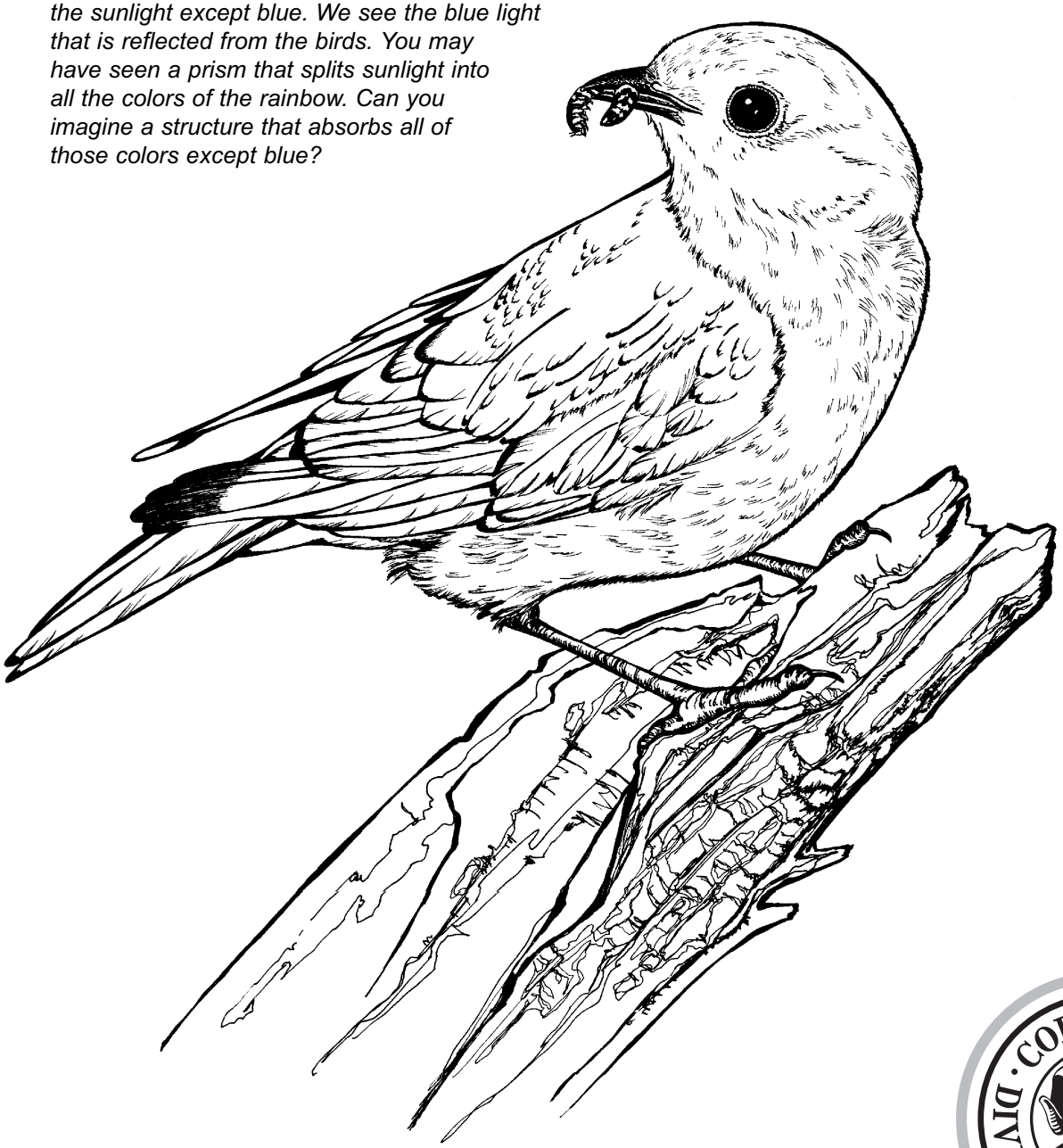
Blue in the Sunshine, Gray in the Shadow

In the sunlight, the male mountain bluebird is a breathtaking azure blue. When he moves into the shadows, he seems to turn gray. The female mountain bluebird is bluish-gray with brighter blue on the wing tips and tail. She also becomes dull gray in the shade. What happens to the blue when these birds move out of the sun? Are mountain bluebirds like chameleons that change color with their surroundings? Surprisingly, the bluebirds are not changing color. If truth be told, they don't have much color to begin with—they actually are a dull gray. The blue that is seen in the sunshine is not from pigment, but is caused by special structures on the feathers that reflect and scatter light. The feathers absorb all the colors in the sunlight except blue. We see the blue light that is reflected from the birds. You may have seen a prism that splits sunlight into all the colors of the rainbow. Can you imagine a structure that absorbs all of those colors except blue?



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