



Mineral of the Holidays – Turkey-Fat Ore

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You do not need to eat turkey for the holidays to appreciate this mineral! “Turkey-fat ore” is an old name for a variety of Smithsonite (also called zinc spar). The typical habit is earthy botryoidal masses. The name alludes to the mineral’s resemblance to turkey fat in color and form. It is usually bright yellow because of the inclusion of cadmium sulfide, although the presence of cadmium isn’t necessary for the name to apply.



Smithsonite is a zinc carbonate (a mineral ore of zinc) with the chemical formula $ZnCO_3$. In mineralogy, the term "carbonate" can refer both to carbonate minerals and carbonate rock (which is mainly composed of carbonate minerals), and both are dominated by the carbonate ion, CO_3^{2-} . Smithsonite has a Mohs hardness of 4.5 and a specific gravity of 4.4 to 4.5.

Smithsonite was originally identified with Hemimorphite. The two minerals are very similar in appearance. The term “calamine” was used for both minerals until it was realized that they are two distinct minerals. Smithsonite was named in 1832 by French mineralogist and geologist Francois Sulpice Beudant (1787-1850) in honor of English mineralogist and chemist James Smithson (1765-1829), who first identified the mineral in 1802. (Smithson’s bequest established the Smithsonian Institution.)

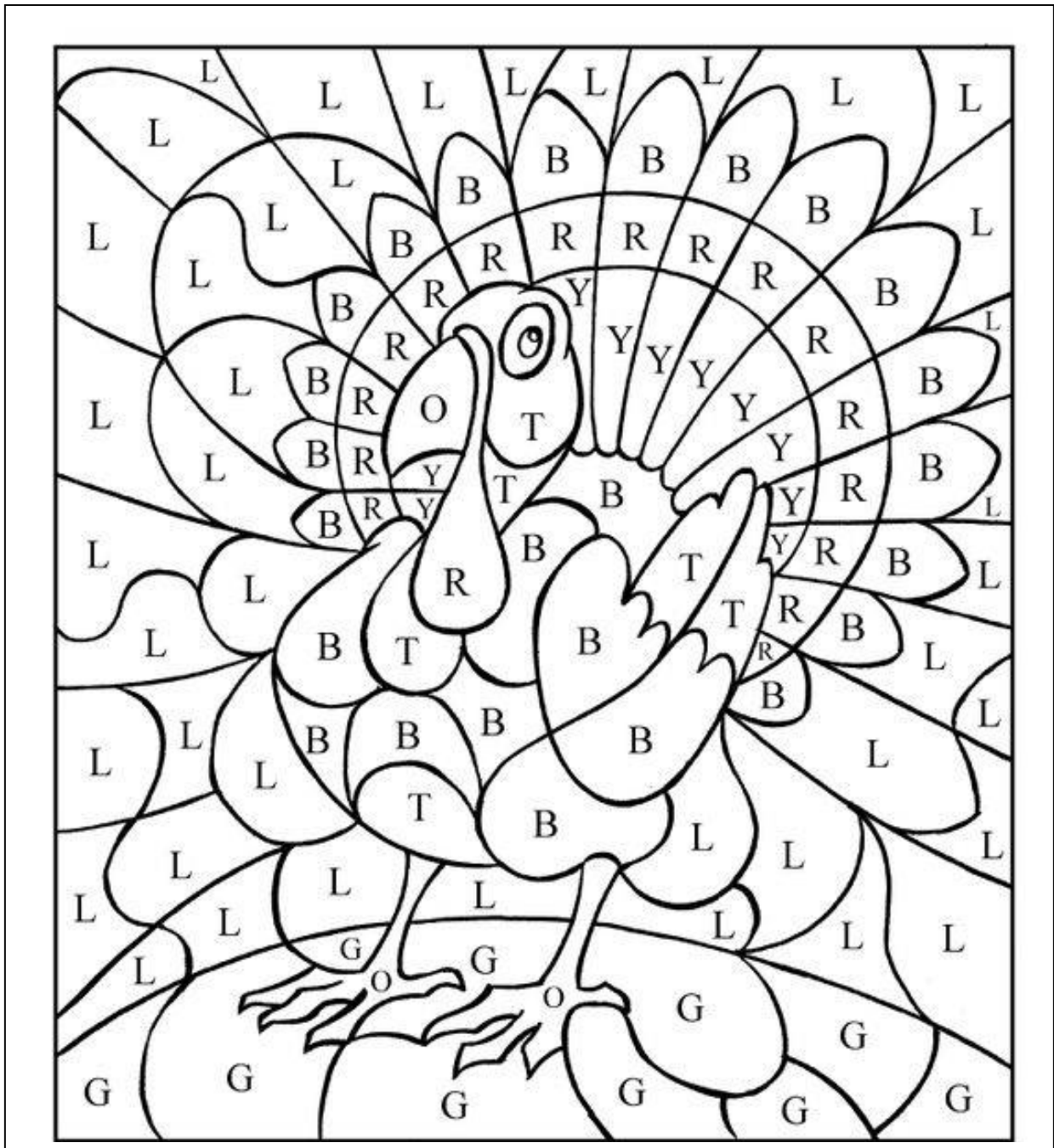
Smithsonite is a variably-colored trigonal mineral that only rarely is found in well-formed crystals. It occurs as a secondary mineral in the weathering or oxidation zone of zinc-bearing ore deposits. It sometimes occurs as replacement bodies in carbonate rocks and as such may constitute zinc ore. It commonly occurs in association with Hemimorphite, Willemite, Hydrozincite, Cerussite, Malachite, Azurite, Aurichalcite and Anglesite. It forms two limited solid solution series, with substitution of manganese leading to Rhodochrosite, and with iron, leading to Siderite.

When it shows good translucent green coloring or attractive banding, Smithsonite is polished and used as an ornamental stone. In jewelry making, yellow-colored stones are rarely faceted but massive forms are cut into cabochons. In industry, zinc is extracted from Smithsonite, and it is of interest to collectors and scientists concerned with the study of mineral deposits. And casual collectors enjoy its beautiful botryoidal form!

References: Wikipedia, mindat.org, webmineral.com

Turkey Color Challenge

Can you figure out which colors to use from the key below?



B = Smoky Quartz

G = Emerald

L = Aquamarine

O = Imperial Topaz

R = Ruby

T = Sand

Y = Smithsonite