreted by an opalescent globe, which hards the design over here has interpreted by an opalescent globe, which hards to need the rectangle of the rectangle o

Inventor Brush's Perseverance and the Magnificent Results—Instructive History Detailed by the Noted Cleveland Electrician.

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"That, man, is the light of the future! "That, man, is the light of the future! "That is electricity! "If am going to light the world with it!"

These were the words of a big, broad shouldered young fellow of 28. They were uttered about eighteen years ago to an old man who stood in front of a shop on one of the side streets of the city of Cleveland and looked with wonder on a glass globe in which blazed a ball of fire, upheld, as it were, between two black carbons the size of your little finger. This old man was A. C. Baldwin of Tillip separately have a treatment of the modern and the sum of the side streets of the city of Cleveland and looked with wonder on a glass globe in which blazed a ball of fire, upheld, as it were, between two black carbons the size of your little finger. This old man was A. C. Baldwin of Tillip separately have a treatment of the side streets of the city of Cleveland and looked with the tower by a system of belts in the house, and the present are lighting machines had to have one dights machine had to have one system, were present at the Thompson-Houston electric system. The Thompson Houston electric system, were present at the time. The first and the have electricity for these is alterward to have one of lights and the whole store, the sufferward of the Thompson-Houston electric system.

THE WINDMILL AND ITS DYNAMO.

There are, so he told me, ten lons of storage batterles, the lights, and the store of a crights are clighting machines had to have one dights and the house, and the present are lights gratefully sparsed the first that proposed a series of arc lights are clighting washines had to have one dights and the house, and the present arc-lighting machines had to have one dights for this house, and the present arc-lighting and lit were because the sum of the first had present arc-lighting aspects of the time. The fir was in the past with the old machinery. It was in 1878 that I invented this, the modern series are lamp with the shunt coil. This was the invention that really made are light-ing practicable and commercially possible." "Where was it first used?" I asked.

Some were first used for the lighting of stores and shops, and among those first to introduce the arc light was John Wanamaker of Philadelphia. One of the first instances of street lighting was here in Cleveland. We put up twelve lights in the park and the people came out in force to see them the first night. They had no idea of what the electric light was and many of the street light was a street l what the electric light was and many of them wore smoked glasses for fear they might be blinded by its rays. The street lighting soon spread and our lights are now to be found, as you know, in nearly every great city of the world."

ELECTRICITY DIRECTLY FROM COAL "Is there not a great loss in the production of electricity from coal for electric

"Yes," replied Mr. Brush. "We only get "Yes," replied Mr. Brush. "We only get about 10 per cent of the force from the coal in the production of electricity, but this is in the production of the mechanical energy. In the conversion of the mechanical energy into electrical energy by means of the dynamo only from 5 to 10 per cent is lost and the modern dynamo is probably the most perfect machine that the world has ever produced."

"Will we ever get electricity directly from coal?" "I think so," replied Mr. Brush. "In fact, profitable. It is now twenty years since I succeeded in getting electricity directly from coal. It was in 1874. I used carbon as the ombustible element in a voltaic battery, the ectrotype being a fused salt or oxide capale of fusing the oxygen for the combustion of the carbon. I tried fused caustic soda, bicarbonate of potash and oxide of lead and got a good electric current in each case, I diate results. The fields of invention are vast. We stand just on the threshold and there will be new inventions as long as man has mind to create and the will to investi-gate the great forces of nature and the pos-sibilities of their combination." THE POSSIBILITY OF NEW INVENTIONS.

you anticipate many new inventions today is a far different machine from that of forty years ago. Still it embodies the same undamental principles.

lectricity today? "It is in the field of thermo-electricity or heat electricity. It is now thought, you know, that all light and heat are produced by electrical force and it is in these branches that the best work is now being done." HOW BRUSH PROTECTS PATENTS.

