FAY-FOLK.

Some nights I try to keep awake
To see how fairies really look;
(You have to watch so sharp and still—
So says my mamma's Fairy-Book!)

I squint my eyes a tiny ways
And then I see them, one by one,
Come trooping in from fairyland
With funny little hop and run.

They nod and whisper to themselves—
Then scamper off across the floor
As if they'd never, never seen
A little boy like me before!

But if you ask me how they look,
Somehow I cannot seem to tell;
For pretty soon they've slipped away;
And then—I hear the breakfast bell!
—Laura Simondson, in Lippincott's.

IMPRISONED BY LAVA

By ALBERT W. TOLMAN.

IN 1854 the brig-of-war Eudocia, Capt. Henker Lambe, was sent on an exploring expedition to the Antarctic Ocean to determine certain points of the Southern Continent, the most cheerless and inhospitable of all lands. The vessel touched at Cape Town late in November, and a few weeks later again set sail.

Among the brig's company were two midshipmen, Harry Furness from Bristol and Richard Scoresby of Liverpol, who had been together in the service for two years, and had become close friends.

The Eudocia sighted Kerguelen Island, and slightly altering her course, kept due south for several days. On January 14 land, or rather the glaciers that fringed it, came into view upon the southern horizon.

The ship ran for three days along a sheer wall of ice, from one hundred to two hundred feet in height, through a sea filled with floating bergs and floes. Although it was the Antarctic summer, snow-squalls were frequent and the wind was at times piercingly cold.

On the morning of the 18th a column of black smoke was sighted above the ice-cliffs far to the west, and as the vessel approached, this was seen to be issuing from an active volcano, a strange spectacle in that land of ice and snow.

It was decided to effect a landing, if possible, and ascertain the height of the peak. Upon the coast, not far from the base of the mountain, two ice promontories stretched out on each side of a natural basin, almost circular, with an opening about a hundred yards wide affording an entrance from the sea. The cliff at this point was considerably lower than elsewhere, and black volcanic rocks and ravines were visible along its front.

A boat was sent ahead to examine this harbor and to make soundings; and as a result of its report, the Eudocia was soon riding snugly at anchor upon the sheltered expanse. At the head of the little bay was a beach of volcanic debris, with a ravine leading up to the tableland above. Beyond, the smoking cone of the mountain rose over a disfigured region of blackened ice and snow. Streams of water, melted by the heat, were running down the cliffs.

Furness and Scoresby were detailed to go ashore with a boat's crew, to make observations, examine the surface of the plateau and determine the height of the peak. The service was one involving no little fatigue and even a considerable degree of danger, for an ice-field at the base of a volcanic mountain was likely to be seamed with crevasses and filled with hidden pitfalls. The young officers were, however, much elated at the prospect of exploring an unknown land.

A few strokes of the oars brought their boat to the beach of volcanic rock and ashes. The boys landed, taking their surveying instruments and two of the boat's crew. But the men were wholly unable to keep up with the nimble youths, so they were sent back to the shore, whence a boat took them off to the ship.

After a hard scramble up a steep gorge, over black boulders and slippery ice, in full sight of the Eudocia, the boys gained the summit of the cliffs. From this point a gradual slope of rock and ice extended upward to the base of the mountain, half a mile distant.

Toward this the boys now made their way, but with considerable difficulty. The slope that had appeared so smooth from a distance proved, on closer approach, to be a broken country, guttered with deep fissures and ravines, from some of which smoke and steam were rising. There was also perceptible a slight tremor of the earth and an occasional rumbling.

At last, after much labor and fatigue, the two explorers reached a long, narrow stretch of fairly level surface, parallel to the base of the mountain. Beyond lay a deep ravine, apparently impassable. Here they stopped, and made observations to ascertain the height of the peak. A rough calculation gave its altitude as a trifle over four thousand feet.

By this time the long Antarctic afternoon was drawing to a close, and the boys started back toward the vessel, which lay hidden from view beneath the edge of the cliffs. They moved slowly, observing the configuration of the land as they went.

Suddenly the deadened boom of a gun from the brig came to their ears. Its echoes had hardly died away before there came another report, and then another. What did it mean?

