122 - COLOURS OF THE SKY

The colour we see in the sky results from the interaction between sunlight and the molecules of the earth's atmosphere. The latter scatter the rays, like a prism.

This scattering of solar radiation through a cloudless atmosphere affects to a much greater extent the most energetic parts of the light spectrum, which correspond to the blue colour perceived by our human vision. Blue is thus about six times more scattered than red.

Thus, during the day, the sky is blue because the molecules of gases in the air scatter mostly the blue of the sunlight. In contrast, a cloud, which is made up of suspended water droplets, scatters all parts of the spectrum more or less equally, and thus appears to us as beautiful achromatic white. When the sun is low, its light passes through a layer of atmosphere a hundred times thicker than when it is overhead. Its rays then become strongly scattered and both blue and green diminish, leaving red to take over.

In other words, during the day the atmosphere scatters that blue colour of this light and the sky seems blue. In the evening, the sunlight is at a low angle and passes through a thicker layer of air. The atmosphere acts as a filter and the thicker it is, the more it stops the colours. The red colours, being less filtered, crosses however that barrier. That is why sunsets often seem more colourful than sunrises.

In the early morning the presence of dew tells us that the atmosphere at sunrise is cooler and that the air contains less water vapour. This means that the diffusion of sunlight is weaker and thus the sun's rays appear paler and less colourful. On the other hand, in the evening the air is charged with all the water from the evaporation caused by the heat of the sun during the day. This increases the scattering of sunlight, which changes to red tones. It is commonly said that the sky is on fire.

In Europe we can say that a red sunrise means that a high-pressure system, that is, good weather, is over. This also indicates that a low-pressure system is probably moving eastwards. On the other hand, a red sun in the morning can indicate that there is a lot of moisture in the air.

In conclusion, the saying "Red sky at night, sailor's delight; red sky in the morning, sailor's warning" makes sense. A French phrase goes « rouge le matin, chagrin; rouge le soir, espoir » (red in the morning, sorrow; red in the evening, hope). The Spanish equivalents are "Sol poniente el cielo grana, buen tiempo para mañana" and on the other hand "Cielo rojo a la alborada, cuidado que el tiempo se enfada”.
On that point, all seafarers agree.

Sometimes it is good seamanship to look at the sky to know if it is better to stay in port.

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