"How about patents, Mr. Brush? I ones ad an interview with Mr. Thomas Edison, in which he said that he had spent \$600,000 in not had one minute's protection. You have had considerable experience with the patent office. Does Uncle Sam run his business on

"Uncle Sam may be all right," was th "I have no doubt that the heads of important information to leak out. have applied for patents again and again, only to find interferences filed before they were granted, and it is only through my reat care in keeping records of my work that I have been able to secure a number of my inventions. Take the arc light. While was working upon it and attempting take it commercially profitable I kept very full journal of all my experiments. recorded everything from day to day, and dated it, and had witnesses called in to sign he records. This I found of immense value to me in my patent suits. I had 200 of them and gained all except one. This I did not care to win, as there was little in it, and I practically let it go by default. I am very sorry now that I did so, as it broke

THE STORAGE BATTERY.

"How about the storage battery?"
"I had a great fight in the patent office over it," said Mr. Brush. "The invention was fought over for four years in the United States courts, and it was finally decided in my favor. I was working in the storage battery and had completed my experiments at the time that Faure invented his storag battery in Europe. As soon as I heard of it I filed patent applications for everything had in order to get my rights in America, t fore he could apply Now I get a royalty on all forms of storage batteries and the storage battery of today is founded on my invention.

"Will storage batteries be the street car equipment of the future?' "I don't know as to that," replied Mr. rush. "I doubt it. You cannot run cars so cheaply by them as the trolley. I should rather think it would be the underground

I next asked Mr. Brush as to his presen xperiments, but further than than he was working along scientific lines he preferred not to say. He is a man of great intellectual activity and his chief pleasure is in his work. He is a man of great intellectual During our talk he told me he thought the greatest enjoyment a man could have came with the moment of making some new dis exvery in science or mechanics, and there is no doubt but that his experiments will be continued to the end of his life. He has done wonders in the past. What will he not

# Frank G. Carpenter

A Frenchwoman of fashion has invented a beautiful shade for electric lights. She got her inspiration from the falling of a sunbeam on a beaded Japanese screen, and, full of the idea, she summoned an electrician for experiments. The shades were drawn, the beaded Japanese sloth was thrown the beaded Japanese cloth was thrown around the bulb of an incandescent lamp, and when the current was turned on the effect was ex-The light was split in o a thousand of colored radiance. An attachment

on the sporting tone of their athletic brothers since bicycle riding has become so universal. The visitor at the cycling academies in the large cities never hears a breath of possip, and not much about beaux and clothes, but he will hear a great deal about coasting, scorching, heading and various other things interesting to eyclers.

"I just can't take care of my wheel," said a discouraged girl to a New York Sun reporter. "I've had the instructor explain and illustrate three different times how I must but if a screw really gets a little loose I'm as helpless as a baby and can't even find which one it is."

A western girl sat on a bonch near by humming and patting her foot on the floor, but she heard what was going on and remarked pleasantly: "If I were you, I wouldn't attempt to take care of my wheel. Why don't you keep it at a stable."

"A stable? What kind of a stable?" "Why, a bike stable, of course," said the girl from the woolly west. "Dan't you have them in New York? Now, in St. Louis, where I come from, the bike stable is 'riving out the livery stable. It's a very paying business there, and I'm sure there must be some here, because I've always heard that New Yorkers had everything that paid. You see it is this way: There are a great many people, like yourself, who ride wheels and I have already gotten it, but not in such a way as to make the invention commercially profitable. It is now twenty years since I are not so unruly as horses, perhaps, but really they require a great deal of grooming to keep the nickle-plate bright and the tires and chains in first-class running order The man who works down town and wishes to ride his wheel to and fro from businers has no place to keep it unless there is a bi-cycle stable. And think of the masses of have not pursued my experiments in this line of work because I thought I saw other lines which promised better and more immediate results. The fields of inventor a cycler has a place like this the care of the wheel outweighs the pleasure."