Involuntarily they glanced back at the mountain, and a cry of surprise and alarm broke from both. In place of the thin, tapering column of smoke, great clouds of pitchy blackness were rolling up to the sky, as if some giant were heaping fuel on the subterranean fires beneath. Even as they looked, there came a series of muffled explosions, and dull red flames began to flicker about the crater. The ground beneath them trembled ominously.

"Hurry up, Dick!" cried Harry. "There's going to be an eruption, sure!"

He had hardly spoken when a tremendous roar came. The whole upper part of the mountain disappeared in a burst of flame and smoke. Great stones began to fall about them, and deluge of fiery lava came pouring down the sides of the peak.

The boys put down their instruments and ran for their lives.

They reached the gorge leading to the sea, and plunged headlong down it. Half the distance had been covered without mishap when Dick, looking behind, gave a cry of horror:

"Run higher up, Harry! Keep out of the middle!"

At the head of the ravine appeared a crest of glowing lava, which hung for a moment on the verge, and then darted down toward them. The boys leaped up to the higher ground above the middle of the gorge, still keeping on in their rapid course. And it was well that they did so! In fifteen seconds a lava stream six feet deep was flowing down the channel where they had been running!

It overtook and passed them, and swinging a little to the right to follow the deepest part of the ravine, plunged, hissing and steaming, into the sea about a hundred feet from the landing-place. At it passed the base of the cliffs, it had swerved abruptly toward their foot, almost touching it, and cutting off the boys' retreat to the water.

For an instant they stood in horror, looking at the crawling stream of boiling lava. Then the danger of their situation roused them to action.

"Quick, Harry!" cried Dick. "Run for your life! It's only six feet broad below there! We must jump it!"

They dashed on over the boulders to a point farther down, where the current of lava was narrow. Dick, without pausing a moment, gave a quick leap that landed him on the other side. As he passed over the stream, the intense heat seemed to scorch his clothing.

Having heard a cry just as he jumped, Dick looked about for Harry. On the other side of the fiery current he saw his friend struggling to rise from the ground, and falling back. Harry had twisted his ankle on a slippery stone, and could not stand upon his feet.

Just for an instant Dick hesitated, uncertain what to do. Then he ran back a short way to get a start, and another leap carried him back over the lava. A faint cheer from the brig came to his ears, showing that his action was appreciated. He put his arm about Harry, and half-carried, half-dragged him back toward the foot of the cliff.

With a sudden swelling, the width of the current increased a foot on each side.

"O Dick," groaned Harry, "don't trouble with me! Save yourself. You can jump it yet. Quick!" he added. It's growing broader every minute!"

It is no shame to the memory of Richard Scoresby to say that for a moment the wild desire for life, the instinct of self-preservation, came upon him strongly. To remain where he was seemed but to invite a speedy and terrible death. He could not save his companion. At best he could only die helplessly with him.

He looked at the red stream. It had broadened to twelve feet, but it was not yet too late.

"Jump, Dick!" moaned Harry. "You can't help me any more. Go, and God bless you! Quick, before it's too late!"

"No, Harry," Dick said. "Here I stay with you. Whatever comes to us we'll meet together."

The next minute took away the last possibility of escape across the flood. With a sudden surge the stream broadened to twenty feet, red, fierce and impassable.

Just behind them was a mound of debris several feet high, which had fallen from the overhanging cliff at this spot, leaving a space between it and the foot of the rocks, and thus affording some protection against the heat of the stream in front. Dick drew Harry behind this natural rampart, and they were able to breathe more freely, for the current of cool air drew in from the sea along the base of the wall. Here they awaited what might come.

Meanwhile Captain Lambe, when the eruption began, gave orders to weigh anchor on the Eudocia and get the vessel under way, saying to his first lieutenant, "If one of those stones falls aboard it may send us to the bottom or explode the magazine. We must get out of range until the eruption is over."

Just then the boys appeared at the head of the ravine, and a boat was manned at once to go to their rescue. But it had barely left the side of the brig when the boys were encompassed, as I have just related, and orders were given reluctantly for the recall of the boat. Every minute of delay in the harbor was endangering the lives of all on board.

