

are nearly always lighted up by the gorgeous lustre of the Aurora ; called Borealis or Australis, according to the pole at which it is produced. The gradation of the phenomenon is nearly in this wise :—the sky assumes a tint of brown, on which, as a background, is soon developed a nebulous segment, bordered by a more spacious arc of blinding whiteness, which seems agitated by a kind of effervescence. From this arc shafts and rays of light shoot upwards to the zenith. These luminous sheaves pass through all the colours of the rainbow ; from violet and sapphire to green and purple-red. Sometimes the columns of light issue from the resplendent arch mixed with blackish rays ; sometimes they rise simultaneously at different points of the horizon, and unite to form a sea of flame pervaded by rapid undulations. On other occasions, fiery dazzling standards are unfurled, to float lightly in the air. A kind of canopy, of soft and tranquil light, which is known as the *corona*, announces the close of the phenomenon. Thereupon the luminous shafts begin to wane in splendour, the richly coloured arcs dissolve, die out, and soon of all the magnificent spectacle nothing remains but a whitish cloudy haze at those points of the heaven which, but a few minutes ago, blazed with the mysterious fires of the Aurora Borealis.

[The *arch* of the Aurora is only part of a ring of light, which is elevated considerably above the surface of our globe, and whose centre is situated in the vicinity of the pole. It is easy, then, to account for the different aspects it presents to observers placed at different angles to it. A person some degrees *south* of the ring would necessarily see only a very small arc of it towards the north, from the interposition of the earth between him and the observer ; if he stood nearer the north, the arch would appear larger and higher ; if immediately below it, he would see it apparently traversing the zenith ; or if within the ring, and still further north, he would suppose it to culminate in the south. It is supposed that the centre of the ring corresponds with the magnetic north pole, in the island of Boothia Felix.

The phenomenon generally lasts several hours, and is frequently diversified by peculiar features ; so that sometimes it seems to present the hemispherical segment of a gigantic wheel ; sometimes it waves and droops like a rich tapestry of coloured light, in a thousand prismatic folds ; and, at other times, it may be compared to a succession of resplendent banners, or streamers, waving in the dark and intense sky.

The arch varies in elevation, but is seldom found more than ninety miles above the terrestrial surface. Its diameter must be enormous, for it has been known to extend from Italy to the polar regions, and has been simultaneously visible in Sardinia, Connecticut, and New Orleans.

According to some authorities, the phenomenon is accompanied by noises which resemble the discharge of fireworks, or the crackling of silk when one piece is rolled over another ; but this statement is not confirmed by the experience of our ablest Arctic voyagers.

Of the magneto-electric origin of the Aurora no doubt can be entertained. When it occurs, the magnetic needle is invariably affected, the perturbation being greatest at the climax of the auroral brilliancy. The vertex of the arch is almost always in or near the magnetic meridian. The lights would seem to result from a discharge at or around the magnetic poles of electricity which has gradually accumulated round the magnetic poles.]