NOMINAL COST. "But doesn't it cost a great deal to keep a wheel in one of these stables?" inquired the discouraged girl eagerly. "No, indeed. Only \$1 a month, and no "Who can tell?" was the reply. "The electric force is still to a large extent a secret from us all. Of late years there have been few new fundamental inventions in electric lighting. There have been many improvements and modifications of the old ones. sides his regular customers who keep their wheels there all the time, he stowed from The light is steadily being made better, but it is the same light, just as, for instance, we forty to fifty every day, and that the deforts the same light, just as, for instance, we forty to fifty every day, and that the deforts the same light, just as, for instance, we forty to fifty every day, and that the deforts the same light, just as, for instance, we forty to fifty every day, and that the deforts the same light, just as, for instance, we forty to fifty every day, and that the deforts the same light, just as, for instance, we forty to fifty every day, and that the deforts the same light, just as for instance, we forty to fifty every day, and that the deforts the same light is stored in the same light in the same light is stored in the same light in the same light in the same light is stored in the same light in the greater than the supply. In fact, he says he expects to get rich." 'I wonder if there is such a place in New

said the discouraged wheelwoman. and she went out immediately to look for Just as she left, an elderly woman, the sister of a prominent judge, joined the party of enthusiasts and immediately began: "Isn't

the woman instructor here an institution? don't see how we could get on without "Why, you don't need a chaperon, do ou?" said a pert girl in a very short skirt.
"No, I do not; but my three daughters who ride here, and often have to come

out me, prefer one," said the woman rather severely. "However, I do not view the woman instructor merely in the light of a chaperon. When a young girl comes here for the first time she sees that the novice the patent offices are honest, but I have had has the proper kind of a wheel and saddle, a number of experiences which lead me to and if a timb woman comes in she arranges elieve that the subordinates sometimes al- lall the details about the ticket and the instructor for her, and encourages her with amiable and courteous words. Really, I'd be afraid to say how many lessons I've taken, and I would have given up long ago Another mother joined in the conversa-

tion, saying: "You are right about the woman instructor; she is a necessity. I have been allowing my daughters to ride though I had scruples about their doing so with only strange men for instructors. One day I happened in just as a young woman fainted and fell off her wheel. Every instructor in the place rushed up to her, and, while I recognized the fact that all had only the kindest intentions, it flashed over me as they lifted her out that there ought to be a woman in an official position around. The thing made such an impression on me that wouldn't allow my girls to come here any more until I heard that the managers had engaged a woman instructor. The pert girl said under her breath as she ode off: "Let the old women talk all they

"Let the old women talk all they want, but I don't need any chaperon.' DISCOUNTS THE HORSE.

Sometimes persons who have never ridder physiological effects, will assert that it is inferior to horseback riding, both as an exercise and a pleasure. But those who have In some way or other my patents to back and Faure's interferences kept me out back and Faure's interferences kept me out of them for four years, but I finally conquere! this is not so. It cannot for a moment be send showed that I was the first inventor. both thoroughly, says Porter's offer the advantages or produce the results which follow with certainty the regular use of the wheel, and which are testified to by thousands of its users. Moreover, as to pleasure, the motion of the wheel is far and away more exhibitanting; as it is more smooth, even and harmonious. However slowly one travels, there is always the same agreeable motion, far removed from the list-less walk of a horse, which constitutes a considerable portion of horseback riding The other gaits of a horse are too violent to be long kept up by horse or rider. At best the exercise is variable and more or less violent. How different is the wheel, which is uniformly gentle, pleasant and exhibarating, and infinitely more certain and bene-

ficial in its effects.; A good many wheelmen are disposed to drink very frequently during rides in warm weather, but even water, which is the ordinary drink, can easily be used to excess in such cases; though, if one perspires freely, ome liquid is particularly necessary. ercise, during its continuance and after its cessation causes a sensation of thirst. Frequent drinking, however, soon becomes a habit, but neither a satisfactory nor ad-vantageous one. The constantly recurring sensation of desiring to drink makes one meomfortable, while too frequent gratifica-ion of the desire is bad for the system, One can and should cultivate moderation in this respect. Water, of course, is most available and generally answers, but if one much parched some simple thing like nger als. lime juice and soda, acid phoshate and soda, or milk, will better quench the thirst. For exhaustion an egg beaten up in milk is more nourishing. Nothing alcoholic should ever be taken during a ride and only in great moderation after it is