All sail was set, two boats' crews took a line ahead, and the Eudocia moved out of the basin into the open sea.

As long as the daylight lasted the officers earnestly watched with their glasses the two figures at the base of the cliff, beyond the stream of lava. After twilight came and all through the night rockets were sent up to encourage them and show them that the vessel was lying by to take them off at the first opportunity.

That night was never forgotten by the two young officers. Through its long hours they lay gasping at the foot of the cliff, saved from the falling stones by the overhanging wall above and shielded from the infernal stream in front by their rampart of rocks.

The heat of the eruption caused a strong wind to blow from the water, and this undoubtedly saved the boys' lives, for it swept away the sulphurous smoke and gases, and gave them occasional opportunities to breathe the fresh air.

The possibility of escape hardly entered the boys' heads. At first there was the dread lest the stream of lava might rise to fill the ravine; but as the hours went by and its flow did not materially increase, their fear was replaced by a dull endurance of whatever might be in store for them.

There was little sleep that night on board the Eudocia. The two boys were favorites, both with the officers and the crew. All hoped for the best, but feared the worst. As the brig lay rolling in the heavy antarctic swell, now and then a strong gust would blow aside the clouds that hid the land, and they could see the black peak spouting its fiery fountain, and the lava streams winding down to the sea like dull red serpents, and entering it with a hissing that could be heard for miles.

The short polar night soon passed, and as morning came every eye on the vessel was turned toward the shore to detect, if possible, some signs of life. The force of the eruption, however, was still unspent, and it was not safe to approach very near the coast. The brig was compelled to pass that day cruising to and fro in anxious doubt.

Another night came, and with it a strong wind from the north, which drove the smoke back upon the land, and once more revealed the outline of the coast. When the second morning dawned the aspect of the shore was changed.

The long white wall was seamed and guttered with deep ravines, and black streams of lava and rugged slopes of rock showed here and there. The little harbor in which they had lain was gone. Scattered along the broken coast line rose columns of hissing, roaring steam, but the force of the volcano was spent. No stones were falling and the flow of lava had almost ceased.

Hardly daring to hope that his middies were alive, Captain Lambe drew in again toward the shore. Suddenly the lookout in the foretop gave a shout.

At the foot of an overhanging cliff Richard Scoresby rose from the ground wildly waving a short jacket. Beside him was seen Harry Furness, striving to rise to his feet. A cheer went up from the brig, for it was apparent that both boys were safe. They had spent two nights and a day in their shelter, and come out of the fiery ordeal unharmed.

How to rescue them was the next question, for the lava stream was still impassable. Finally a landing was made farther along the coast and a rescuing party with ropes succeeded in gaining the summit of the cliffs above the boys' position and hoisted them safely up.—Youth's Companion.

First Typesetting Machine.

In answer to the query, How old are typesetting machines? the London Chronicle prints an extract from a copy of the local Herald, of 1823: "Dr. Church is now at Birmingham preparing his new printing machine. The compositor has only to sit down at the curious mechanism as he would sit at a pianoforte, and as he strikes the keys the types all fall from the case into their proper places with a velocity that keeps pace with the most rapid speaker. The form having been worked off, the type moves into the melting pot, from which it is returned, recast into its original state, and thence distributed into the case quite new. One of these machines placed at the bar of the House of Commons would always insure a correct report of the debate. Dr. Church, the inventor, is a native of Boston, in New England."

Governmental Wisdom.

New South Wales, the most progressive State of the Australian Commonwealth, has for years been building up its population and productive capacity by advertising its natural resources, climatic advantages and commercial opportunities throughout the world. One branch of its publicity campaign is conducted by a salaried press agent, who supplies thousands of newspapers in Europe and America with New South Wales prosperity pabulum. His Government has learned by experience the value of newspaper advertising.—Philadelphia Record.

A Rare Bird in England.

The Zoo has just received the first humming-bird which has reached the garden, and the second which has ever arrived in England alive. It was brought from Venezuela by Captain Pain, and its food is syrup mixed with extract of beef. The bird is a dark green in color, with blue cheeks.—London Chronicle.

