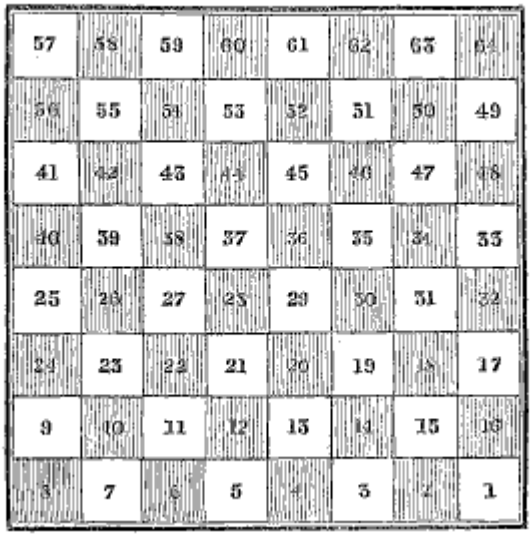
TELEGRAPH CHESS-BOARD



THE TELEGRAPH.

CHAPTER I.

The meaning of the term Telegraph—Divine Telegraph—Telegraphs mentioned in the Classics and Ancient History—The Telegraph invented by Polybius—Agamemnon's Telegraph, B. C. 1084—North American Aboriginal Telegraph—The American Revolutionary Army Signals.

THE MEANING OF THE TERM TELEGRAPH.

TELEGRAPH—Greek, τῆλε, at a distance, and γράφω, to write. The original meaning of the word, as taken from the Greek, is to perform the act of writing at a distance. In its modern application it means the art of "communicating at a distance." For example, the semaphore telegraph, composed of angles, communicated intelligence by certain mechanical contrivances, which had to be seen and understood by the operator miles distant. Also the needle systems of the electric telegraphs of Europe: they do not write, yet they communicate to points far distant. The term has been applied to any and all systems of transmitting information by signs or sounds to another beyond the reach of speech.

The art of conveying intelligence by the aid of signals has been practised for centuries, and for aught we know since Adam and Eve commenced their pioneer career in the Garden of Eden.

I have searched the Bible in vain for some tangible mode of signaling among the early nations. The most definite reference to communicating by signals mentioned in the Old Testament is to be found in chapter vi., verse 1, of the prophet Jeremiah, viz.: "O, ye children of Benjamin, gather yourselves to flee out of the midst of Jerusalem, and blow the trumpet in Tekoa, and set up a *sign of fire* in Beth-haccerem; for evil appeareth out of the north, and great destruction!"

The writings of Jeremiah date 588 years before Christ, and the above reference to communicating intelligence to others by the "*sign of fire*," or by any means of signaling is the earliest on reliable record.

DIVINE TELEGRAPH.

In the New Testament there is nothing more potent and more sublime than the signal placed in the heavens to indicate that the Son of God was born. The humble shepherds in the open fields of Judea, while guarding their flocks, beheld in the vaulted firmament a STAR, the brilliancy of which had no twin. It was a signal—a Divine signal—communicating to man the glad tidings of the birth of the Prince of Peace.

The Gospel of St. Matthew teaches that the signal light suspended in the heavens by the hand of the Creator was seen by the wise men of the east:

"Now when Jesus was born in Bethlehem of Judea, in the days of Herod the king, behold, there came wise men from the east to Jerusalem,

"Saying, Where is he that is born King of the Jews? for we have seen his star in the east, and are come to worship him."

TELEGRAPHS MENTIONED IN THE CLASSICS AND ANCIENT HISTORY.

In profane history and the classics, various methods of communicating by signals are mentioned.

Homer is the first who mentions the telegraphic art. He compares the lambent flame which shone round the head of Achilles, and spread its lustre all round, to the signals made in besieged cities by clouds of smoke in the daytime, and by bright fires at night, as certain signals calling on the neighboring states for assistance, or to enable them to repel the powerful efforts of the enemy.

Julius Africanus minutely details a mode of spelling words by a telegraph. It appears that fires of various substances were the means made use of. He says the Roman generals had recourse to such media of distant communication. In Livy, in Vegetius, and in the life of Sertorius, by Plutarch, it is mentioned that these generals frequently communicated by telegraphs.

In book iv., page 238, of Brumoi's account of the *Theatres of the Greeks*, it is stated that fire signals were used to communicate the events of wars, and likewise to direct the commencement of battles. This description of signals was anterior to the use of trumpets. A priest, crowned with laurels, preceded the army, and held a lighted torch in his hand. He was respected and spared by the enemy, even in the heat of battle. Hence the old proverbial expression for a complete defeat, that *even the very torch-bearer had not been spared.* Hence, also, it is highly probable that the usage arose of representing discord with inflamed torches.