WOMEN AND THE WHEEL. One notable thing about these experienced doing in ordinary road racing. It may be

riders is that they each and all advise against long runs for every woman rider. When asked what especial women they would ad-vise not to ride a wheel, each one replied that

panacea for sleepless nights and torturing

Every practical wheelwoman can, if she

EVERYBODY WITH WHEELS, MORE OR LESS

Every practical wheelwoman can, if she wish, take excellent care of her wheel with little trouble. There is a great difference in the use of a bicycle on city pavements or over country roads. The pavements are so continually wet that a bicycle is "muddled" in a run of a few blocks. This mud, however, is light, dries quickly and is easily removed. After a trip on boulevard and park roads the machine should stand until the mud is thoroughly dry, and then can be wiped down with a dry soft cloth. If the mud is thoroughly dry, and then can be wiped down with a dry soft cloth. If the mud is certainly below par among women nowadays. Their conversation takes on the sporting tone of their athletic brothers quality of the oil is of greatest importance. It should be free from gums or adhesive particles. For an ordinary rider oiling after each 100 miles is sufficient. If for any reason the bicycle demands more oil than it gets the rider should realize is quickly from the difficulty in propulsion. Either very cold or very hot weather affects the metals, making the use of oil at those times a matter of

now talk among some of the clubs of or-ganizing anti-bicycle thief associations along the lines of the anti-horsethief associations of earlier days, and the proposition is to apply the same corrective—the halter. But whether this drastic measure is adopted or not, the operations of the thieves who make wheels a specialty have assumed such proportions that insurance against loss of bicy-portions that insurance against loss of bicy-cles by theft has become a big business. Companies have been organized both in Chicago and the east, which, for a fixed annual premium, guarantee bloycle owners

Chicago and the east, which, for a fixed annual premium, guarantee bloycle owners against loss of their wheels by theft, and supply them with equally good wheels in case their own are stolen and not recovered. Bicycle stealing has been reduced to a solence. Last year the police of Chicago broke up a gang who made a practice of stealing wheels here and shipping them to Milwaukee to confederates who disposed of them there. The wheels stolen by the Milwaukee contingent of the gang were shipped to Chicago and disposed of here. In this way the chances of detection and the recovery of the wheels were reduced to a minimum. But other gangs are working the same game. other gangs are working the same game. Several wheels stolen in Chicago this season have been recovered in Cincinnati, Detroit and Indianapolis.

It is a comparatively easy matter to steal a wheel, but some of the thieves display no little ingenuity and daring. One of them, dressed in a bicycle suit, came into one of the leading bicycle club houses only a few days ago, riding a solid tire machine not worth \$10. He stacked his machine up with a lot of others, asked the janitor for the pump, as though he wanted to inflate a tire and in a minute or two rode off with a good wheel. It was all done so naturally and unostentatiously that it was some time before the full import of the occurrence was realized.

SLANG TERMS USED BY RIDERS.

A bicycle slang has sprung up which will be constantly enriched, says the New York World. A youth was talking boastfully of some deeds of his in a western town in the women who were resting on their wheels at Claremont. He had evidently not rehearsed his story sufficiently and was plainly befogged both as to his geography and chronology. He stopped short, never to resume that story again, when one of the young women quietly remarked, "Fredd.e your lamp is out.