HOW BOGUS GEMS ARE MADE

AN INDUSTRY THAT REQUIRES LARGE CAPITAL.

Skilful Methods of Turning Out Paste Diamonds--How They Are Cut and Polished--Cementing Two Small Stones Into One--Manufacture of Imitation Pearls.

THE passion for precious stones which has reigned in the minds of men and women almost from time immemorial has, of course, given rise to much counterfeiting of the more valuable stones, says the London Tit-Bits.

All are more or less familiar with the cheap glass imitations where the worthlessness of the article is so apparent that there is no suggestion of fraud. Few, however, realize to what an extent skilled fraud exists in this trade, more especially on the Continent, where much of the diamond cutting is done. The manufacture of imitation gems of specially prepared glass is quite an important industry.

It is now possible to produce in paste an imitation of almost every precious stone which is capable of deceiving the eyes of all but the most expert. Not only is there a superficial resemblance but a skilfully prepared "paste" stone exhibits the same lustre and high index of refraction and dispersion as would a diamond of the first water. The purity of the materials employed is such that an equal degree of clearness and transparency is given to the imitation as is found in the genuine stone. Color is imitated also, so that a ruby, emerald, sapphire or other gem made of glass is practically indistinguishable from the real jewel which may have cost hundreds of pounds.

The material of which these imitation stones are made is known as "strass." This is made according to different recipes, but usually includes red lead, rock crystal, potassium carbonate, borax and white arsenic. The greater the amount of lead used in the production of the "paste" the greater will be the brilliancy and play of prismatic colors in the finished stone, and at the same time the highest will be its specific gravity. On the other hand, the stone loses in hardness what it gains in brilliance. An old-time, but still serviceable, rough and ready test for a stone is to see whether it will scratch or cut window glass, which is, as a rule, harder than most imitation stones.

It must not be imagined that these close imitations of the real diamond or other stone can be produced cheaply. This is far from the case. A large capital is required in the manufacture, and the high degree of purity necessary in all the materials employed necessitates an amount of care, and incidentally waste, which is exceedingly expensive. Moreover, the imitation gems have to be cut and finished in precisely the same manner as the real stones, and this is perhaps the most expensive part of the procedure.

Another method of deceiving the unwary purchaser of precious stones is to palm off on him genuine stones which have been "faked" in some way to make them appear more valuable than they really are. A device commonly practiced is that of cementing two stones so that they appear to be one large one. At first sight there does not seem to be any object in such a proceeding, but diamonds increase very much in value if they are large. For instance, while £10 would be a very fair price for a diamond weighing one carat, £150 might be paid for a five-carat stone of the same water.

Eastern jewelers are particularly skilful in this direction. An Indian dealer will think nothing of selling for a large sum a beautiful stone, which on examination by an expert proves to be, perhaps, only a skilfully prepared piece of bottle glass. It is not, of course, claimed that there is necessarily anything fraudulent in the skilful preparation of imitation stones to resemble more valuable gems. Many of the most reputable jewelers deal in these stones, charging a price for which no one would expect to procure the genuine article. So long as the customer is taken into the jeweler's confidence there is nothing to object to in the bargain.

A yellowish red stone called hyacinth, and also the blue sapphire, lose their color on being heated, and may then be set as diamonds. Similarly, various stones may be colored in such a manner as to make them resemble others of a higher value.

A favorite method of preparing precious stones so as to make them appear more valuable than they really are is by means of the "doublet." This may be done at the request of a customer who wishes to make a finer show than he or she would otherwise be able to do, or it may be practiced by an unscrupulous dealer to deceive the unwary. It is said that a great deal of this work is done on the Continent. A doublet consists of an upper part, which is genuine, secured to a lower part of some less valuable stone or of glass. The two parts are cemented together and ground so as to leave no trace of the union. The fire of the genuine portion of the stone is seen through the imitation, which is itself made of some paste with a high degree of brilliancy. If the doublet is secured by cement the two portions will fall apart on immersion in hot water. When the base is composed of glass, however, it is usually fused to the upper and genuine half, so that the fraud is very difficult to detect.