The Chinese, like the ancient Scythians, communicated intelligence by lighting fires or raising a cloud of smoke at different stations. Polybius gives the general appellation of *Pyrsia* to the telegraphic modes then practised; indicating that *fires* were the principal means made use of. An ingenious though limited species of telegraph was invented by Æneas, who lived in the time of Aristotle, and who wrote on the duties of a general. Two oblong boards had various sentences written on

their surfaces, as, "*The enemy have entered the country*," "*The invasion has been repelled*," "*The enemy are in motion*," &c., &c. These boards were fixed perpendicularly in pieces of cork which fitted very nearly the mouth of two similar circular vessels filled with water, and having a cock adapted to each vessel. One of the vessels was stationed where the intelligence *originated*, and the second at the place to which it was to be *conveyed*. A person, as at present, was always on the lookout; and when he perceived one or more torches raised up at the primary station, he understood that intelligence was about to be communicated. On observing a second torch raised, he *instantly* answered the signal and opened or turned the cock of the vessel he was in charge of; the cock of the vessel at the primary station having been turned immediately on raising up the second torch at that station and on observing this signal answered. As the cocks were opened *simultaneously* at both stations, the circular corks with the board standing perpendicular to their respective centres, would descend in the vessels *equally*, as the water *subsided*. At the *instant* when the sentence to be communicated descended or sunk to the level of the edge of the vessel at the primary station, the person in charge there raised a torch. The person at the second station, on observing this, *instantly* answered this signal, and turned the cock of his vessel, and thus stopped the flowing of the water, reading at the same time the sentence then level with the edge of the vessel, such sentence, on account of the equal flow of the water, corresponding to the one, similarly situated at the original station.

TELEGRAPH INVENTED BY POLYBIUS—PUNIC WAR, B. C. 264.

Polybius writes, in his history of the Punic wars, that he improved a mode of communicating ideas by the letters of the alphabet applied to a telegraph invented by Cleoxenus, or according to some authors, by Democlitus. The letters of the Greek alphabet were divided into five parts, and those in each division were inscribed on a board fixed perpendicularly to an upright post for each of those divisions of the alphabet. These posts stood in an opening between two walls about ten feet by six, and situated on each side of the posts. Two long tubes (a dioptical instrument) were fixed in one position or direction. The telegraph workers could readily perceive through these tubes, which excluded all lateral rays, the right or left of the station viewed, and what number of torches might be raised above the top of the wall, either on the right or left of the station looked to. Things being thus prepared at the primary

and second station, the person in charge at the primary station would raise up two torches as a commencing signal that intelligence was about to be conveyed.

The looker-out at the other station would, on perceiving this, hold up a couple of torches, thus indicating that he was prepared. The ideas to be communicated were reduced previously to as few words as possible. The posts on which the letters were, being numbered 1, 2, 3, 4, and 5, one or more torches raised up above the left-hand wall, would indicate to the person at the second station, on what post was situated the first letter of the sentence to be communicated. The person at the second station, on observing through one of his tubes the torch or torches held up, would immediately raise torch or torches corresponding to the display exhibited. The person at the primary station, seeing his signal taken up, would lower his torch or torches, which would at once disappear on sinking under the level of the top of the wall. The column on which the letter was, being thus ascertained, the person at the primary station would hold up from behind the right-hand wall, a torch or torches, indicating the position of the letter on the post already pointed out. For instance, if it was the first letter at the top of the column, he would hold up one torch, and if the second, two torches, and so on to the fifth letter on the column. The person at the second station would exhibit a corresponding number, to make it appear that he understood the signal. Every letter in each word would be communicated in this manner; and we are to suppose that an agreed-on signal would be made to indicate the termination of a word and of a sentence. It is further evident that information could be conveyed along *any number* of stations, on the principle of the modern telegraph of *keeping up* every signal until *taken up* at the succeeding station. But in this case two parallel walls would be requisite on each side of the posts, in order that the torches, when depressed, might disappear to the two contiguous stations at the same instant. This was a night telegraph; but it could obviously and readily have been converted into a *day telegraph* by substituting *flags* in lieu of *torches*.

AGAMEMNON'S TELEGRAPH, B. C. 1084.