Being cyclists all, the point was appreciated and Freddie was squelched. "Scorching" is the term that indicates the making of very fast time. The suggestion is that the roadway is being fairly burned by the The suggestion is that rapidly flying wheel. Hence a young man who is traveling through life at a very rapid galt is called a "scorcher," and an especially jovial or hilarious gathering is referred to as

"scorching good time."
"He has lost his tire" is a cousin to the generally understood expression "He's off his trolley," and means that some person acting in an extravagant, unreasonable or foolish manner. A cyclist who is weary or exhausted and desires to stop by the roadside for refreshment remarks to his

companion, "Let us stop here and pump up," "pumping up" being the process of renewing the air in the pneumatic tire.

One of the delights of cycling is coasting down long hills. No effort is required other than to preserve an equilibrium. Hence a person with whom the affairs of this world person with whom the affairs of this world are running very smoothly is referred to as "coasting." "Life is one continuous coast with him," remarked a tired cyclist as he stood with his wheel on the side of a Central park drive and watched a young man who is trying to spend \$50,000 spin by on a silver-mounted wheel. When young men are together the term "bloomer" is used as applying to any member of the fair sex. "Here comes my bloomer," "He's out every morning for a sp.n with his bloomer," "His bloomer gave him the shake" or "Here's to the bloomers, bless 'em," are sample expressions heard at any of the hundred roadside resorts where the coulist transfer. dred roadside resorts where the cyclist stops to allow his wheel to cool off.

A policeman is known among the fly youth

wheelmen as "a header," a term indicating the danger that lurks in the bluecoat for the cyclist. It is a reminiscence of the days of the high wheel, when a common and times serious accident was the 'header' or dive over the wheel. The cyclometer, a little device for registering the distance traveled

is called a "ticker."

A bicycle is called a "bike" and a wheelman is also called a "bike." The Michaux club, when out on parade, is halled with the remark, "Here come the Micks."

BEST WHEELS THE CHEAPEST.

The amateur with no ax to grind is con

tantly besieged with questions as to the relative advantages of different makes Amateurs are more open to prejudice than professionals, probably, as they are far more ignorant, and ignorance, as we all know, is pig-headed. But persons of both classes, amateur and professional, of the best capacity, unite in declaring all high-grade bicycles to differ slightly, and indeed imperceptibly. One kind of tire may have a pretty general preference, and one kind of spoke; some makes of wheels are weak in a particular spot, and some riders may be so easy on that special spot, or so lucky, as not even to find out the weakness. Given certain undeniably first class parts, and it makes little difference what expert puts them together. Last year there was more decided indersement of favorite machines; this year there is less feeling, and everybody is willing to admit virtues in everybody else's wheel Of the lower grades of wheels it is impossible to speak too disparagingly. As well might one try to economize on false teeth or a wooden leg as on a bicycle. The best is the cheapest in this case, if in no other, and when you find yourself on a lonely road, far from a car route or alleviation from the hot sun, the rain, the wind, or a fierce thirst, with a broken pedal or a fractured handle bar or an unblowable tire, or any other chear disqualification, you may give the \$25 you saved on the wheel "to boot" for another make, or to the dector for a cracked crown There is no economy in a cheap wheel. like a cheap steamer or buggy, or inexpen-sively put up bridge—bound to break down some how, and at the most inepportune mo-As there is no opportune moment however, to break one's neck, this last re-mark may be stigmatized as a superfluity. There is absolutely no reason for stooping over the handles in either of the two ways so ommonly seen, and there is no excuse for se

necessary for the "acorcher," when engaged in "scorching," to assume the one or the other of these attitudes—to sprawl with the body straight, but almost horizontal, and the the exercise, judiciously taken, war good for all women. Timid, nervous women would upper part of the back as if trying to break find bicycle riding a tonic for nerves and a it in its middle, and throw the shoulders foreard as if desiring to make them meet across his breast. Even so, one who is not "scorching" does not need to make himself a hideous object to look at, and also to reduce the

a convertible costume, suitable alike for the promenade or for cycling, and even mountaineoring. Off the machine it represents a full-length skirt, adapted for home wear. Knickerbockers are worn beneath it, and galters if desired. The skirt is made in a good serviceable tweed, of all colors, or in cheviot serge, the bodice, skirt and knickerbockers being sold together at merely nominal price. The skirt is made to button on either side. When the lady mounts her bloycle she simply unfastens a few of these buttons, which are set in groups of three, raises the skirt, passes her arms through raises the skirt, passes her arms through the apertures formed by unbuttoning and the gown falls loosely about the figure in a judgment.

