

the Zambezi. These rivers once formed vast internal seas, which, finally breaking through the mountain barriers, have descended by cataracts and canyons on the ocean, leaving great areas of rich deposits of wonderful fertility.—*Forum for June.*

### LASHGARD.

There is a curious village in Persia, named Lashgard, between Semnam and Teheran. Here there has once been a citadel, built upon a lofty, circular mound to a height of perhaps eighty feet from the plain. The citadel has fallen into ruin, and the buildings in its interior are a litter of rubbish and bricks. But the villagers have established themselves in the deserted enciente, and on the very top of the outer walls have built a double story of mud-houses, which are only accessible by flights of crazy steps from the interior, and the most remarkable feature of which is a ledge or balcony built out from each story with rude logs of wood plastered over with mud.

Upon this rickety platform, which has nothing in the shape of a railing to prevent any one from falling off, and which is full of holes, the inhabitants appear to live their outdoor life. The place from a distance looks as if a gigantic colony of birds had settled there and built out their nests from the walls. It is entered by a steep stairway from the ground, the door of which is a single huge block of stone, swung on a pivot. At the villages of Del Mulla, Pedah and Araden are seen similarly abandoned, though not uninhabited, citadels on the top of great artificial clay mounds. Their ruin is a testimony to the lawless life of the past, as well as to the security of present existence.—*Ex.*

### A SENATOR'S HELPFUL WIFE.

Senator Reagan's wife, has been extensively discussed in the newspapers on account of her occupying the position of private secretary to her husband, she is reported by the *Sunday Herald* today as saying, in the course of an interview:

"My personal feeling is that it were a happy thing if our young women generally could be trained so as to have one accomplishment so thoroughly learned as to make it a dependence in case of reverses; for the wheel of fortune turns round south as well as north. I think it degrading when a young woman is so situated that she has to look to marriage as a resource or succor rather than a free choice.

"For twenty years," Mrs. Reagan continued, after a pause, "I have been acting as the Senator's private secretary. I did it simply because he did not like to confide all his purely personal correspondence to the eyes of a comparative stranger; and little by little I got to doing more, until once the idea occurred to me that I, like others, would get on faster if I learned shorthand. The Senator generally

keeps to male secretaries to attend to public business, and at one time he had a good stenographer who lent me books, and, as I had not much to do just then, I looked into them and thought it not too difficult for even me to learn.

"But, on confiding my view to a lady friend, she declared I never could do it. Well, I did, and it took me just three months of hard, painstaking work to be able to write at dictation. I never had a teacher. I dug it out myself. I have no idea of my speed, nor do I ever expect to report, but I find it very useful. The stenographer afterwards left the Senator's employ, and, as a temporary expedient, I offered my services, not for the money, but to be of use to my husband. But neither he nor I can see why, if I do the work as well as another, I should not have the pay. I have no idea how long this arrangement will last.

"The way we manage is this: Right after breakfast the Senator dictates a dozen or so letters to me; I take them down and he goes off about his business. I then write them out and mail them at once—at least, twenty-four hours earlier than they would be mailed under the old way when he dictated to me for long hand.

"It seems to me that the dear public have manifested an unnecessary amount of interest in me, as being my husband's secretary. Why, there are several ladies in Congressional circles who are doing as much for their husbands as I am doing for mine; and the only difference is that I choose to do what they might do if they wished to draw a small salary as compensation due for services rendered.

I rather like politics. If I did not, I should not enjoy this kind of thing so much. I think Southern women are all pretty well acquainted with politics. I was but twelve years old when the Senator was Postmaster-General of the Confederacy—I am his second wife—but even the little girls heard so much political talk then that we could not help imbibing the sentiments of our elders."—*New York World.*

### A WONDERFUL SNOW-PLOW.

That particular machine which has worked a revolution in the theory of snow-plow building, and which broke up the great snow blockade on the Union Pacific tracks in Oregon is the Jull centrifugal snow excavator—an invention only a year old. The first machine of this kind ever built was tried for the first time on March 6, 1889, on the Rome, Watertown & Ogdensburg railroad at Oswego. At that point the tracks of the road were covered for a distance of 750 feet with hard, frozen snow, which had lain there all winter, to the depth of from two to seven feet. The Jull machine made its initial bow to this mass, and went through it like a shot.

The Union Pacific railroad bought the machine after two other successful tests of its power had been

made and sent it to Omaha on its Kansas division. There it laid unused until the blockade on the short line last January baffled the attempts of the company's other plows, and then it was sent there to see what it could do. It arrived at Baker City—one end of the blockade—on January 18, and at once began work on the great mass of snow that blocked the tracks from that place to La Grande. Other plows had been at work on the thing, but had failed to do any good. The Jull machine started in and went steadily on, going through the snow with two powerful engines behind it at the rate of about eight miles an hour. On January 20 the machine cut its way through to La Grande and the blockade was at an end.

Mr. Orange Jull, who invented the first rotary or Leslie snow-plow, is the inventor of this machine. It is about fifty feet long without the tender, which is a little smaller than those used on ordinary locomotives. A boiler containing 220 two-inch flues, and having a capacity of 800-horse power, furnished steam for the engines which work the excavator. On the front of the machine is the excavator which performs the work. It presents cutting edges of heavy steel plate on the sides and bottom, while in the centre is the centrifugal spheroid, resembling, nearer than anything else, a huge auger—8 feet wide at the base, and tapering down to a point, with the apex on one side, while the base extends from side to side. This "cone," as it is called, is fitted with wings or curved blades of steel, 2 feet wide at the base and tapering to the apex. The width of the machine or the space it clears over all is just 11 feet. Its weight is 65 tons, and everything about it is of the most substantial build. The machinery is very heavy, and, when running at full speed, the engines revolve 320 times a minute, while the "cone" makes 300 revolutions. It is fitted with Westinghouse air brakes.

The new machine works upon an entirely different principle from the old rotary plow, except in this, that the end of both plows is to generate a high centrifugal force in the snow by the exertion of great power, and throw it out in a solid stream to a considerable distance from the track. The original rotary separates this process into two parts, however—knives to cut the snow and throw it backward on the fans, and a fan-wheel used purely to generate centrifugal force. The new centrifugal plow combines these two processes in one; the front of the plow is entirely open, and in a square box works—entirely exposed to view and to contact with the snow—the immense oblique gimlet-pointed auger, revolving at high velocity, which, by the same operation, catches the snow in situ after the lower plate has cut under it, pushes it rapidly backward, and so cuts it apart, and at the same time gradually generates the required centrifugal force. The screw always turns in the same direction, and the direction of the jet of the discharge is regulated merely by the openings in the top case.