

**THE CABLE ROAD ON MOUNT SAN SALVATORE, NEAR LUGANO.**

If we stroll along the banks of the beautiful lake at Lugano, opposite us rises a steep and rocky mountain, San Salvatore, which constitutes the most striking feature of the landscape, being even more prominent here than Mt. Pilatus at Lucerne, or Saleve at Geneva; because, when we look across Lakes Lucerne and Geneva, these high mountains lie at one side, while San Salvatore is directly opposite us, at Lugano, forming, as we have said, the most noticeable object in that charming region at the southern foot of the Alps, and adding greatly to the beauty of the scene by the light effects which it causes. In the early morning, when the twilight still hangs over the water, San Salvatore is brilliantly lighted; after the sun has passed the meridian it darkens, throwing its shadow over the lake; and at sunset it shows faintly between two streams of strong light that fall to the right and left of it, casting a golden light on the water and the mountains which rise from the eastern shore. If we look toward it in the moonlight, it stands out darkly like a gigantic bell, the soft

road is 17 per cent, at the elevated hamlet of Pazzallo it is 38 per cent, and at the upper station not less than 60 per cent. The lower part of the road is cut through a bank of earth, but the upper part is cut deep in dolomite rock. The halfway station lies at a height of 1,604, and here is the electric motor for raising the cars. The power is obtained from a head of water on the other side of the lake. It is brought over the dam at Melide on the right shore, and from there is carried up the mountain to the village of Ciona and to the motor station. Besides the electric motor, there is a steam engine to be used in case of accident to the former. This road and that on the Burgenstock, not far from Lucerne, are the work of Bucher & Durrer, of Kagiswyl, in the Canton of Unterwalden.

Where the road begins the view of the country at the foot of the mountain is charming, and, as the train moves upward, it becomes more extensive every minute, spreading before us the heights of the region. The view from the upper station is grand, but from the little church on the summit it is wonderful, for the church stands on the edge of the precipice toward the lake.

Over the confusion of lower mountains rise the snow-capped peaks which border the horizon, and at our feet the most beautiful lake region of the Alps, Lugano and the villa-covered chain of hills, the so-called Collina d'Oro. The charm of these mountains lies in their moderate height. We do not feel, by any means, that we are in the kingdom of the vul-

**Fireproofing of Tissues.**

At the Berlin exhibition of means and contrivances for the prevention of accidents in industries and otherwise, prizes were awarded for the following processes of fireproofing, respectively, diminishing the combustibility of tissues, curtain materials, and theatrical scenery, viz.:

1. For light tissues: 8 kil. pure ammonium sulphate, 2½ kil. pure ammonium carbonate, 2 kil. pure borax, 3 kil. boric acid, 2 kil. starch, or 400 grammes dextrin, or 400 grammes gelatine, and 100 kil. water are mixed together, heated to 30° C., and the material impregnated with the mixture, centrifugated and dried, and then ironed as usual. One liter of the mixture, costing about 3 or 4 cents, is enough to impregnate 15 yards of material.

2. For curtain materials, theatrical decorations, wood, furniture: 15 kil. ammonium chloride are mixed with so much floated chalk as to give the mass consistency; it is then heated to 50–60° C., and the material given one or two coats of it by means of a brush. A kilogramme of it, costing about 4 to 5 cents, is sufficient to cover 5 square yards.

3. For wood, cordage, straw matting, packing cloth: 15 kil. ammonium chloride, 6 kil. boric acid, 3 kil. borax, are dissolved in 100 kil. water, the material laid down in the solution for 15–20 minutes at 100° C., squeezed and dried. One liter costs about 5 cents.

4. For paper, printed or not: 8 kil. ammonium sulphate, 3 kil. boric acid, 2 kil. borax, are dissolved in 100 kil. water, and the solution applied at 50° C.

**Attraction of Pile Driving.**

What is there, asks the *Evening Journal* (Jersey City), in a pile driver, or its operation, that stimulates human curiosity to such a noticeable degree? The putting up and setting in operation of a pile driver anywhere is sure to immediately draw a crowd, and keep a considerable portion of the people who compose it standing idly by to watch the monotonous repetition



**THE GREAT VIADUCT OF SAN SALVATORE.**



**THE SUMMIT OF THE MOUNTAIN, WITH THE CHAPEL.**

lines of which are lost in the waves of the lake. It is easy to understand why this mountain, crowned by the little Church of the Redeemer, has such charms for visitors at Lugano, and even for the inhabitants of the place, on such a night. On certain fete days the people go from Lugano to the service at this church—a short introduction to a long day of pleasure on the top. Tourists find great delight in ascending San Salvatore, for, although it is not difficult, there are so many rough places and steep rocks that one who has reached the top feels justified in claiming to have climbed a real mountain.

For some years past the pleasure of a trip to the top of this mountain has been greatly enhanced by the cable road. It runs up the northern slope and looks from Lugano like a deep cut in the green mountain. The station from which the trains start is in a suburb of Lugano, rightly named Paradise, and can be reached from the city in twenty minutes. The road is more than a mile long, and the station at the top is 1,978 feet above the starting point. This upper station is 2,903 feet and the summit of the mountain 2,982 feet above the level of the sea. At the beginning the grade of the

ture and the eagle, for, from Lugano and its surroundings, we hear the rumble of wagons, and the sound of the Italian bells floats up to us; and over the dam of Melide we see the Gotthard train on its way to the plains of Lombardy, and on the steamboat that plows through the waves of the lake, far below us, we discern the groups of passengers and the joyfully waving flags.

The traveler who visits the upper Italian lakes and stops at Lugano should not fail to ascend San Salvatore.—*Illustrirte Zeitung.*

**The Baku Pipe Line.**

Mannesmann high pressure tubes have been laid, by Dr. W. Von Siemens, for pumping petroleum a distance of 14½ miles and to a height of 3,300 ft. The pipe line runs from Baku, on the Caspian Sea, westward, is 4 in. in diameter, and the lengths are connected by the conical screw thread joint of the American type cut by an American machine. These Mannesmann steel tubes are laid directly on the surface, except at road crossings. The pumping pressure is nearly 90 atmospheres, 1,350 lb. to the square inch, and there is said to be no leakage.

of the movement of the pile driver's simple machinery and heavy weight, which is drawn up and then let go, to come down with a thud on the top of the unoffending and helpless stick of timber, driving it every time a few inches deeper into the mud. Wherever this operation is going on, you will see a crowd of from a dozen to one hundred and fifty men and boys, who appear to take as much interest in it as they would in a Punch and Judy show or a dog fight. We do not understand where the curiosity-exciting element is. After one has seen the big thumper go up and come down once he has seen all he ever will see of the mystery of pile driving. Yet crowds of idlers are found hanging around the pile driver's station for hours. Are these people really curious, or are they only lazy and loafing?

As one result of the English protectorate in Egypt, new irrigation works have been pushed in all directions, and the agricultural productions of the country greatly increased. Last year four hundred millions of pounds of cotton were produced in Egypt, being nearly one-quarter of the entire quantity consumed in Great Britain.