At least once a year a wheel which is in constant use should be sent to a shop, taken apart and carefully looked after by an expellum. It is not too warm, because it is so loose that it does not trammel the figure.

This can be done for 50 cents, and less litustrate three different times how I must do it, and I've read two excellent articles in the papers on the proper care of machines, but I can't grasp it somehow. When the instructor is talking it seems a perfectly simple matter, and when I take my cycling scrap book from its shelf and read the clippings on that subject I feel as if I could take a wheel to p.eces, put it together again, cil it, inflate the tire—in fact, do anything with it; but if a screw really gets a little loose I'm ready having been reported as residual from cago alone. These figures are obtained from the wheels reported as stolen to the police. Doubtless many more have been lost to their owners which are not included in this record, able style. If gaiters are needed they can be made of brown box cloth, or can be specially ordered of the same material as the draws, and when the cold weather comes a draws, and when the cold weather comes a content of the same material as the specially ordered of the same material as the draws. dress, and when the cold weather comes a cardigan can be introduced under the be-coming bodice. The dress has been patented not only in England but elsewhere, and has

found favor in France as well as in England INCREDIBLE STRENGTH.

and America

It seems absolutely impossible, says the Engineering News, that a wheel thirty inches in diameter, with a wood rim and wire spokes, so light that the whole structure weighs only twenty ounces, should sustain without permanent distortion the weight of hub support whatever,

It also seems incredible that a cycle capable of carrying a man of 160 or 175 pounds weight of twenty-two or twenty-four pounds the cycle carries a greater load with safety than has ever been put on any other vehicle. The influence of the cycle on social life is already great, and will probably constantly extend, as it provides an outdoor port and amuseured. in weight can be made so light that the whole structure weighs less than nine pounds.

stantly extend, as it provides an outdoor sport and amusement for women which did ot previously exist in any form in America. American women are not walkers, but the cycle is perhaps even better suited to woman's use than man's, and seems destined to add an outdoor element to the life of woman of the world over which was not possible without the "winged wheel."

The miracle of the bicycle lies in its birth death and resurrection; in its incredible load-bearing power in proportion to weight in its displacement of the horse as a means of pleasure, and in the selection of its me-chanical details of compressed air support ubular framing and chain driving

All of these are details often before intro duced in machines, but never before per-manently retained. That these cast-offs are undeniably power savers is convincingly proved by their continued use under human muscle driving power. Finally, the one great achievement of the cicycle is to increase the human powers of

ocomotion so that the slow-footed man is made one of the swiftest of all running crea-

THE WHEEL IN THE ARMY. The sum of 100,000 marks is included in the German army estimates the present yea for the supply of bleycles to the army. Tw

wheels are assigned to each battalion. Bi-cycles are to relieve the cavalry of a great part of its intelligence duties and to take he place in quarters of mounted orderlies An Australian officer has invented a military leyele, which has been received with hearty pproval. An exceptionally high rate peed is attained with it. The saddle approval.

speed is attained with it. The saddle is blaced very low. The Russian, Belg'an and Portuguese armies have all made careful experiments with the new service, the result being that it is permanently adopted in each. Regular in-struction, practice and drill are provided for. The general conclusion, as expressed by the editor of the United Service, is that there are few parts of any civilized country where a wheelman cannot in a day cover a least twice the distance possible to a horse man, and in several consecutive days' riding the difference is greater still.

