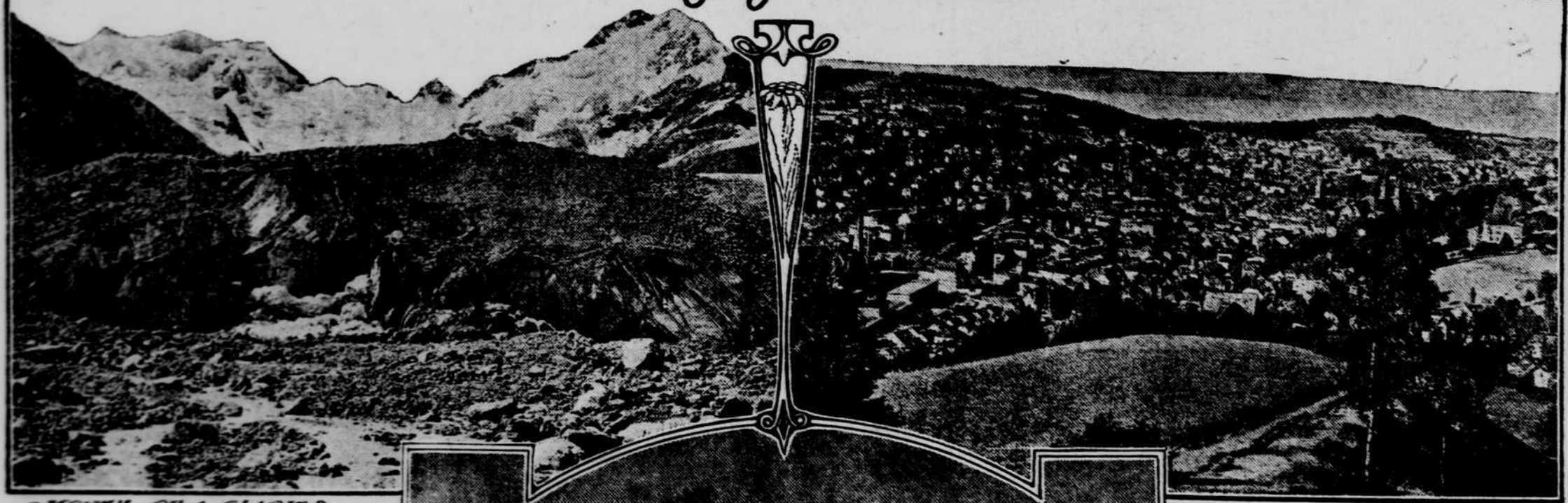


# HARNESSING GLACIER STREAMS

## How Switzerland Capitalizes Its Barrenness

By Gregory Underhill



YOUTH OF A GLACIER

WHO has not known Switzerland the past five years knows not the Switzerland of today. The cascades, the torrents, and rivers run there still, but they are controlled and utilized. The mountains rear their lofty heads, but not as of old. They are conquered and harnessed.

The early summer of 1911 indicated that the heat was to be unusual in Italy, and that we must leave our villa on the heights near S. Miniato for some cool retreat, and Switzerland was decided upon. Our approach thither was by Lago di Como, planning to remain a few days at Tramezzo, where the summer preceding we had enjoyed for nearly two weeks, the companionship of several American friends.

From Tramezzo we took steamer for Menaggio, crossed by the railroad to Porlezza on Lake Lugano, over which we sailed, past Lugano to Capo di Lago and by the "rack and pinion" railroad to Monte Generoso, conceded to offer the widest, most varied, and beautiful expanse of mountain scenery in Switzerland, its only rival the Gerner Grat.

In our approach down the Lake of Lucerne by the historic point where Tell jumped ashore, past the Rigi, and the many summits that rise from the shores of that historic lake, we began to observe the wonderful results of Swiss energy and ability. The rack and pinion railroad takes one to the summit of Pilatus, about 6,000 feet altitude, where the night will be passed in a large comfortable hotel, and returns you to Lucerne next morning for the moderate charge of twenty-five francs, covering all charges for the excursion. The rack and pinion also ascends the Rigi some 5,000 feet, on whose summits are several good hotels. The general impression made by such ascent was well voiced, I think, by an American girl, whom I overheard saying: "I was really disappointed with the Rigi, but I am glad I went up, for I should always have thought I had missed much if I had not gone." The funicular railroad takes one to Burgstock, Stanserhorn, and also Sonnenberg and Gutsch.

