

adopt the latter figures, with ten minutes added for stoppage at Bologna, in circulating the time for the whole journey.

The portion of the Strada Ferrata Meridionale, or Meridional Railway of Italy, which lies between Bologna and Brindisi, is 763 kilometres long, and is laid with a single line throughout. It was opened for traffic from Ancona to Bologna in 1861, from Ancona to Pescara in 1863, to Foggia in April, 1864, to Trani in August, 1864, to Bari in February, 1865, to Brindisi in May, 1865; and, in continuation to Lecce in January, 1866. There are excellent station buildings at forty-seven intermediate stations, mostly finished, but some in progress. There are crossing places and sidings at all of these stations, with a minimum length of 500 metres, and there are more than enough for all the traffic that can at present be expected. Good masonry houses (*case cantonieri*) have been constructed as in other parts of Italy, about a kilometre apart, for nearly the whole length of the line. There are four rooms in each for the accommodation of the platelayers and "guardians," and these men are, therefore, most of them always on the spot, and ready by day or night in case of need.

Out of the whole distance of 763 kilometres, 645 kilometres are quite straight. The sharpest curves, six in number, and of a total length of 4,080 metres, have radii of 400 metres. There are two curves of 450 metres radius, together 250 metres long, and there are thirteen and a-half kilometres of curves with radii of 500 metres, but the majority have radii of upwards of 600 metres. The steepest gradient is one in sixty-seven for a short distance south of Ancona. There is no other gradient steeper than one in 100, and the greater part of the line (and that part more particularly between Foggia and Brindisi) may be considered, as regards curves and gradients, to be a first-rate running line. The permanent way is laid with rails of a flat-bottomed section, in lengths of five and a-half or six metres, weighing thirty-seven kilogrammes per metre. The joints of the rails are fished throughout. The sleepers are laid transversely, about a metre apart on an average, from centre to centre, and are of oak, except for 188 kilometres between Monopoli and Lecce, where they are partly of oak and partly of beech. The rails are secured to the sleepers by means of dog spikes only, as in other parts of Italy and of the Continent generally. Such a fastening is not considered sufficient in this country, but these spikes have a far better hold in oak sleepers than in the fir or other sleepers of soft wood which we employ, and none of the curves are sharp on this line.

The bridges and viaducts generally appear to have been carefully and substantially constructed in brickwork, masonry, and iron. Of the bridges at Ninna, Massignano, Mero, Trivolo, Sangro, Orente, Asinello, Sinarca and Fortore, which are still in wood; that at Sangro, being more substantial than the others, will probably remain in its present condition for several years, while those at Ninna, Massignano, and Orente, will be replaced by permanent bridges in two years, and the remainder within twelve months.

Much expense has been incurred since the line was first opened, and no necessary expense seems to have been spared in making the line secure against encroachments of the sea as at Vasto, or on soft ground, or in regard to the cuttings and embankments.

There are as yet no fences over a great part of the line, even where roads run near, or by the side of the railway; and, except at the most important level-crossings there are no gates, a swinging bar or chain on two posts, being used, under the charge of a servant of the company, in place of them. But the absence of gates and substantial fences which is so frequently observable on the Continent does not appear, in spite of occasional accidents, to have been attended hitherto with the same bad results as in England, partly in consequence of the system which largely prevails of watching the beasts at pasture, and partly because they are most easily kept within bounds.

No fast service of trains has yet been run over this line, as there has not been traffic to justify the extra expense they involve; but the company undertake to run the whole distance from Bologna to Brindisi in eighteen and a-half hours, including altogether one hour and twenty-two minutes of stoppages at seventeen intermediate stations, with mail trains. They have now ninety-three locomotive engines, besides eighty-four under construction; and 329 passenger carriages, besides 219 under construction.

In working this great length of single line, the telegraph only is employed to secure the safety of the trains, when they are not "in orario," that is to say, not running according to the printed time tables. Morse's instruments, by which all the messages are printed on slips of paper in dots and dashes, are those most in use; and they are worked under a good system by responsible men. There is at least a "direct" and an "omnibus" instrument at every station, and there are also instruments for practice at some of the stations. Any deviations from the usual crossing places of the trains are arranged between the station masters upon these instruments, and written instructions are given in such cases to the *capo-conduttori* (head-guards) of the trains. All the *employes* at the stations are taught to work the instruments, and to understand them by the ear, as well as to read the printed slips. Special trains are now run over the line when required for royal and other trains at very short notice, and that which was placed at my disposal afforded an excellent illustration of the system. The company undertake willingly to run an "Indian mail" train special over the line at any time of the day or night, within two hours after the arrival of the steamer from Egypt, in eighteen and a half hours; and they do not at all object to any disarrangement of their ordinary traffic, which may be necessary for that purpose.

The outward mail from London might be expected to run through to Brindisi at stated times, and there would be no occasion for a special irregular service in that direction; but the homeward mail could not, as I took occasion to point out, be timed to any particular hour at Brindisi. And the Italian Government, as well as the railway companies, offer, therefore, to send the homeward mail through by a special train to St. Michel, so that no delay need occur in Italian territory. After the Egyptian steamer had been signalled off Brindisi the telegraph would to this end be employed to give notice of the hour at which the Eastern mail train would leave each station to St. Michel, and even to Calais and London. I am authorized further to state that the Italian Government would be willing to perform this service according to the times proposed by the railway companies, that is to say, in eighteen and a half hours between Brindisi and Bologna, in seven hours forty-five minutes one way, and eight hours five minutes the other way, between Bologna and Susa, with eight hours for the passage of the Mont Cenis, besides altogether two