This is not a theoretical conclusion, but one based on personal experience, bearing out the results obtained in the several arnies above named. Good roads are desirable for bicycles; so they are for ammunition or baggage trains. But the wheelman can take across country over almost any line practicable to a mounted man, and often where the latter could not go. The wheel can be lifted over stone walls or high wire fences. Unless fields have been too re cently tilled or grass is too high, most oper country is found to be practicable to the

### LABOR AND INDUSTRY.

Operations have been commenced at th new tin plate plant of the Crescent Tin Plate company, at Cleveland, O. Over 100 engines were built in that department of the Buffalo Forge company's works, Buffalo, N. Y., in the first quarter of

The Reading Iron company, Reading, Pa on June 1 restored the wages of its 500 em ployes to what they were in 1893, which means an increase of 10 per cent.

Aluminium is being used in making the bodies of cabs. The French have devised a method of preserving fruits by means of alcoholic vapor. The fruit is placed in a room containing

open vessels containing alcohol. In the production of steel the United States | grounds." stands first, largely exceeding the output of Great Britain, and being nearly double that of Germany.

company has been asked to bid on the work of constructing a number of locomotives for he Chilian government. The plant of the American Steel Casting

The Pittsburg Locomotive Manufacturing

company, at Thurlow Station, Pa., has been and 563 liquor started up, employing 200 men. The plant eighty saloons, has been idle more than a year. William Griffin of Pittsburg, who was one of the first to enter the tin plate business in this country, will erect and operate a new plant at North Washington, Pa., in which

he will give employment to 400 men. The Michigan Peninsula Car company has one of its car building departments and the attached founderies working nearly to full capacity. The work now on hand will last to the end of July. From thirty to thirty-

five cars a day are built. According to the figures of Joseph Gruenhut, the city's statistician, there are em-ployed in the manufacture of clothing in Shicago at present about 15,000 persons, twothirds of whom are women and girls. There are in the city about 800 sweat shops.

There are 50,000 women and children in New York City working from ten to sixteen hours a day. In the far east and west side stores woman and children are often employed until 9 or 10 o'clock at night, until after midnight on Saturday and occasionally half a day on Sunday. There are 20,000 chil-fren under 16 employed frequently sixteen hours a day. The average wages of cash absence, tardiness and mistakes.

## RANCH WITH A HISTORY

Reminiscences of a Noted Pieveer Hotel in Saunders County.

TRAGEDIES LINKED WITH ITS NAME

From Gay to Grave in a Blizzard-The Innocent Lynched with the Guitty-Bloody Battle for Possession of an Island.

ASHLAND, Neb., June 14 .- Some thirty years ago there was situated on the present site of Murdock, about twelve miles southeast of Ashland, what was known as "Mullen's ranch." This was a sort of a ranchhotel at the junction of the two overland trails from Nebraska City and Plattsmouth to the mountains.

Mullen, the owner, was a jovial Irishman who had the reputation of furnishing the best beds and the best whisky and of being the most companionable fellow upon the California road. Every other Saturday night be gave a dance at the place, which was attended by all the settlers for twenty miles around.

On one of these occasions two couple of young people drove down from Saline Ford, where the trail crossed the Salt. It was a clear, still winter afternoon when they started, but during the evening the wind swung round to the north and by the time the young people were ready to depart had blown up a regular blizzard. Nevertheless, they started out on their twelve mile drive in an open sleigh. The road was through the hills along the Platte river and is yet one of the worst in the state.

The party lost its way, wandered round and round, up and down the hills and finally upsetting in a stream were completely drenched. The young fellows turned over the sleigh and bundling up the girls beneath it as best they could started out to find help.

DEATH IN THE BLIZZARD. They wandered round in the dark and the sterm all night trying to find a house, but not until daylight appeared was one discovered. Help came, only to find that the four men standing on its side, with supports girls had been freezing within 100 feet of a at four points only under the rim, and no haystack, which was hidden by the darkness. They were carried to the house in an unconscious condition, from which but one recovered. The other died before she could be removed to her home.

