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A Science Service Feature

? WHY THE WEATHER ?

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WHERE THE AIR IS BLUE

A phenomenon of atmospheric optics that has been described innumerable times by travelers but very seldom discussed from a scientific standpoint is that observed in the Blue Grotto of Capri. We borrow the following description from the indispensable Herr Baedeker:

"The famous Blue Grotto is a cavern hollowed out by the waves in pre-historic times and now, owing to the sinking of the coast, half filled by the sea. The entrance is scarcely three feet in height and can be entered only by small boats. When the sun is shining outside the grotto is filled with an extraordinary blue light. The best light is between 11 and 1 o'clock; summer is the best season. Objects in the water have a silvery appearance. For a few lire a boy usually offers to bathe in order to show this effect, but the visitor may make the experiment with his own arm. In antiquity the grotto was accessible from the sea by a second opening, to the right of the entrance, inside the cave; by this means the cave is filled with light, which assumes its blue color as it passes through the water."

Why does the light become blue? Probably because the water contains in suspension particles of solid matter so small as to scatter an excess of blue light as compared with light of longer wave-lengths, and the cavern is illuminated mainly by this scattered light. Objects immersed in the water are probably in the direct path of the light entering from outside; they thus reflect light of all wave-lengths and appear white.

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