As, even in this age of travel, not every one goes to Switzerland, or has observed the difference in principle of construction between the rack and pinion and the funicular, I may say here that the former has a middle rail on the roadbed, set with teeth deep and broad, and the motor car usually has four cylinders with similar teeth, each cylinder so successively revolving as to reciprocally insert its teeth between the teeth of the middle rail, and so force the car up. It usually descends by gravity, controlled by brakes, in either case moving at very slow pace, rarely six miles an hour. It is obviously much safer than the funicular, having so much more holding surface, and nowhere depending upon a single support. The funicular is run by a single cable on the principle of the elevator. It has the advantage of being usable on much steeper grades than the rack and pinion can be run on, even at an angle over 60 per cent, while the rack and pinion seldom exceeds 25 per cent, and usually runs at about 20 per cent. Both systems are armed with very efficient brakes, but in case of mishap I should prefer to be on the "rack and pinion."

The ascent of the Wetterhorn is made by a car suspended from a cable dangling in mid-air. The ride across the S. Gotthard from Lugano to Lucerne had been interesting. We were now to attempt an even wilder pass, the Brunig, on our way to Interlaken, mainly taken over by the "rack and pinion." The development in the rural region is remarkable, and particularly in recent years. The view of the Jungfrau from the park at Interlaken was not nearly as attractive as it was last year, when in the very cool summer it was completely covered with glistening snow and ice. The courage and shrewdness of the Swiss is shown in reaching out from the old established centers to new fields, selected because of their favorable exposures; sometimes approached by the funicular, or rack and pinion, sometimes only over a donkey path, and even for miles on foot. Saas-Fee, for example, at 6,000 feet altitude is so approached from the Vesp to Zermatt.

We met a gray-haired rector of the Church of England and his grown daughters, who were all to walk for five hours, mostly up grade, from the station to Saas-Fee. The English are particularly fond of such picturesque quiet mountain resorts. But I must return to our ride to the Jungfrau. The last six miles and over were through a tunnel cut in the solid rock, and the present terminus is in the solid rock, hundreds of feet below the surface. The only light, air, and outlook are through wide apertures cut through the solid rock of the mountainside. Standing in the



VILLAGE OF ST. MORITZ

large open restaurant, salotto, and entrance room containing even post office facilities (except for the open spaces in the mountain side) you are completely entombed in solid rock beneath great bodies of snow and ice in the very heart of the Swiss mountains.

It is the loftiest tunnel in Europe, probably in the world, measuring ten feet wide and fourteen feet three inches in height, cut through limestone so hard and tenacious that a lining of masonry is unnecessary. The gradient is one in four, the track is three feet four inches wide; on the last stretch starts from Kleine Scheidegg, on which only a score of years ago not a single house stood. Now several large buildings have been erected, hotels, shops, sheds, etc., and they are the center of great animation; the cries of railway and hotel porters, and the ringing of bells, mingled with the conversations carried on in every known tongue by tourists, are heard on every hand. Over 3,000 persons are carried to the Kleine Scheidegg in a single day. The Jungfrau railway is worked by electricity, and its engines are the finest mountain engines in the world.