Another way to prepare a doublet is to make the upper portion of rock crystal, or some similar transparent material with a high degree of hardness, and the lower portion of tinted glass, which seems to impart its color to the whole. This fraud may be readily detected by holding the stone to the light; but as it is usually employed in making up jewelry with closed settings the purchaser has no opportunity of making this test.

Finally, colored stones are imitated in a particularly ingenious way by means of rock crystal ground to resemble the usual appearance of the particular stone to be imitated, but with a hollow cavity inside, which is filled with colored water. The cavity is then closed by means of a plate of rock crystal skilfully fitted in, and there appears, perhaps, an exquisite ruby, sapphire, emerald or amethyst very difficult to distinguish from the genuine stone.

Every one is familiar with the pretty strings of imitation pearls which can now be purchased everywhere. These are usually made of opaline glass treated carefully with hydrofluoric acid, and it would not occur to any one to attempt to pass them off as anything else. Very good imitations of the genuine pearl are made from mother-of-pearl also. This material is turned to the required shape and polished beautifully, when it has an appearance very similar to that of the genuine article, though an expert can readily distinguish the imitation pearl from the real one.

Ever since the seventeenth century beautiful beads closely resembling the finest Indian pearls have been manufactured. Glass beads of the required pattern are first made. They are then coated inside with a material made from fish scales and having the lustre of the genuine pearl. The beads are then filled up with wax. These beautiful imitation pearls are by no means cheap, however. This is not surprising, when we learn that it takes 20,000 fishes to yield one pound of the silvery white material which is used to produce the necessary pearl-like lustre.

WARTS

What This Ordinarily Trivial Annoyance Really Is.

An ordinary wart is a local overgrowth or hypertrophy of the papillary layer of the skin. It may be covered on the top with the epithelial layer, which gives it a smooth surface; or the epithelium may fall away and leave the separate strings showing at the point of the wart, like so many brown or black seeds—whence the name of seed wart.

Warts of this kind occur most commonly on the hands of children. They are caused usually by the irritation of the many sorts of dirt into which the youngsters' hands are so constantly plunged. It seems probable that warts are slightly contagious, and that they may be spread through a schoolful of children by direct contact.

Sometimes warts are quite broad and flat, of a smooth surface and yellowish in color. Such occur frequently about the face and occasionally also on the hands.

Another form of flat wart may come on the back in the aged. It is broad, irregular in outline, with uneven "seedy" surface, and sometimes covered with greasy scales.

Warts vary a good deal in color. Some are indistinguishable in color from the surrounding skin, while others are pinkish, yellowish, brown, or even quite black. The dark color may be due to the deposit of pigment in the body of the wart; but it is more often, especially in children, simply dirt which has been worked down between the "seeds." Soaking them in warm soapsuds and scrubbing with the nail-brush will usually restore the natural pinkish color. Some warts are, however, deeply pigmented, constituting true moles. These are more common on the skin of the chest, abdomen and back.

A wart is usually a trivial thing, but its removal is nevertheless advisable. Its prominence above the surface exposes it constantly to slight injuries which may keep it in a painful condition; it is never an ornament, and may be most unsightly; and finally, in persons getting along in years, it may take on new growth and develop into a tumor.

In children warts come and go without apparent reason, and treatment is often unnecessary; but if they persist for a long time, or when they come on the adult skin, it is better to get rid of them. Sometimes soaking in warm sea-water for ten minutes two or three times a day will cause the warts to disappear. This can be tried first, and if it fails and application of salicylic acid in collodion or touching the wart with a drop of glacial acetic acid on the end of a match will suffice.—Youth's Companion.

Willing.

A bashful suburban couple sought a city minister, says the Boston Herald, and asked his aid in getting married.

"Very well," said the clergyman. "Will you be married with a ring?"

"Why, yes," said the groom, hesitatingly, "ye-es—if—if you have one handy I guess we will."

In most of the Japanese cities there are young women who earn a living as professional entertainers.

SHARK FISHING

A "Sport" That Is Both Dangerous and Exhilarating.