Æschylus, who was born five hundred and twenty-five years before Christ, wrote a tragedy in which he gave an account of the fall of Troy, which occurred 1084 years before the Christian era. For ten years the city had been besieged by Agamemnon. The news of the memorable event was signaled to his queen, Clytæmnestra. The following is from Æschylus:

"Watchman. I pray the gods a deliverance from these toils, a remedy for my year-long watch, in which, couching on my elbows on the roofs of the Atreidæ, like a dog, I have contemplated the host of the nightly stars, and the bright potentates that bear winter and summer to mortals, conspicuous in the firmament. And now I am watching for the signal of the beacon, the blaze of fire that brings a voice from Troy, and tidings of its capture; for thus strong in hope is the woman's heart, of manly counsel. Meanwhile I have a night-bewildered and dew-drenched couch, not visited by dreams, for fear, in place of sleep, stands at my side, so that I cannot firmly close my eyelids in slumber. And when I think to sing or whistle, preparing this the counter-charm of song against sleep, then do I mourn, sighing over the sad condition of this house, that is not, as of yore, most excellently administered. But now, may there be a happy release from my toils as the fire of joyous tidings appears through the gloom. Oh hail! thou lamp of night, thou that displayest a light as like the day, and the marshalling of many dances in Argos on account of this event. Ho! ho! I will give a signal distinctly to the wife of Agamemnon, that she, having arisen with all speed from her couch, may raise aloud a joyous shout in welcome to this beacon, if indeed the city of Ilion is taken, as the beacon light stands forth announcing; and I myself will dance a prelude. For I will count the throws of my lord that have fallen well; mine own, since this kindling of the beacon light, has cast me thrice six. May it then befall me to grasp with this hand of mine the friendly hand of the sovereign of this palace on his arrival.

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Chorus. But thou, daughter of Tyndarus, Queen Clytæmnestra, what means this? What new event? What is it that thou hast heard? and on the faith of what tidings art thou burning incense sent around? And the altars of all our city-guarding gods, of those above and those below, gods of heaven and gods of the forum, are blazing with offerings; and in different directions different flames are springing upward, high as heaven, drugged with the mild, unadulterated cordials of pure ungent, with the royal cake, brought from the inmost cells. Concerning these things, tell one both what is possible and lawful for thee to say, and become thou the healer of this distracting anxiety, which now, one while, is full of evil thought, but at another time, because of the sacrifices, hope blandly fawning upon me repels the insatiate care, the rankling sorrow that is preying upon my heart. * * *

I have come revering thy majesty, Clytæmnestra; for right

it is to honor the consort of a chieftain hero, when the monarch's throne has been left empty. And gladly shall I hear whether thou, having learned aught that is good or not, art doing sacrifice with hopes that herald gladness—yet not if thou continuest silent will there be offence.

CLYTÆMNESTRA. Let morning become, as the adage runs, a herald of gladness from its mother night; and learn thou a joy greater than thy hope to hear, for the Argives have taken the city of Priam.

CH. How sayest thou? thy word escaped me from its incredulity.

CLYT. I say that Troy is in the power of the Argives—speak I clearly?

CH. Joy is stealing over me, that calls forth a tear.

CLYT. Ay, for thy countenance proves thy loyalty.

CH. Why, what sure proof hast thou of these things?

CLYT. I have a proof—why not?—unless the deity hath deluded me.

CH. Art thou then reverencing the vision of dreams that win easy credence?

CLYT. I would not take the opinion of my soul when sunk in slumber.

CH. But did some wingless rumor gladden thy mind?

CLYT. Thou sharply mockest my sense as that of a young girl.

CH. And at what time hath the city been sacked

CLYT. I say in the night that hath now brought forth this day.

CH. And what messenger could come with such speed?

CLYT. Vulcan, sending forth a brilliant gleam from Ida; and beacon dispatched beacon of courier-fire hitherward. Ida, first, to the Hermæan promontory of Lemnos, and third in order Athos, mount of Jove, received the great torch from the isle, and passing o'er so as to ridge the sea, the might of the lamp as it joyously travelled, the pine-torch transmitting its gold-gleaming splendor, like a sun, to the watch towers of Macistus. And the watchman omitted not his share of the messenger's duty, either by any delay, or by being carelessly overcome by sleep; but the light of the beacon coming from afar to the streams of the Euripus gives signal to the watchmen of Messapius, and they lighted a flame in turn and sent the tidings onward, having kindled with fire a pile of withered heath. And the lamp in its strength not yet at all bedimmed, bounding over the plain of the Asopus, like the bright moon to the crag of Cithæron, aroused another relay of the courier fire. And

the watch refused not the light that was sent from afar, lighting a larger pile than those above mentioned; but it darted across the lake Gorgopis, and having reached mount Ægiplanctus, stirred it up that the rule of fire might not be stint, and lighting it up in unscanting strength, they send on a mighty beard of flame, so that it passed glaring beyond the headland that looks down upon the Saronic frith, then it darted down until it reached the Arachnæan height, the neighboring post of observation, and thereupon to this roof of the Atreidæ here darts this light, no new descendant of the fire of Ida. Such, in truth, were my regulations for the bearers of the torch fulfilled by succession from one to another; and the first and the last in the course surpass the rest. Such proof and signal do I tell thee of my husband having sent me tidings from Troy.