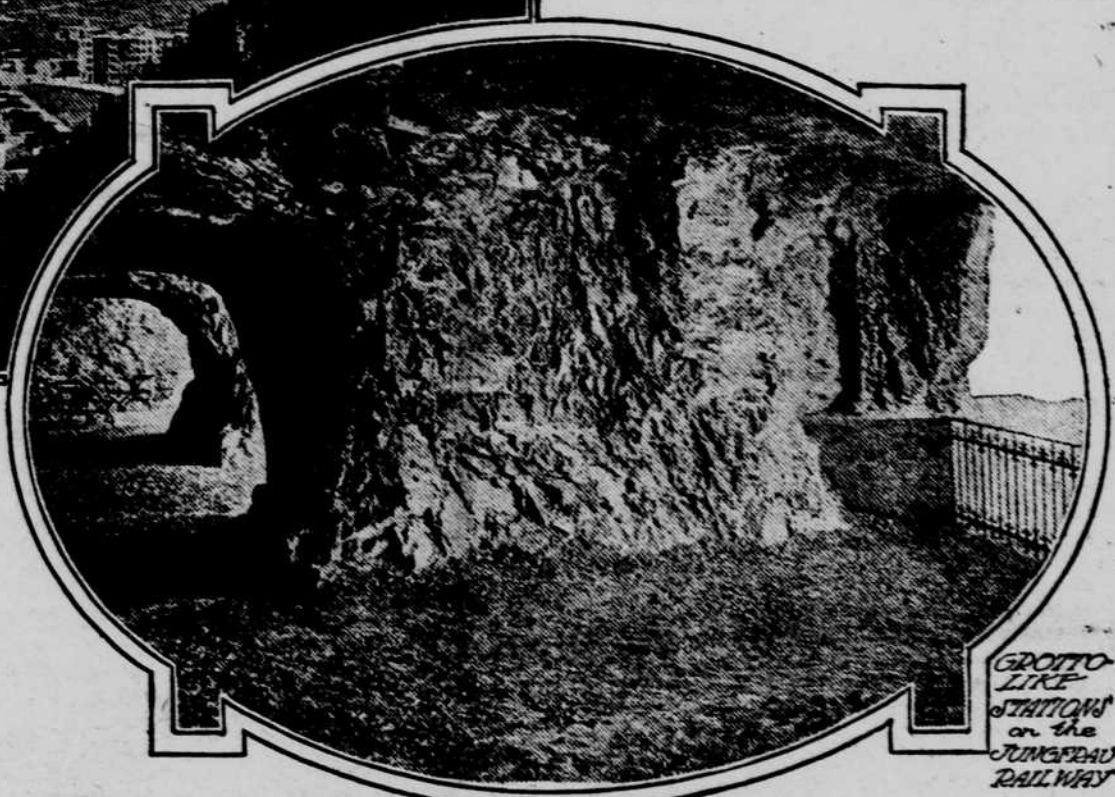
The Weggen alps and the Jungfrau railway is not worked after October. Because of the heavy snowfalls, water is difficult to procure. From November to May, fresh water is entirely lacking, every drop required for drinking, washing, etc., and for the drills, is obtained from snow, melted by electricity. Fourteen quarts of snow make one quart of water. Incredible quantities of snow fall here, the entire lower story of the houses is buried in snow, and a thick wall of it rises in front of the windows. The worst foe of the colonists is the south wind, or "Föhn." Under its impact the buildings tremble to their very base. In the open air it is impossible to make head against the "Föhn," the only thing to do is to lie down flat on the ground and to hold on to whatever one can grasp, taking advantage of the hills to advance a few yards.

The first station after entering the great tunnel is Elgerwand, excavated in the rock. Nowhere except on the Jungfrau railway is there a station blasted out of the interior of a mountain and yet commanding a magnificent view. In the evening an electric searchlight of 94,000,000 candle-power throws its beams far and wide. It is said that by its light a newspaper can be read in the streets of Thun, sixty miles distant. At last we reach Eismeer, the present terminus, 10,370 feet above sea level. The station is a marvel of constructive ingenuity. A large hall, excavated, pierced with several openings on the south side, twenty feet wide, forms a comfortable room which

can be heated, with parquet floor and glass windows. On one side are the apartments of the stationmaster, with a post office, the loftiest in Europe; on the other, the kitchen of the restaurant and the larders. No wood or coal is used. Electricity does the cooking and heating. Soon the railway will be carried to a point near the summit, where an elevator, a genuine perpendicular lift, will take the tourist 240 feet to the very summit of the Jungfrau (13,428 feet).

A two days' drive over the Grimsel Pass took us through tunnels, under overhanging arches, by leaping cascades, roaring brooks and rivers, and endless chains of pines and firs, broken occasionally by a small holding of cleared land. A level bit of land is always cultivated, and chalets are raised here and there, the goats crossing our track, the cows, with their bells keeping time with the footfalls of our horses, and always in ever-shifting lines the everlasting hills, rising higher and higher. Who knows how they came there?

