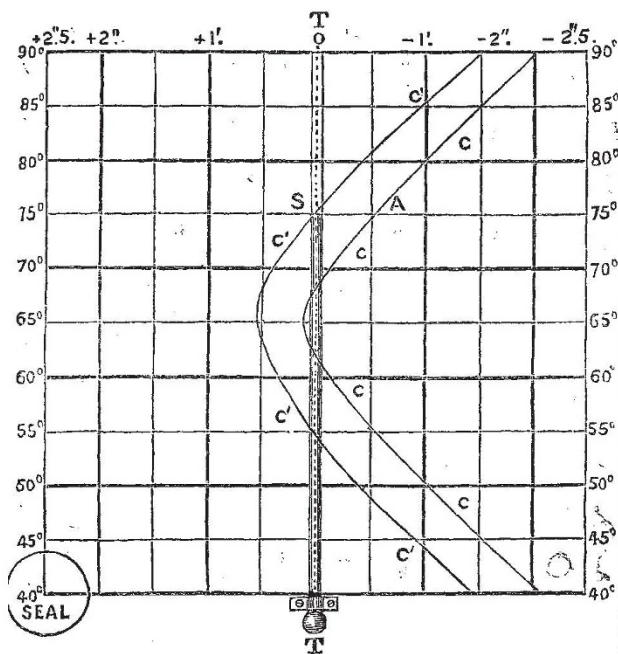


table or diagram as given below, in which T is a thermometer, CC and C' C' are curves drawn after testing the chronometer. For an ordinary voyage in which no extremes of temperature are expected, or which, if they occur, will be of short duration only, we should seal the diagram under the thermometer, so that the temperature line of 65° should coincide with and pass through the apex of the curve, and if the chronometer were neither gaining nor losing at 65° we should draw the curve as CC; if the chronometer were gaining five-tenths of a second per day we should draw the curve as C' C'.

Then the rate is always to be reckoned from the summit of the mercury horizontally till the line meets the curve; if this line should be to the left of the thermometer the time should be reckoned as plus (+) or gaining; if to the right, as minus (-) or losing.

Thus, for example, taking the line SA for a chronometer whose rate at 65° is 0' 0ths, this will give at 75° - 0' 5ths, or losing half a second daily; or for a chronometer whose rate at 65° (C' C') is fast 0' 5ths, at 75° it would be 0' 0ths for a chronometer whose daily coefficient gives a curve as here drawn.



Of course in determining a daily rate, two or more observations of temperature should be taken, so as to give a mean temperature point from which to reckon the rate, as the day and night temperatures differ considerably.

Prof. Lieusous, in his brochure, gives a rule for determining the amount which a new chronometer is likely to gain on its rate, owing to the hardness of the balance-spring and other causes independent of temperature, but we do not find this latter so reliable as the temperature-correction method as detailed above.

Should this prove interesting to your readers, we may, with your permission, at some future time give a few reasons for the difference that is found to exist between the daily coefficients of temperature of different chronometers.

PARKINSON AND FRODSHAM

4, Change Alley, Cornhill, London, March 12

P.S.—The above system renders the auxiliary compensation unnecessary, and can therefore effect a saving of 4, to 5, on the cost of each instrument.

Lowest Temperature

THERE appears to be something almost abnormal in the climatic conditions to which the observatory at Stonyhurst is subject (vol. xv. p. 399). I remember going into a garden in the neighbourhood of Knaresborough, in Yorkshire, about eight o'clock on the morning of Christmas Day, 1860, and seeing what I suppose had never been seen in England outside a laboratory before that morning, viz., the mercury in a thermometer

standing at 8° F. below zero, i.e., 40° F. of frost. At Stonyhurst on the same day the thermometer went down only to 6° 7 F., i.e., there were 25° 3 F. of frost.

Again, on March 1, 1877, the lowest temperature registered in the neighbourhood of Knaresborough was only, I believe, 18° F., whilst at Stonyhurst it was 9° 1 F. The differences, therefore, between the temperatures on the two days spoken of at these places, not fifty miles distant from each other, were respectively 2° 4 F. and 26° F., which are so wide apart as to suggest that Stonyhurst is subject to climatic conditions which do not prevail in the Vale of York. I may mention that the record in the *Times* of the temperature on the morning of March 1, was only 25° F., but in country districts in the south of England it was as low as 20° F. Great numbers of oaks, laurels, and other evergreens were killed in Yorkshire by the frost of 1860.

