anciently built a considerable town, of which the ruins are still visible. It is nine miles south of Bethlehem.

TEL Aresias, a village of Diarbekir, in Asiatic Tur­key, on the Euphrates, five miles west-north-west of Diarbekir.

TELACH, an island of Asiatic Pussia, in the Penzinskoi Gulf. Long. 159. 14. E. Lat. 61. 35. N.

TELANADING Islands, three small islands, lying east and west, near the north-west coast of the island of Gilolo. Long. 127. 30. E. Lat. 2. 18. N.

TELARUSE, a river of Asia, in the peninsula of Ma­lacca, which forms the northern boundary of the kingdom of Queda, and separates it from Lower Siam. It falls into the Eastern Seas. Long. 99. 42. E. Lat. 6. 55. N.

TELEGRAPH.

Telegraph, so named from two Greek words, *τέλος, end or distance,* and *γgάθω, I write,* is a machine so construct­ed as to enable two persons to converse with each other at a distance, either by sentences, words, or letters, according to a convention previously agreed upon by the parties. Such a mode of communicating ideas beyond the reach of hearing is not, however, confined to any particular ma­chine ; the fingers of the human hand are quite sufficient, as every young boarding-school lady knows, for the purpose ; and, when so applied, may be called a *telegraph.* Thus also the signal-flags used on board ships to communicate with each other, by making them represent letters or numbers, or both, constitute a *telegraph ;* as may also the sending up of sky-rockets, blue lights, the suspension of lanterns, the making of fires on beacons, high hills, &c. be considered as telegraphic communications.

In imitation of the French, however, we have almost in­discriminately adopted the use of the word *semaphore* for the telegraph, which is perhaps of more extensive appli­cation, being derived from *σημα*, *a sign,* and *θεgω*, *I hear ;* and may consequently be applied universally to whatever means may be used to communicate intelligence by signs or signals. Thus the firing of guns a certain number of times at certain intervals,—the notes of a trumpet, bugle, French horn, or other wind instrument,—the strokes on a drum,—may be used to convey information to a limited ex­tent. The troops and marines which landed on the coast of America in the last war, when scouring the woods in detached parties, were regulated by the notes of the bugle, which were so clearly understood that no false movements were ever made. The immense number of barges and boats which crowd the Imperial (’anal of China are directed in their movements, both by night and day, by the sound of the *gong.* The Indians of America convey intelligence from hill to hill by throwing out their arms with or without staves in them ; by spreading their cloaks, holding up skins, &c. ; and even the savage Hottentots, called Bosjeismans, the lowest probably in the scale of human beings, communicate with each other by arranging fires on the side of the hills in certain positions.

It is rather surprising that an art so simple as that of conveying ideas by means of signals, so well understood in remote antiquity, and practised even by savages, should have made so little progress in its improvement, that it may be said to have remained in its original rude state nearly down to our own times, when it has almost at once been brought to that state of perfection of which it appears to be capable.

One of the arguments usually adopted to prove that the art of conveying intelligence by signals was known in the early ages of Greece, is deduced from the opening of the *Agamemnon* of Æschylus, where the man on the watch-tower at the top of the palace announces the fire-signals having communicated the fall of Troy, long before any of the Greeks had returned from the siege ; and Clytemnestra afterwards relates the stations ; but this event of the burn­ing of Troy, supposed thus to have been known in Greece soon after it happened, proves nothing more than that the use of signals was known to the poet, who wrote eight or nine hundred years after the event. Mention, however, is made by Jeremiah (ch. vi. v. 1), who was at least 200 years before Æschylus, of “ setting up a sign of fire in Beth-haccerem and such signals are often alluded to by the prophets, as notices of the approach of an enemy.

The earliest decisive proof of telegraphic communica­tions, except those by fires (*πυgσειαι*), being in use among the Greeks, is found in the methods described by Polybius. The Romans had their *vexillarii,* and used flags and other contrivances for regulating the movements of their armies ; and they had hollow tubes constructed in the walls of their cities, by which they could communicate with the several ports or works by sound, as is done in our times in some manufactories by means of pipes or trumpets. Wherever the Romans pitched their camp, an elevated spot was select­ed for the signal station, to convey intelligence to the fo­raging parties or detachments ; but it is nowhere stated to what extent this was carried. Vegetius alludes to some­thing like a beam in the air, on the same principle perhaps as our semaphore.

In modern times, Kircher, who had more learning and less sense than any man of his day, and has written on al­most every subject, gives an idea of telegraphic commu­nication ; and so does the ingenious Marquis of Worces­ter, in his Century of Inventions ; but so vague as to convey no notion of the means he was to employ, except the use of colour ; for the “ discourse” to be held is stated to be “ as far as eye can discover black from white.” He also throws out a hint for a night telegraph, by which the same may be done, “ though as dark as pitch is black.” But almost every modern invention is supposed to exist in the mysterious “ scantlings” of the Marquis of Worcester.

The first telegraph on reoord in modern times, applica­ble to universal purposes, is that of Dr Hooke, described in the Philosophical Transactions of the year 1684. He minutely details the mode in which the stations should be selected, their height and intermediate ground, so that the refraction of the air may not disturb the clear appearance of the object ; the telescopes to be used ; the characters to represent the alphabet, which, he says, may be varied ten thousand ways, and “ none but the two extreme corre­spondents shall be able to discover the information con­veyed and so convinced is he of the practical efficiency of his telegraph, as to leave no doubt on his mind, “ that the same character may be seen at Paris within a minute after it hath been exposed in London.” His method con­sisted in exposing in succession as marry different shaped figures, or signs, at least, as the alphabet consists of letters. If used in the day-time, they might be squares, circles, tri­angles, &c. made of deals ; if at night, torches or other lights dis­posed in a certain order. These characters or signs were to be brought forth from behind a screen on rods, as they might be wanted, and exposed to view.

The accompanying figure, where A is the screen, and