

glass of the same size. The latest form of his tide gauge and tide-predicting machine were exhibited, and his harmonic analyzer was explained by the aid of a diagram.

The Saturday evening lecture to the operatives was delivered by Mr. John Evans, its title being "Unwritten History, and how to Read It." It was devoted to the early history of man as inferred from the remains of his handiwork, especial attention being given to remains found in the neighbourhood of Southampton. It was illustrated by beautiful diagrams of the various implements in question, showing the successive stages of their improvement; and though read, it was so clear and forcible that the audience appeared thoroughly to appreciate the intellectual treat provided for them.

The Mechanical Section had a lively discussion on the Channel tunnel, both in its engineering and political aspects, and Mr. Crampton exhibited, on a small scale, an excavating instrument which he would drive by direct hydraulic pressure instead of the pneumatic pressure hitherto employed. His scheme also includes the reduction of the excavated fragments to pulp, which would be run off in a drain to the end of the tunnel, and there pumped up to the surface. A beautiful model of the Forth Bridge, as about to be constructed, stood permanently on the table in this Section, and the plan of it was very fully expounded by Mr. Baker. Its longest span is about three times as long as that of any existing bridge. The trains are not to run along the top of it, but at the middle of its height, the girders above and below this level being in general appearance symmetrical.

The capabilities of compressed air as a motive power for tramways were ably set forth by Sir F. Bramwell, who espouses this mode of propulsion in preference to steam; and a very lucid statement was given by Mr. Preece of the results which have been attained in the use of the telephone. It is possible, he says, to swear to a friend's voice in the telephone though he be at 100 miles distance. The greatest distances at which conversations have been carried on have been from 400 to 500 miles. This was at night and through wires suspended in the air. Through submarine cables conversations have been carried on between Dover and Calais, and between Holyhead and Dublin; but there is no case where the distance with a submarine cable has exceeded 100 miles. The trouble from the influence of telegraphic currents in