

exclusive wire to Diarbekir, Bagdad, and Fao, at the head of the Persian Gulf, or by an alternative land line through Teheran, Ispahan, to Bushire.

The Persian Gulf cable then completes the distance to Kurrachee, from which point the messages are distributed throughout the Indian system; those for Australia being sent to Galle, where they are posted to Adelaide for re-transmission over our intercolonial lines—a most unsatisfactory process, occupying now as many days as will presently be performed in fewer hours.

I have roughly travelled over the existing lines as far as they are available, and will now explain more fully how the telegrams are conveyed from station to station, or circuit to circuit. A telegram handed into the Lothbury Office, in London, to be forwarded over the international route, is first transmitted direct, without a break or stoppage, either to Frankfort or Berlin. Then it is copied, and sent on by hand to Vienna, where it is again repeated by hand to Belgrade, at which place it falls into the hands of the Turkish authorities, who send it to Constantinople.

The Submarine Company's messages undergo a similar process, and are repeated, first in Paris, then Turin, again at Otranto or Valona, to Constantinople.

I may mention there are alternative routes available for the messages of both these Companies as far as Constantinople, but as a rule the lines marked on the diagram are preferred.

The telegrams having reached the Indo-Ottoman administration, it may be interesting to know how they are treated while passing over that section, which will explain how some of the vexatious delays have occurred, to the disgust of all who, for business or other purposes, have been compelled to use the lines.

Major Champain writes the following to the Under Secretary of State for India in 1865:—"The organization of the Turkish lines is defective, and, in my opinion, will continue so unless some decided step, such as an opposition route, be taken." In another paragraph he states:—"In some measure, however, I can account for delays of late in consequence of the cholera panic, which frightened the telegraph clerks from their posts."

Mr. Walton, the director of the Persian Gulf cable, also writes that the messages from Kurrachee to Fao, and *vice versa*, average seventy-four minutes, and that the Bagdad men report seventy or eighty messages on hand, send twelve or fifteen, and then smoke hookahs, or say their prayers for two or three hours, during which time Fao hears nothing of them.

I have reason to believe that this state of things no longer exists, as telegrams between England and India occupy a much less time than formerly; but there is still room for improvement. Neither Turks, Armenians, nor Greeks are fit for telegraphists, being quite unable to understand the necessity for immediate action, and the requirements of the telegraph service, to render it perfect. To remedy this evil the Electric and International Company tried the Russian route *via* St. Petersburg and Moscow, with the following result, which I have copied from the evidence of the Hon. Mr. Grimston, the Chairman of the Company, taken before a Committee of the House of Commons in 1866. Mr. Grimston says:—"I am sorry to say we were on one occasion induced to send our messages *via* St. Petersburg when the Turkish lines were broken down. From inquiries we made we found that they went perfectly well through Russia, but when they got to Persia no further trace could be obtained of them, and I suppose that Jonadab, the son of Rechab, lit his pipe with them, as they never reached India at all. Although we paid the Russian and Persian Governments their proportions, we had to refund the whole charges collected to the senders."

The lines throughout India were also at this time in very bad order; they had been very roughly constructed in the first instance, badly insulated, and, after the Indian mutiny, had to be very hurriedly put in temporary working order for military purposes. The lines connecting Kurrachee with the rest of India were not adequate for the European business brought to them when through communication was established; and perhaps the greatest defect in the entire system was the employment of underpaid and uneducated natives as signallers at the several stations where the messages had to be repeated, which rendered them almost useless from the unintelligible and mutilated form in which they were delivered.

It soon became obvious that this unsatisfactory state of affairs could not be allowed very much longer to exist, so, in 1866, a Select Committee of the House of Commons was appointed to take evidence, with a view to the improvement of East India communications, from which report I have received considerable assistance in the preparation of this paper. The evidence taken before the Committee, showing, as it did, the necessity for improved telegraphic communication with India which would be as much as possible under one administration, two proposals soon presented themselves to the public, one chiefly a submarine Company, to work through Italy and Sicily, under a concession already granted by the Italian Government, thence to the African coast, joining the Malta and Alexandria cable at Benghazi, from whence a duplicate cable has been already laid to Alexandria, and by land line to Suez. An additional wire to be placed on the Viceroy of Egypt's line, from Cairo to Suakin, or Massawah, when a new cable will be laid to Aden, Macullah, Kooria, Moorla Islands, calling at Muscat and Kurrachee, and on to Bombay, or as an alternative route by the Syrian line, *via* Jerusalem, Damascus, to Diarbekir, where it will join the present Asiatic-Turkish system already referred to. By the last mail I was informed that the prospectus of this Company has been withdrawn from the present.

The other proposal is that of Messrs. Siemens, Brothers, the well known telegraphic material manufacturers and contractors, of London and Berlin. The Russian and Persian Governments have allowed the above firm or Company to construct a line through their separate territories, and the Prussian Government have constructed a two-wire line from Norderney to Thorn, on the Russian boundary, leaving Messrs. Siemens' Company to provide the instruments and electricians. This will establish a line, exclusively under one management, worked by English operators, from London to Teheran, in Persia, passing through Thorn, Warsaw, Odessa, Kertch, Poti, Tiflis, and Teheran; then through the Persian line to Bushire.

The cable between Kertch and Poti will contain three wires, one of which will be set apart exclusively for Russian messages. This work is now drawing towards completion. On this line a considerable reduction will be made in the tariff from London to India, it being proposed to charge