Profile with **Tyler Thrasher**, Artist and Chemist, Tulsa, Oklahoma

Thinking Outside the (Chemistry) Book

ABOUT THREE YEARS AGO, AS TYLER THRASHER WAS finishing a college degree in computer animation, he decided that he didn't want to be a computer animator. In his eyes, the field had lost its appeal, and he wanted to be a freelance artist.

"I remember scrambling to find some new artistic expression," he says. "In a moment of desperation, I was like, what do I want to do?"

For inspiration, he flipped through his notebooks, in which he had been sketching objects that fascinated him. His caving excursions exposed him to sparkling minerals, and led him to produce crystal drawings. The gift of a sketchbook with tan-colored pages prompted him to draw monochromatic insects.

"And it hit me," he says. "I know how to grow crystals. It's simple chemistry; I remember that from high school. And I was like, could I possibly grow crystals on bugs?"

He Googled the idea and didn't get any hits. He scoured scientific literature to find information on growing crystals on insects, but didn't find much. So he did what any enterprising chemist would do: He started to experiment. Thrasher collected some cicada shells on a hike, and ordered 5 pounds of copper(II) sulfate ($CuSO_4$), which he recalled from high school as being a vivid blue color. He put a cicada shell in a solution of copper(II) sulfate.

"The next morning I woke up, and saw it sitting there: Crystals growing out of a shell," he says. "I freaked out. I had never seen anything like it."

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Thrasher was hooked. Now he experiments with materials, in small quantities at first, to create different crystals on little dead hosts, including beetles, scorpions, and small animal skulls. The crystals grow in beautiful hues, from calming pinks to intense violets.

What started as an experiment to satisfy Thrasher's curiosity unexpectedly transformed into his artistic medium.

—Christine Suh

"Q&A"

Q: How did you become interested in chemistry?

A: The only reason I took an AP chemistry class was because I had a bunch of friends who told me I wouldn't be able to pass it. So I was like I'm going to take AP chemistry. Took it. Fell in love with chemistry. I don't know why; it just made sense to my brain. I was also doing a lot of art at the time. I always looked at chemistry as one of the more creative schools of science. It felt like there's all this room to expand upon scientific study. I fell in love with that.

Q: Do you have a favorite crystal?

A: I'm having a lot of fun with zinc sulfate monohydrate ($ZnSO_4 \cdot H_2O$) and ammonium sulfate ($(NH_4)_2SO_4$). Both are fertilizers. If you mix zinc sulfate with ammonium sulfate, you get zinc ammonium sulfate ($Zn(NH_4)_2(SO_4)_2$), which is a Tutton's salt [a double salt with two different cations]. It forms these clear crystals. And if I prepare a solution and add a seed crystal, the entire container can be covered in crystals in a matter of hours.

Q: Do you have any advice for high school chemistry students?

A: I would just say, take it outside of the book. Chemistry is going to be boring if you're memorizing a bunch of equations. Think about how you can take that information and do stuff on your own. If you want a deeper appreciation of chemistry, look at the periodic table as building blocks. Do experiments. Don't do anything stupid. Take your creative energy and look at the principles of chemistry as paint brushes. You're using your paint brushes. That's one of the better ways to appreciate chemistry.

Read the full Q&A online: www.acs.org/chemmatters.

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