All along I have been impressed with the sagacity and energy with which the Swiss exploit their rugged country, whose chief assets are mountains and glaciers, ordinarily the most profitless. And, yet, in doing so, they kill the romance of mountaineering. The imagination that kindles the courage that dares, the glory of being one of the elect few to achieve such ascents, the fine ecstasy of conquest, the exhilaration of the hardly won far-distant reaches, all are to disappear before mechanism and finance. In about two years any stout old gentleman and delicate, gray-haired (never old) lady on the summit of the Jungfrau at 13,670 feet altitude, can look sympathizingly down upon the tollers below. Mont Blanc, the highest summit of the entire range, is being rapidly harnessed clear to its summit, with its equipment of rack and pin-



GRIMMEL PASS on the JUNGFRAU RAILWAY

ion. Even the Matterhorn is partially equipped with fixed ropes, and some attempts at paths have been made. On can reach the summit of the Rigi and return in a few hours, or remain in a comfortable hotel.

I have alluded to the exploiting of the mountains. The glaciers are being similarly utilized. All the mountain railways are run by electricity, so are the cars in passing through the Simplon Tunnel. Soon the S. Gotthard line will be electrified, and in turn the other railroads will follow. The only hindrance is the delay and first cost in substituting electric motors for steam. As I drove by the fierce rushing torrents, mainly fed by snow and glaciers and apparently unending, I estimated that at no distant day Switzerland would supply electricity profitably not only for its own requirements, but also for nearly all Germany. In time those snows and glaciers are to pay the entire expenses of the republic, averting the necessity of taxation. A gold mine will give out; those mountain summits and glaciers will not.

The Italians were shrewd and able in utilizing, capitalizing the forestier, but the Swiss are far in the lead, the most highly organized, scientific absorbers (another word nearly escaped me), I think, on the face of the earth. When I found myself taxed for the band I protested. I had not asked for any band, or agreed to pay for one; I would pay something if they would not play. Of course, it ended in my paying. A Kuraal tax is levied on tourists, through the landlords. A friend of mine protested that her mother, past eighty,

never entered it. The official replied there is no requiring such payments, but your landlord will have to pay if you do not; she paid it.

The railroads are practically all owned by the government, and the rates are high; the mountain rates, very high. Of course, as they are expensive, and the season is short, they should charge accordingly; but I have paid 50 cents a mile for each of my family. All trunks are weighed and charged for at high rates. On the mountain railroads even the hand-pieces are so charged. Not every one, these tunnel-days, has crossed the Passes, and noted the admirable road-engineering in which the Swiss, as well as the Italians, are past masters. And they protect their roads; automobiles being allowed only on certain roads and passes, and at certain hours. We might well take lessons from them. Automobiles, like the railroad cars, should have their special roads, and be restricted to them.

In the season Switzerland is a mob. The extreme tunnel road to Eismeer, only six miles long, is carrying three thousand passengers a day, running trams in three sections, at fourteen cents a mile. The income is easily reckoned. I should advise all Americans to time their visit to Switzerland for June or September, unless they are fond of "winter sports" and are strong enough to bear them.

Every winter sees a decided increase of visitors who come to slide down hill, skate, and revel in the snow and ice. Toboggan slides of three to four miles, run with proper safeguards, are arranged; the return ascent is made by railroad or other similar contrivance. Artificial ice ponds, if natural ones are not near, are cleared of snow for the skater.

Switzerland is to be as much of a winter resort as a summer one—perhaps more. In short, the canny Swiss are likely to coin money out of snow and ice.

# The Little Professor

By DOROTHY DOUGLAS

(Copyright, 1912, by Associated Literary Press.)

The little professor's eyes scanned the row of girls whose right hands beat time to the movement of his baton while they sang an exercise in solfeggio.

"Miss Vance, you are out singing," he said without stopping the rhythm.

Nadine Vance looked at him and a dull red crept up even to the line of her softly waving hair; her eyes were brooding and somber. She made an effort to sing, but no sound issued from the lips that were trembling.

When the exercise was finished the little professor still kept his eyes on the girl.

"Why do you not sing?" he asked in his kindly manner.

Nadine's heavy eyes were again raised to his and the hunted look of a deer at bay sent an expression of gratuity into the professor's face.

"I cannot sing today," Nadine said in a hard, jerky voice. "It doesn't matter, anyway—I am giving up the class this week."

