

# SCIENCE.

FRIDAY, AUGUST 31, 1883.

## SONNET.

THE years through which aught that hath life, O Sun!  
Hath watched or felt thy rising, what are they  
To those vast aeons, when, from night to day,  
From dawn to dark, thy circuit thou didst run,  
With none to greet thee or regret thee; none  
To bless thy glowing harbinger of cloud,  
Rose-tinted; none to sigh, when, like a shroud,  
The banner of Night proclaimed her victory won?

Yet through that reign of seeming death, so long  
To our imperfect ken, the marvellous force  
Which means to ends adjusts in Nature's plan  
Was bringing to the birth that eye of man  
Which now, O Sun, surveys thy farthest course, —  
A speck amid the countless starry throng.

JOHN READE.

## NOTES ON THE GEOLOGY OF THE TROAD.

*A brief summary of the results derived from the observations made in connection with the Assos expedition.*

THE terranes of the Troadic peninsula comprise a variety of stratified and massive or eruptive rocks. The former, excepting the most recent deposits, which are not considered in this connection, may be divided into three groups, according to their mineralogical conditions and geological age.

The most ancient group is highly crystallized, and, in all probability, belongs to the mica-schist zone of the 'grundgebirge' or archæan formation.

The youngest group, embracing the miocene and pliocene tertiary deposits, is, in part at least, well characterized by its fossils. The middle group is not defined, excepting by the widely separated limits of the other two groups. It embraces rocks which may be paleozoic or pre-paleozoic, as well as others which are probably of cretaceous and eocene age.

The crystalline schists have their greatest development in Mount Ida, of which they form almost the entire mass. They are of many varieties, all conformably interstratified, as if all belonged to the same great terrane.

True gneisses are not abundant, and occur chiefly upon the north side of Mount Ida, under such conditions that they appear to overlie the

schistose rocks. In Hagi ouldburen-dagh the mica is in large part replaced by hornblende, so that the gneiss has a somewhat dioritic aspect.

In the schistose rocks, chiefly amphibolites, hornblende is one of the most widely distributed and abundant minerals. It generally appears as actinolite, and not infrequently constitutes almost the whole of the rock in which it occurs. With amphibole, at times, are associated, besides plagioclase, more or less quartz, epidote, magnetite, titanite, and rutile. True mica-schists are of less common occurrence interstratified with the amphibolites.

Near the centre of Mount Ida, the oldest rocks crop out; and among them are talc-schists, which, by the gradual addition of olivine, pass into small lens-shaped masses composed almost exclusively of the latter mineral. According to the nomenclature of Brogger, this rock should be called olivine-schist. By alteration it gives rise to serpentine with the characteristic reticulated structure which ever marks the serpentine derived from olivine. Occasionally the fibrous serpentine forms veins of considerable size in the adjacent rocks.

The olivine-schist, where purest, has no schistose structure. The passage from talc-schist, in which no olivine occurs, to that composed almost completely of olivine, takes place sometimes within a short distance. The chief mass of the rock, however, is a middle stage between the two extremes, having a distinct schistose structure, and composed for the most part of olivine and talc, besides considerable quantities of pyroxene, as well as other minerals not yet determined. At various intervals throughout the zone of schistose rocks, occur rather coarsely crystalline white limestones.

The structure of Mount Ida is a comparatively simple anticlinal, with so short an axis extending east and west that the upper portion of the mountain is approximately a dome.

The highly crystalline stratified rocks are perhaps the chief topographical determinants of that region. Their position and distribution indicate, that, in the early stages of its development, the peninsula of the Troad was represented by several islands, which furnished much of the detritus for subsequent formations.

The rocks of the middle zone are for the most part semi-crystalline limestones, a very ferruginous quartzite, together with greenish,