

eral the prices run as follows: For small motors, about 6 to 8 cents per kilowatt hour; for large motors, on a 12-hour day basis, about \$20 per H.P. year, and on a 24-hour day basis, about \$35 to \$40 per H.P. year. For lighting the price varies between 12 and 14 cents per kilowatt hour. The price of coal, however, is very high, being about \$8 per ton.

The Neapolitan Plant at Olevano.

Southern Italy has never been looked upon as a favorable field for investment in the modern sense, and from an

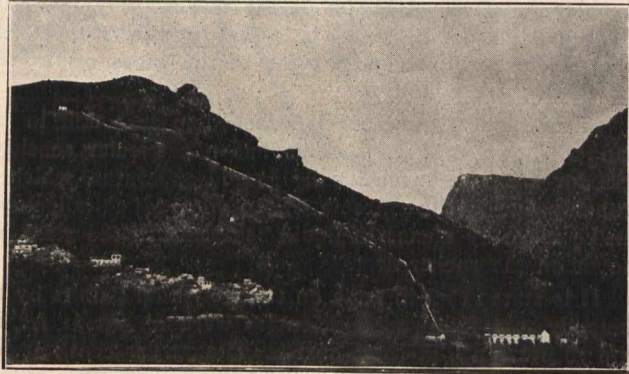


Fig. 5.—Olevano Station: General View.

engineering point of view there has been little of interest beyond the railroads. As for manufacturing there has been small inducement except in the absolute necessities, because of the actual absence of coal or other fuel. But history here as elsewhere within the past twenty years, is repeating



Fig. 6.—Olevano Station: Penstock 40-inch Diameter.

itself, and the water-powers have suddenly sprung into value, with the result that the twentieth century Italian financiers and engineers are turning to the south some of the energy already displayed in the north. Though called by the Italians "white coal" (carbone bianco) it cannot be a correct term in the French or Swiss sense, as there are no

glaciers: nevertheless there are many streams of high head, and copious amounts of water.

As an example of this recent activity in development, the installation of the Societa Meridionale di Eletticit  of Naples is taken as exhibiting interesting features. This installation first put into operation in January, 1905, is situated at Olevano, a little village in the Appenine mountains, about 50 miles south of Naples and 10 miles inland. The present capacity of the plant is 6,000 H.P., and arrangements are made for extension to 9,000 H.P. The power is transmitted to various towns northward as far as Naples, including particularly Salerno, Nocera, Castellammare, Torre Annunziata (Pompeii), and Torre del Greco (Herculaneum). The uses are mainly for lighting and mixed power in small units, such as fabric weaving, machine and wood working shops; but more than all, for the macaroni factory, which is the flour mill of Italy. The network of wires extends widely among the towns at the base of Vesuvius, but fortunately suffered injury at only a few places during the recent disastrous eruption.

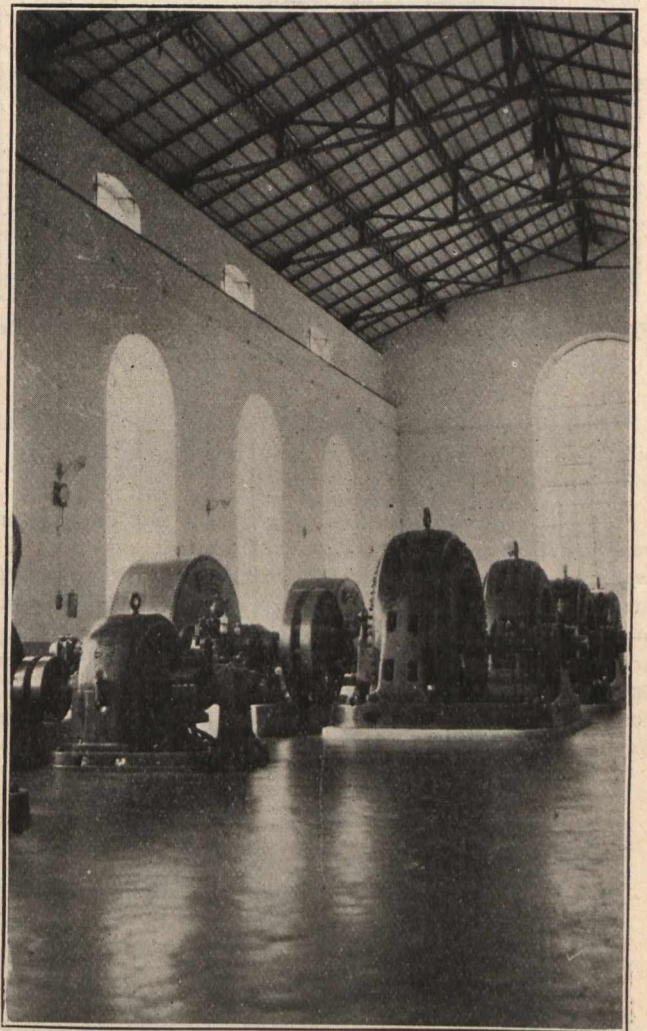


Fig. 7.—Olevano Station: Interior.

The plant is located on the Tusciano River, a mountain torrent in a valley rich with olive and fruit trees. (See Fig. 5.) The water is picked up at a high level, and brought by a small canal and tunnels a distance of about 3 miles to a sand box and forebay on the mountain side above the station. As the ultimate amount of water obtainable is only about 105 cubic feet per second, of which 70 cubic feet is now available, the headworks are of small dimensions. The water carries sand and is highly impregnated with lime, being a milky color, a feature which has given some trouble to wheels under the high head.

The penstock to the generating station is 40-inch minimum interior diameter, and is about 2,000 ft. long. It is carried down the mountain on 65 concrete saddles, and is supported by 17 heavy anchorages at the bends; the lowest portion is at an incline of 60 degrees where it is also supported by special structural steel towers. (See Fig. 6.) The lower end is horizontal, and distributed to 5 power and 2