A swiftly hidden emotion swept across the professor's eyes; then he went on with the rhythmical movement exercise.

But the large class of girls, who one and all adored the little professor, felt strangely antagonistic toward Nadine Vance. In some way she had turned harmony into discord. It was with a certain sense of relief that the hour ended and the little professor dismissed his class with a kindly, paternal smile for each girl as she left the studio.

Nadine Vance would have slipped out, too, but she found her escape blocked by his detaining hand.

"Miss Vance," the professor's voice and eyes were serious, even grave, "I want to talk to you. Can you come here at about 4 o'clock this afternoon?"

"No," Nadine put in swiftly. The girl's usually sweet, caressing voice was hard and strained. The professor's searching eyes did not leave her



"I Want to Talk to You This Afternoon at 4."

face. "It will do no good to talk," she continued jerkily, "I have determined to give up this branch of music."

The professor's voice took on a compelling note.

"I want to talk to you this afternoon at 4," he took her hand as he often did when parting from his pupils. "You will come?"

The color came fitfully into Nadine's cheeks, then it left her with a suddenly tense whiteness.

"Yes, I will come. But you are compelling me to do something for which I know you will be sorry." She turned and was gone.

The professor went slowly and thoughtfully back to the piano.

"She is unstrung—some law affair." He commended with himself over the keys. "What strange vagaries the feminine temperament indulges in!" The professor's fingers were playing the rhapsody of his own mind and he was not quite conscious that the inner man was seeking to forget the hours between the present and the hour of 4.

Nadine dressed with unusual taste. She had sufficient of the feminine weakness struggling with temperament to realize the value of becoming clothes. Her costume was ravishing.

"He will probably not even notice whether I have on heliotrope or burnt orange." A wistful little smile played

about her lips. But in truth she knew that nothing escaped the professor's keen eyes, not even the gradually increasing turmoil in her own heart. "And now he is going to drag my secret away from me—I know he is." A blush tingled over Nadine's entire being and she dropped her lids over the shamed eyes reflected in the mirror.

When she entered the studio at 4 o'clock she still felt an utter lack of control over herself.

"Now, Miss Vance," the hint of an eternal smile in his eyes, and which was a part of the professor, mingled oddly with the gravity of his voice "you and I are going to have a good talk." He seated her on the wide chair, and dropped into his big arm chair. He looked steadily into her great brooding eyes for a moment and said tenderly, "My nightingale's eyes are shadowed, her song is silenced and"—the little professor put in his usual portion of the lighter vein—"her features are extraordinarily beautiful."

A fleeting smile spent itself quickly in Nadine's eyes. Then she looked at him in mute appeal, but she remained silent.

"Come, tell your old teacher all about it. You are fighting something out in your own heart little girl—and it doesn't pay. Something is bound to give way."

As the words "give way" left his lips Nadine felt the click of a key open the door of her heart. She cast a quick glance at the professor and slipped over and onto the wide arm of his chair.

And because the little professor was a strong man and of well-controlled emotions he in no way showed surprise, but only looked at her with his paternal smile in his eyes. He could feel the vibrations from her slender body and wondered at the pent-up struggle within her. He was not prepared for the dry huskiness which spoke of deep feeling when after a moment she found voice.

"Call me childish, unstrung—anything you like." She buried her head in her arms on the back of his chair and drew a few spasmodic breaths. "But I'm not. I have struggled and fought against this thing called love. But it is obsession, tyranny—a domineering master. And I am utterly weary trying to escape it."

Nadine glanced shyly up. Her eyes were no longer brooding, but luminous and wonderful. The little professor felt a subtle warmth stealing over him. Unconsciously he drew in a deeper breath of her fragrance. He wondered, a trifle apprehensively, just what the faint stirring within the depths of his being might portend.

Nadine's voice continued in low pitched, emotional cadence. She dropped her head again on her arms and spoke almost to herself. "Perhaps if I unburden my thoughts to you I may in a measure escape the bondage if not the obsession. It may be that in sharing my secret I may gain back the power of song, of laughter, and win a few moments' respite from this unutterable longing, this pent up love that is shadowing every gleam of happiness in life."