Oxford

R. ABBAY

Meteor

A FEW minutes before 10 o'clock on Saturday night I saw a very beautiful meteor towards the western horizon. The meteor passed obliquely downwards towards Orion's belt, moving slowly from right to left. When first seen it was a brilliant white body about 1/4th the apparent diameter of the moon. As it passed onwards it became bluish and pear-shaped with a bright track. Before its final disappearance between the belt and the pleiades it had a purplish hue. It was visible about four or five seconds, and during that period it traversed about ten or fifteen degrees.

Brighton, March 12

W. AINSLIE HOLLIS

I SAW the meteor at 9h. 56m. P.M. of Saturday, March 17, mentioned by your correspondent, "W. M." I was on the sea-shore at Rossall, near Fleetwood, and while looking out to sea, due west, I became aware of a sudden outburst of light on my left. On turning I saw the splendid meteor sailing rather slowly across the sky from a point about 3° north-west of ε Hydrae to a point in Monoceros, whose position I should estimate to be about R.A. = 7h. 30m.; Decl. = 20° 0' south.

March 26

J. H.

DR. SCHLIEMANN ON MYCENÆ

LAST Thursday night will be always regarded as a memorable one in the history of the Society of Antiquaries, when Dr. Schliemann described to an unusually distinguished audience his own and his wife's explorations on the site of the Acropolis of ancient Mycenæ. Taking as his clue the well-known passage in which Pausanias (A.D. 176) speaks of the ruins and traditions of the famous Greek city, Dr. Schliemann was led to the belief that his scholarly predecessors had mistaken its drift. The passage in Pausanias runs thus:—

"Among other remains of the wall is the gate, on which stand lions. They (the wall and the gate) are said to be the work of the Cyclopes, who built the wall for Pætus in Tiryns. In the ruins of Mycenæ is the fountain called Perseia, and the subterranean buildings of Atreus and his children, in which they stored their treasures. There is a sepulchre of Atreus, with the tombs of Agamemnon's companions, who on their return from Ilium were killed at dinner by Ægisthus. The identity of the sepulchre of Cassandra is called in question by the Lacedæmonians of Amyklæ. There is the tomb of Agamemnon and that of his charioteer Eurymedon. Teledamos and Pelops were deposited in the same sepulchre, for it is said that Cassandra bore these twins, and that, when still little babies, they were slaughtered by Ægisthus, together with their parent. Hellanikos (B.C. 495-411) writes that Pylades, who was married to Electra by the consent of Orestes, had by her two sons, Medon and Strophios. Clytemnestra and Ægisthus were buried at a little distance from the wall, because they were thought unworthy to have their tombs inside of it, where Agamemnon reposed, and those who were slain with him."

Previous explorers had searched in vain for any of the relics here referred to, because they searched in the wrong place, mistaking the wall spoken of for that of the city,

whereas Dr. Schliemann's instinct led him to infer that Agamemnon and his companions were buried within the wall of the citadel. Following this clue he began three years ago to sink many shafts in different parts of the Acropolis, and met with such encouraging results near the Lions' Gate mentioned by Pausanias that he devoted his main attention to diggings in this quarter. There were, however, so many hindrances, that it was only in last July he was able to carry out his plans.

In the Acropolis Dr. Schliemann had entirely cleared the famous Lions' Gate, which he went on to describe, discussing also the old question of the symbolism of the lions surmounting the gateway, and of the altar surmounted by a column, on either side of which rest the fore paws of one of the two lions. One theory was that the column related to the solar worship of the Persians, another that the altar is a fire altar, guarded by the lions; a third that we have here a representation of Apollo Agyieus. Dr. Schliemann himself was of this last opinion, which, he thought, was borne out by the Phrygian descent of the Pelopidæ. The lion-cult of the Phrygians was well known. Besides, among the jewels found in the tombs, and especially in the first tomb, this religious lion symbolism re-appeared. On two of the *repoussé* gold plates there found was seen a lion sacrificing a stag to Hera Βοώπις, who was represented by a large cow's head, with open jaws, just in the act of devouring the sacrifice. On entering the Lions' Gate were seemingly the ancient dwellings of the doorkeepers, of whom some account was given. Further on, as at Troy, was quadrangular Cyclopean masonry, marking the site of a second gate of wood. Still further on were two small Cyclopean water-conduits; to the right of the entrance passage were two Cyclopean cisterns. A little further on came to light that large double parallel circle of closely-jointed, slanting slabs, which has become so famous during the last three months. Only about one-half of it rests on the rock, the other half rests on a 12-foot high Cyclopean wall, which has been expressly built to support it in the lower part of the Acropolis. The double circle had been originally covered with cross slabs, of which six are still *in situ*. Inside the double slabs was, first, a layer of stones for the purpose of holding the slabs in their position. The remaining space was filled up with pure earth mixed with long thin cockles, in the places where the original covering remains in its position, or with *débris* of houses mixed with countless fragments of archaic pottery wherever the covering was missing. This circumstance could leave no doubt that the cross slabs were removed long before the capture of Mycenæ by the Argives (B.C. 468). The entrance to the double circle was from the north side. In the western half of the circle Dr. Schliemann discovered three rows of tomb stelæ, nine in all, made of calcareous stone. All stood upright; four only which faced the west had sculptures in relief. One stelè, precisely that beneath which was found the body with the golden plates representing the lion sacrificing the stag to Hera Βοώπις, represents a hunting scene. The two next sculptured sepulchral slabs represent each a battle scene. The Mycenæ slabs, Dr. Schliemann said, were unique of their kind. The manner in which they fill up the spaces not covered by men and animals with a variety of beautiful spiral ornaments reminds us of the principles of the painting on the so-called Orientalising vases. But in the Mycenæan sculptures nowhere do we see a representation of plants so characteristic of ancient Greek ornamentation of this class. The whole is rather linear ornamentation, representing the forms of the bas-relief. Hereby we have an interesting reference to the epoch in Greek art preceding the time when that art was determined by Oriental influences, an epoch which may approximately be said to reach far back into the Second Millennium (B.C.).

