and obſerved : water is poured in, and the corks and ſticks are put in the vessels. When any of the events which are written on the ſticks ſhall happen, a torch or other light is raised, which muſt be held aloft till ſuch time as another is raiſed by the party to whom it is directed. ( This firſt ſignal is only to give notice that both parties are ready and atten­tive). Then the torch or other light muſt be taken away, and the cocks ſet open. When the interval, that is, that part of the stick where the event of which notice is to be given or written, ſhall be fallen to a level with the vessels, then the man who gives the ſignal lifts up his torch ; and on the other side, the correspondent ſignal-maker immediate­ly turns the cock of his vessel, and looks at what is writ on that part of the stick which touches the mouth of the vesſel: on which occaſion, if every thing has been executed exactly and equally on both ſides, both will read the ſame thing.”

This method was defective, becauſe it could not convey any other intelligence except what was written on the sticks, and even that not particularly enough. With regard to all unforeseen events, it was quite uſeless.

A new method was invented by Cleoxenus (others say by Democlitus)@@, and very much improved by Polybius, as he himſelf informs us. He deſcribes this method as follows: Take the letters of the (Greek) alphabet, and divide them into five parts, each of which will conſiſt of five letters, ex­cept the last diviſion, which will have only four. Let theſe be fixed on a board in five columns. The man who is to give the ſignals is then to begin by holding up two torches, which he is to keep aloft till the other party has also ſhown two. This is only to ſhow that both ſides are ready. Theſe first torches are then withdrawn. Both parties are provided with boards, on which the letters are dispoſed as formerly described. The perſon then who gives the ſignal is to hold up torches on the left to point out to the other party from what column he ſhall take the letters as they are pointed out to him. If it is to be from the first column, he holds up one torch ; if from the ſecond, two ; and ſo on for the others. He is then to hold up torches on the right, to denote the particular letter of the column that is to be taken. All this muſt have been agreed on beforehand. The man who gives the ſignals muſt have an inſtrument (διοπΙgαν), conſiſting of two tubes, and so placed as that, by looking through one of them, he can see only the right side, and through the other only the left, of him who is to anſwer. The board muſt be ſet up near this instrument ; and the station on the right and left muſt be ſurrounded with a wall (παgαπεφgαχθαι) ten feet broad, and about the height of a man, that the torches raiſed above it may give a clear and ſtrong light, and that when taken down they may be completely concealed. Let us now suppoſe that this information is to be communicated—*A number of the auxiliaries, about a hundred, have gone over to the enemy.* In the first place, words muſt be choſen that will convey the informa­tion in the fewest letters poſſible; as, *A hundred Cretans have deſerted, KgηΙες εχαΙον αφ σμων ηυΙομολησαν.* Having written down this ſentence, it is conveyed in this manner. The first letter is a K which is in the ſecond column; two torches are therefore to be raiſed on the left hand to inform the perſon who receives the ſignals to look into that particular column. Then five torches are to be held up on the right, to mark the letter *k,* which is the laſt in the column. Then four torches are to be held up on the left to point out the g (r)*,* which is in the fourth column, and two on the right to ſhow that it is the ſecond letter of that column. The other letters are pointed out in the same manner.—Such was the *pyrsia* or telegraph recommended by Polybius.

But neither this nor any other method mentioned by the ancients ſeems ever to have been brought into general uſe; nor does it appear that the moderns had thought of ſuch a machine as a *telegraph* till the year 1663, when the Marquis of Worceſter, in his Century of Inventions, affirmed that he had diſcovered “ a method by which, at a window, as far as eye can diſcover black from white, a man may hold diſcourſe with his correspondent, without noiſe made or no­tice taken ; being according to occaſion given, or means af­forded, *ex re nota,* and no need of proviſion before hand ; though much better if foreſeen, and courſe taken by mutual content of parties.” This could be done only bv means of a telegraph, which in the next ſentence is declared to have been rendered ſo perfect, that by means of it the correſpondence could be carried on "by night as well as by day, though as dark as pitch is black.”

About 40 years afterwards M. Amontons propoſed a new telegraph. His method was this : Let there be people placed in ſeveral stations, at ſuch a diſtance from one another, that by the help of a teleſcope a man in one station may ſee a ſignal made in the next before him ; he muſt immediately make the ſame ſignal, that it may be ſeen by perlons in the ſtation next after him, who are to commu­nicate it to thoſe in the following station, and ſo on. Theſe ſignals may be as letters of the alphabet, or as a cipher, understood only by the two perſons who are in the diſtant places, and not by thoſe who make the ſignals. The per­lon in the second ſtation making the ſignal to the person in the third the very moment he sees it in the firſt, the news may be carried to the greatest diſtance in as little time as is necessary to make the ſignals in the first ſtation. The di­ſtance of the ſeveral ſtations, which muſt be as few as poſ­ſible, is measured by the reach of a teleſcope. Amontons tried this method in a small tract of land before ſeveral persons of the highest rank at the court of France.

It was not, however, till the French revolution that the telegraph was applied to uſeful purpoſes. Whether Μ. Chappe, who is said to have invented the telegraph firſt uſed by the French about the end of 1793, knew any thing of Amontons’s invention or not, it is impoſſible to ſay ; but his telegraph was conſtructed on principles nearly ſimilar. The manner of using this telegraph was as follows : At the firſt ſtation, which was on the 100f of the palace of the Louvre at Paris, M. Chappe, the inventor, received in wri­ting, from the committee of public welfare, the words to be ſent to Lisle, near which the French army at that time was. An upright poſt was erected on the Louvre, at the top of which were two tranfverse arms, moveable in all directions by a single piece of mechaniſm, and with inconceivable rapi­dity. He invented a number of poſitions for these arms, which stood as ſigns for the letters of the alphabet ; and theſe, for the greater celerity and simplicity, he reduced in number as much as poſſible. The grammarian will easily conceive that ſixteen ſigns may amply supply all the letters of the alphabet, ſince some letters may be omitted not only without detriment but with advantage. These ſigns, as they were arbitrary, could be changed every week ; so that the ſign of B for one day might be the ſign of M the next; and it was only neceſſary that the perſons at the extremi­ties ſhould know the key. The intermediate operators were only inſtructed generally in theſe ſixteen ſignals; which were ſo distinct, ſo marked, ſo different the one from the other, that they were eaſily remembered. The construction of the machine was ſuch, that each ſignal was uniform­ly given in precisely the ſame manner at all times : It did not depend on the operator’s manual ſkill ; and the poſition of the arm could never, for any one ſignal, be a degree higher or a degree lower, its movement being regulated me­chanically.

Μ. Chappe having received at the Louvre the ſentence

@@@[mu] Polybius, Ibid.