A short time afterward a friend of Mul-

The committee were in search of some horses stolen down near Nebraska City. They had found the horses at the head of a tream near the ranch and had traced the hieves to the hotel. The three strangers and the young friend

of Mullen were loaded into a wagon and lriven to a place near Plattsmouth known as Eight Mile grove. There the committee proceeded to hang all four in regular vigilance style. No questions were asked. There was no trial. Ropes were placed about the prisoners' necks, tied to the limb of a tree and the wagon driven from under them.

A NERVY THIEF. One of the thieves was nervy enough to

ell the committee that they were not digging his grave deep enough and actually got down and dug it to suit himself. The young man from up the Platte declared his innocence and simply asked for time to prove it. But it was useless and he was hangel with the rest. Later it was shown that he was in o way connected with the crime.
It was the last act of the vigilance committee. They never got over the murder of the innocent man. Even one man, who still lives near Nebraska City, went wildly

insane and is always talking of the affair. The four graves of the men are still seen at Eight Mile Grove.

Mullen's ranch also figured in the Cass-Sarpy county feud which waged in the early These two countles are separated by he Platte river. In the river was a large both sides. Each county claimed the bland. THE DISPUTED ISLAND.

For a good many years there was considerible feeling over who was entited to the use of the island. In time this grew into a regular southern feud. Whenever a Cass ounty man met a resident of Sarpy county oon the place there was pretty certain to a fight. One day a large party from Sarpy county iscovered a man named Gilbart cut ing wood,

drove him off and followed him home man was dragged out of his house and preparations were commenced as if to hang him. His wife opened fire from the house with a revolver, killing one of the fellows from In the meantime the hired man fled to the ranch near by and aroused the men who were always hanging about. They arrived at Gilbert's just as his wife was being dragged from the house. A desperate fight occurred.

about a year, and several others were badly hurt. Finelly the Sarpy county men were driven over the hill and across the river. In a up in the courts, where it was decided that the property belonged to the government, HARRY G. SHEDD.

Gilbert received a wound from which he died

RELIGIOUS.

An Ohio believer in the Sabbath objects to hurch services on the first day of the week, ecause they prevent ministers, gan-blowers and choir singers from enjoying their day of rest.

Joseph Benton of Metropolis, Ill., better known as the 'blind boy preacher,' had been totally blind from infancy, a period of twenty years, until Monday night, when his sight was suddenly restored, and he now

The ministers of Mount Vernon, O., have, view of the increasing laxness regarding divorce, passed a resolution giving public notice that they "decline to marry divorced persons, except the innocent pearties where the divorce is granted upon scriptural

A new religious sect has been started in Missouri. The members elect an "angel," whose business it is to fly to heaven every little while and find out what God wants th

A census recently taken in New York shows that in the district bounded by Fifth, Canal, Essex and Mercer streets, having nearly 95,000 residents, there are seven churches and 563 liquor saloons, or one church to Efforts are being made, it is said, by the

strict Presbyterians in Scotland to have Prof. Henry Drummond called to account on the charge of heresy, expressed in his mem-orable lectures on evolution delivered in the Lowell institute course in Boston two One of the curious sequels of the Emanuel church murders in San Francisco is the scheme of the pastor, Rev. George Gibson,

to deliver a series of lactures throstate in aid of a fund to repair the church and settle its debt. One of his lectures will be on "The Crimes of a Century," to make enough money to reopen the church next month. In all probability the most distinguished

female clergymen in the country is Rev. Phoebe A. Hannaford, at present a resident of Gotham. She is not occupying a pulpit, however, and it is hardly possible she ever will again. Rev. Hannaford for almost thirty years has been an ordained minister in suc-cessful charge of a number of congregations. Dr. Hannaford is a member of Sorosis, and a well known writer and lecturer, as well as minister. She has the honor to be the plo-neer of women in the sacred desk in this country, as she was the first ordained woman girls is \$1.50 a week, and they are fined for minister in America, and the fourth in