

Nature Note - The Colors of Nature

Have you ever wondered what causes the cardinal to be red, the bluebird blue or the ruby-throated hummingbird to be iridescent scarlet and emerald green? The brilliant feather coloration of these birds results from the interaction of several different factors.

Feather color may be caused by the pigment present in the feather and the specific wave lengths of light it absorbs. The color we see is determined by the wave length of light reflected by the pigment. The attractive red feathers of our state bird, the cardinal, are the result of a pigment called zoonerythrin. Although zoonerythrin reflects red light in cardinals, in its various other forms this pigment reflects the bright yellows of canaries, the oranges of orioles, as well as combinations of these colors in other birds.



Steve Shaluta

Scarlet tanager



Ron Snow

Indigo bunting

On the other hand, the blue of the bluebird is not the direct result of a pigment. Blue coloration in birds results from a scattered reflection of blue light within the structure of the feather itself. The sky derives its blue color from the same scattering phenomenon which occurs in the earth's atmosphere.

The shimmering iridescence of our jewel-like hummingbird is also the

result of an unusual type of feather structure. This structure interferes with the light rays striking feathers from different angles. Thus, the light rays are scattered, producing the brilliant greens and reds seen in hummingbirds. This same phenomenon produces the colors seen on soap bubbles and the rainbow seen when oil is mixed with water.



Ron Snow

Ruby-throated hummingbird