She ceased speaking, but the little professor was looking with unseeing eyes at the white hand that lay idle on her lap; he had scarcely been heeding her words, for the realization had stolen over him that something big and desperately necessary to his happiness was being dragged out of his reach.

Suddenly, and with a force undreamed of, he turned and swept Nadine off the arm of his chair and into his arms.

"Stop! Don't tell me anything more about this love of yours—I cannot stand it!" The little professor was trembling and his voice was even more husky than Nadine's own. "You have breathed your low tones into my ear and the scent of your hair in my nostrils and now your heart is pounding against my own—and when you have set my soul quivering with love for you do you think I am going to stand by and let you talk of love for some other man? You can struggle all you like, but I am going to hold you for my own!"

As suddenly as he had taken her he let go his clasp, with a contrite realization of what he had done. "Forgive me, Nadine; it all came over me so suddenly—just how dear you are to me." The little professor made a brave attempt at his kindly, paternal smile. "Can you forgive me now and leave me—perhaps?"

But with a long-drawn sigh of contentment Nadine crept back into his arms and twined her arms about him.

"Whom did you think I loved?" she asked him.

## AND THE AUDIENCE LAUGHED

Woman's Explanation of Moving Pictures More Amusing Than the Exhibit on the Stage.

It was an uptown moving picture theater in which smoking is allowed only in the boxes. The show was fairly started when a family party came in, two women of considerable weight and a man with his hair parted in the middle. Up to that time the involuntary box party had been peacefully arrived took it upon herself to explain to the two other members of the party just what the pictures were about. She and they were evidently Germans, and the heavier woman was the only one who could read English, so the task devolved upon her of reading the announcements on the screen, first in English then translating them into low German for the benefit of her companions.

"She had a great deal of difficulty with the thrilling picture drama of 'Arragh-na-pough,' for she thought

the "pough" had some relation to the word "plough" and insisted on pronouncing it "pow." With great discrimination she gave a free lecture on a series of pictures showing cowboy life in the west, a lecture that was full of beautiful errors, but in the next picture, a love story, the girl wrote a note to her sweetheart, which note was thrown on the screen thus:

"Dear Jack: We are out in the woods and father won't let me leave the camp. Do come out and help me with my scheme. Yours, Molly."

With fine unction and an evident pride in her scholarship, the heavy woman read the portentous message to her friends, all the people in the vicinity listening, but she read it:

"Dear Jack: Ve are in the woods out. Papa will not letten me go. Kommen sie heir und hel-p me mit my chame."

It was at this point that the picture evoked laughter from a portion of the audience.—New York Herald.

## People of Large Appetites

Koreans Are Ranked as the Most Voracious Eaters of Any in the Known World.

The Koreans appear to be the greatest eaters in the world. To this the Japanese, French, English, Dutch and Chinese all bear witness. All reports concerning the Korean capacity for food seem to agree. In this re-

spect there is not the least difference between the rich and the poor, the noble and the plebeian. To eat much is an honor in Korea, and the merit of a feast, it would seem, consists not so much in the quality as in the quantity of the food served. Little conversation occurs during the Korean meal, for each sentence might lose a mouthful. A Korean is always ready to eat;

he attacks whatever he meets with, and rarely cries "Enough." Even between meals he will help himself to anything edible that is offered.

The ordinary portion of a laborer is about a quart of rice, which, when cooked, makes a good bulk. This, however, is no serious hindrance to his devouring double or treble the quantity when he can get it. Eating matches are common. Who can or is slaughtered and the beef is served up, a heaping bowl of the steaming mass does

not alarm any guest. When fruits, such as peaches or small melons, are served, it is said that they are devoured without peeling. Twenty or thirty peaches are dined an ordinary allowance per person and rapidly disappear. Such prodigality in food is, however, not common, and for one feast there are many fastings. The Koreans are neither fastidious in their eating nor painstaking in their cooking. Nothing goes to waste. All is grist that comes to the mill in their mouths.

Large Trade in Charcoal. Charcoal is used to a considerable extent in Sheffield, England, one wholesale firm dealing in it estimating the aggregate amount handled at \$150,000 yearly, with a considerable quantity purchased by large firms direct from the local burners.

The Dreadful Age. Don't you dread to reach that age when you will begin to consider a holiday a day of rest?—Aitchison Globe.