With a splash sufficiently vigorous to scare a sleeping whale, over goes the hook—half a hundredweight of ironware, fastened by a steel chain to a rope cable, capable of standing a tested strain of five tons. One does not fish for the tiger of the seas with silk lines and drawn-gut casts. The hook is baited with a four-pound lump of fat, bilious-looking salt pork; or, better still, with a piece of porpoise blubber to which a small square of tough hide is still attached—a bait which no shark that ever swam could resist.

Our quarry is, not unnaturally, somewhat frightened by the splash—made purposely, by the way, with the idea of attracting his attention—with which this delicate lure is thrown to him, and sheers off doubtfully. His hesitation, however, does not last long. He remembers the delightful flavor of the delicacy he has already had, and comes up with a rush to enjoy the second course.

There is a slight oily swirl, a flash of white from his belly as he turns over, two double rows of sharp, murderous-looking teeth come together with a snap, and bait, hook and a foot or two of the rusty chain are swallowed without a gulp. Then, as the point of the hood bites into the cartilaginous framework of his head, he becomes alarmed, and tries to break away. No use; that five-ton cable will hold him. Hand-over-fist he is hauled in to the side; a running noose is dropped down the line and around his body, and a dozen eager anglers haul him unceremoniously up on deck. And then the cream of the fun begins.

He looks bigger now than he did when he was in the water. His lashing tail and viciously snapping jaws are not to be approached without due caution. A slip might mean the loss of an arm, bitten off clean by one of those convulsive snaps. He squirms about, mixing up into a general hotch-potch everything moveable which comes within his reach; and it is not until his power of attack has been most strictly limited by the tangle of ropes of all kinds which have been jerked and twisted around him by the more daring of his captors, that the majority care to come within reach of his jaws or tail.

A plank is now slipped cautiously under his tail, and, with one short, crisp chop of the cook's big chopper, it is severed from the rest of him at the thinnest part, and carried off to be nailed to the jibboom "for luck." Deprived of his tail, the shark is considered to be practically harmless; and now it is that Jack whips out his sheath-knife, and becomes for the time a cruel, vindictive fiend. Every sailor considers that he has a grudge to pay off against that quivering, defenceless mass of fish, and there and then he proceeds to pay it, revelling in the torments he inflicts, and warmly applauding any device of torture which strikes him as being peculiarly fiendish.—Pearson's Magazine.

The Interview That Failed.

Following the somewhat indistinct directions of a small and impertinent errand boy, we sought out the Great Man's chambers, and knocked at the Great Man's door. Receiving no answer or assistance from within, we admitted ourselves, and beheld the Great Man seated at his desk, with his back towards us. For a while we stood unobserved, till at last, by coughing for a third time with offensive noisiness, we attracted his attention.

Without turning around, he addressed us in the following gracious and outspoken manner . . . . "I have paid my Income Tax, I cannot give you bread, money or hospital tickets, nor do I stand in need of anybody's backache pills. You need not, therefore, stay."

"Excuse us," we replied, "we are not tax collectors, beggars or touts."

"In any case," he said, "you will find the door behind you."

Encouraged by this genial welcome, we proceeded to the object of our visit, and arranging in our minds a series of questions as to the Great Man's past, present and probable future, his own, his wife's, his children's, and his servants' domestic pets, we opened with the usual question: "You are, we believe, the renowned Mr. Ettseterer?"

"I am," he replied, "not."

Feeling that further interrogation was as unnecessary as it would be impolite, we wished our host a cordial "Good-night," and, whistling merrily, took our leave.—Punch.

Castro Very Short of Money.

I am informed by diplomatists who keep in touch with Venezuelan affairs that President Castro is very short of money, owing to a serious dimunition in the customs, due no doubt, to his provocative policy abroad. All public works have been stopped, and Government contracts are being annulled. As for the French Cable Company dispute, President Castro has tried to induce an English firm to provide a telegraphic service with the United States by laying a cable via Trinidad. But Trinidad refused permission, and the English firm declined the proposal. In the meantime the quarrel with France is as far from settlement as ever, but there is no truth in the rumors industriously invented that the French Government is about to use force. I learn unofficially, but on very good evidence, that the difficulty is likely to be settled in quite another way. If France will only wait patiently and give President Castro a little more rope, he will hang himself. There is little doubt that a revolution is in prospect, which would probably end his perverse career.—London Standard.