Ch. To the gods, my queen! I will make prayer hereafter, but I could wish to hear and to admire once more, at length, those tidings as thou tellest them.

Clyt. On this very day the Greeks are in possession of Troy. I think that a discordant clamor is loud in the city. If you pour into the same vessel both vinegar and oil, you will pronounce that they are foemen, and not friends. So you may hear the voices of the captured and the conquerors distinct because of a double result; for the one party having fallen about, the corpses of men, both those of brothers, and children those of their aged parents, are bewailing, from a throat that is no longer free, the death of those that were dearest to them. But the other party, on the contrary, is hungry, fatigued from roaming all the night after the battle, arranging at meals of such things as the city furnishes, by no fixed law in the distribution, but as each hath drawn the lot of fortune. Already are they dwelling in the captured houses of the Trojans, freed from the frost beneath the sky, and from the dews, thus will they, poor wretches, sleep the whole night through without sentries."

NORTH AMERICAN ABORIGINAL TELEGRAPH.

The most remarkable signaling records are to be found on various parts of the North American continent. The aborigines, or a race of people centuries since extinct, had their signal stations or mounds. Upon the loftiest summits beacon fires were built, and the rising smoke by day and the red flame by night communicated intelligence to others far distant. These mounds, these beacon remains, are still to be seen in different parts of America. An eminent author upon this subject says, that the most commanding positions on the hills bordering the

valleys of the west, are often crowned with mounds, generally intermediate, but sometimes of large size; suggesting at once the purposes to which some of the *cairns* or hill-mounds of the Celts were applied, namely, that of signal or alarm posts. Ranges of these mounds may be observed extending along the valleys for many miles. Between Chillicothe and Columbus, on the eastern border of the Scioto valley, not far apart, some twenty may be selected, so placed in respect to each other, that it is believed, if the country was cleared of the forest, signals of fire might be transmitted in a few minutes along the whole line. On a hill opposite Chillicothe, nearly six hundred feet in height, the loftiest in the entire region, one of these mounds is placed. A fire built upon it would be distinctly visible for fifteen or twenty miles up, and an equal distance down the valley.

In the Miami valley similar works are found. Upon a hill three hundred feet in height, overlooking the Colerain work, and commanding an extensive view of the valley, are placed two mounds, which exhibit marks of fire on and around them. Similar mounds occur at intervals along the Wabash and Illinois, as also on the Upper Mississippi, the Ohio, the Miamis, and Scioto. On the high hills, overlooking Portsmouth and Marietta, mounds of stone are situated; those of the former place exhibit evident marks of fire.

These mounds, or beacon hills, are to be found in different parts of the continent. The remains of these beacon fires are silent records left by a people, long since gone. Above the cinders have grown stately oaks, and upon the surface of the earth nothing but the new soil is to be seen. On removing the

earth some few feet, the charcoal and ash beds are found. How many centuries they have been there no human being can divine. It remains a sealed history to the world.

The savage Indians, that rove in the wild regions of America, have their means of communicating by beacons and other modes of signaling. When Lieut. Fremont penetrated into the fastnesses of Upper California, his appearance created an alarm among the Indians. He there observed the primitive telegraph communicating his presence to tribes far distant. In his report, he says: "Columns of smoke rose over the country at scattered intervals—signals, by which the Indians, here, as elsewhere, communicate to each other, that enemies are in the country. It is a signal of ancient and very universal application among barbarians."

AMERICAN REVOLUTIONARY ARMY SIGNALS.

During the American Revolutionary war, the people had their modes of signaling to each other the movements of the enemy, and especially when they were approaching. Among the different plans of communicating between the divisions of the army, was the next representation, of a barrel at the head of a mast, a flag below it, and the basket hanging to a cross-beam. This mast was moveable. The parts were moveable, and any arranged system of signaling could be carried out by this simple contrivance. For example, suppose the enemy was approaching, the pole might be left bare, so that there would be no reason for the enemy to suspect the objects of its use. The basket or either of the others, alone or combined, or any transposition, could be made to communicate a variety of information.