Here then in the Acropolis of Mycenæ are tombs which are no myth, but an evident reality. Who were these great

personages entombed here, and what were the services rendered by them to Mycenæ which deserved such splendid funeral honours? It was argued at length that the inhabitants of these tombs could be none other than the very persons spoken of in the extract Dr. Schliemann had cited at the outset from Pausanias. Dr. Schliemann then proceeded to state the details of what he had found below the ruins of the Hellenic city. He spoke of the vast masses of splendidly archaic vases. Iron, he remarked, was found in the upper Hellenic city only, and no trace of it in the prehistoric strata. Glass was found now and then in the shape of white beads. Opal glass also occurred as beads or small ornaments. Sometimes wood was found in a perfect state of preservation, as in the board of a box (*βάροθηξ*), on which were carved in bas-relief beautiful spirals. Rock-crystal was frequent, for beads and also for vases. There were also beads of amethyst, onyx, agate, serpentine, and the like precious stones, with splendid intaglio ornamentation representing men or animals. When towards the middle of November he wished to close the excavations, Dr. Schliemann excavated the spots marked by the sepulchral slabs, and found below all of them immense rock-cut tombs, as well as other seemingly much older tombstones, and another very large sepulchre from which the tombstones had disappeared. These tombs and the treasures they contained, consisting of masses of jewels, golden diadems, crowns with foliage, large stars of leaves, girdles, shoulder-belts, breast-plates, &c., were described in detail. He argued that as 100 goldsmiths would need years to prepare such a mass of jewels, there must have been goldsmiths in Mycenæ from whom such jewels could have been bought ready-made. He spoke of the necklaces, too, and of the golden mask taken from one of the bodies, which must evidently be a portraiture of the deceased. Dr. Schliemann then proceeded to show that in a remote antiquity it was either the custom, or, at least, that it was nothing unusual that living persons wore masks. That also immortal gods wore masks was proved by the bust of Pallas Athene, of which one copy was in the British Museum and two in Athens. It was also represented on the Corinthian medals. The treasures of Mycenæ did not contain an object which represented a trace of Oriental or Egyptian influences, and they proved, therefore, that ages before the epoch of Pericles there existed here a flourishing school of domestic artists, the formation and development of which must have occupied a great number of centuries. They further proved that Homer had lived in Mycenæ's golden age, and at or near the time of the tragic event by which the inmates of the five sepulchres lost their lives, because shortly after that event Mycenæ sank by a sudden political catastrophe to the condition of a poor powerless provincial town, from which it had never again emerged. They had the certainty that Mycenæ's flourishing school of art disappeared, together with its wealth; but its artistic genius survived the destruction, and when, in later centuries, circumstances became again favourable for its development, it lifted a second time its head to the heavens.

No doubt Dr. Schliemann's theories will be subjected to much criticism when the full details and drawings appear in his forthcoming work. Of the value of the discoveries themselves there can be but one opinion. Those alone which have been made in the Acropolis of what many have been inclined hitherto to regard as a half mythical city are of themselves sufficient to entitle him to an important place in the field of scientific research. Both to the historian and ethnologist his researches must prove of the greatest value, and all who have been stirred with the recital of the deeds of the Homeric heroes will rejoice to have henceforth reasonable external evidence for regarding them as something more than myths.