In Paris the average price of pure milk is 33.8 cents a gallon.

GOOD ROADS.

Merely Common Sense.

Charles Sumner once said: "The road and the schoolmaster are the two most important agents in advancing civilization." Common sense teaches that the difference between good and bad roads is equivalent to the difference between profit and loss. It teaches that good roads have a money value to the whole people as well as a political and social value, and leaving out convenience, comfort, social and refined influences which good roads always enhance, and looking at them only from the "almighty dollar" side, they are found to pay handsome dividends each year. People generally have come to realize that road building is a public matter; common sense declares it to be a function of government.

Sand-Clay Roads.

Almost every community is favored with an abundance of stone, gravel, sand or clay, and by the proper management a desirable road can be constructed with either one of these. As there is a wide difference in the character of the materials great care should always be exercised in selecting only the best—such as contains sufficient toughness and cementing qualities as will form a surface sufficiently hard and durable to endure the volume of traffic, and at the same time make the road less impervious to water, which is its worst enemy.

In successful road building too much attention cannot be given to the proper drainage, surfacing and rolling; and in doing this work the use of the latest improved machinery is very necessary in the construction of any kind of a road if the best results are to be obtained. Anything that is worth doing is worth doing well, is an adage that might aptly be applied in connection with this question. This rule is not always adopted, however, but it is far better to build permanent highways so that they will need little or no repairs for a long time to come. In some localities conditions are such that a good stone road may be built at a cost ranging from $2000 to $3000 per mile, but in others $5000 or $10,000 are expended; while good sand-clay roads can be built from $200 to $500 per mile.

There are many phases of the question of road improvement of which much might be said, but at present the writer wishes to direct attention more particularly to the improvement of the common roads by the sand-clay method, which is quite inexpensive. When sand abounds in such quantity as to render travel on the roads difficult, an application of clay may be made to good advantage, and where clay is equally objectionable sand may be similarly applied and with equally as beneficial results.—Progressive Farmer.

Government Aid to Public Roads.

Following is a resolution introduced by Maj. W. A. Graham, of North Carolina, and adopted by the Farmers' National Congress, recently in session at Richmond:

"Whereas, the National Government wisely makes appropriations for the improvement of our harbors, rivers and lines of railroad transportation, to promote the commerce of the nation by affording markets for selling the products of the people and for purchasing the needed goods of other nations; the same wise policy could be promoted and extended by appropriations to establish and improve the public roads in the respective States in order that the farmer may be enabled at least cost to place his productions at the places of distribution. If the domestic and foreign commerce is advanced by appropriating to harbors, rivers and extended or 'through' lines of domestic transportation, it will be benefited in an increased manner by appropriations to the public roads or highways, so as to enable the producer to reach the markets of his section at reasonable cost. There can be no valid reason why benefits that are extended to the buyer and seller should be denied the farmer; therefore be it

"Resolved 1. That his Excellency, the President of the United States, is most respectfully petitioned to recommend to Congress in his message some system of appropriations to improve the public roads in the States.

"2. That Congress is earnestly petitioned and urged to enact a law, or laws, making adequate provision for the betterment of the public roads by sufficient appropriations to the purpose.

"3. That a copy of this paper be sent by the President of this Congress to His Excellency, the President of the United States, and also the presiding officer of each House of Congress, with request to present them for consideration to the body over which he presides."

Portable Wireless Telegraphy.

Portable wireless telegraph stations are now manufactured in Germany of such light weight that carts or wagons are no longer needed for their transportation, the parts being carried by men. While, with stations moved by wagons, the air conductors are attached to balloons or kites, with portable stations they are attached to steel masts. These masts, three in number, can be pushed together like a telescope and are then about twelve and one-half feet long, but can easily be pulled out to a length of thirty-three feet. The electric energy required is furnished by so-called "tread dynamos," mounted upon a sort of stationary bicycle with a light seat for the man, who keeps the machinery going with his feet. The electric energy can also be supplied with a portable storage battery.