

Sapphire from Montana's Secondary Deposits, Colombian Emerald Morphology, the 2023 Tucson Shows, and More...



Welcome to the Spring 2023 issue of *Gems & Gemology*! A new volume year kicks off with our recap of the Tucson gem shows, where buyers, sellers, and industry professionals from all over the globe converge. And with two major feature articles, our regular sections, and the annual *G&G* Challenge, this issue is sure to captivate readers.

In our lead article, Dr. Aaron Palke and coauthors present their study of the gemological characteristics of sapphire from Montana's secondary deposits. Using Rock Creek, Missouri River, and Dry Cottonwood Creek samples in a variety of colors, the authors provide

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typical inclusion scenes and trace element chemistry fingerprints. The article also details the fascinating history of sapphire mining in these three Montana mining districts, which still hold substantial resources.

Next, Dr. Karl Schmetzer and Gérard Martayan investigate the less common morphological and growth phenomena of Colombian emerald samples to understand their growth and post-growth history. Based on their observation of 15 isolated emerald crystals and seven specimens in matrix using optical methods, they offer insight into the different patterns, with a goal of expanding the database of morphological features in Colombian emerald.

Our regular features provide informative snapshots, beginning with *Lab Notes*. Highlights from the section include a rare example of the purple collector gem anhydrite, a heart-shaped golden South Sea cultured pearl displaying natural shape and color, and the largest sample of synthetic rutile examined at GIA to date. Explore the inner landscapes of gemstones in our *Micro-World* section, where you'll see rare cloud inclusions resembling a starry night in diamond, a macroscopic mineral inclusion cluster in a Pakistani aquamarine crystal, a three-phase inclusion in alexandrite, and more. *Diamond Reflections* returns in this issue, this time exploring plastic deformation in diamond. Our *Gem News International* section begins with nearly 30 pages covering the 2023 Tucson gem shows, ranging from the latest trends and market updates to noteworthy designs, followed by an opulent photo gallery packed with finds from the shows. The GNI regular features include various pearl discoveries from around the world and a new source of ruby from Liberia.

Finally, test your gemological knowledge of our 2022 feature articles in the annual *G&G* Challenge, and find out which articles received the Dr. Edward J. Gübelin Most Valuable Article Award.

We hope you enjoy the latest issue of *Gems & Gemology*!

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