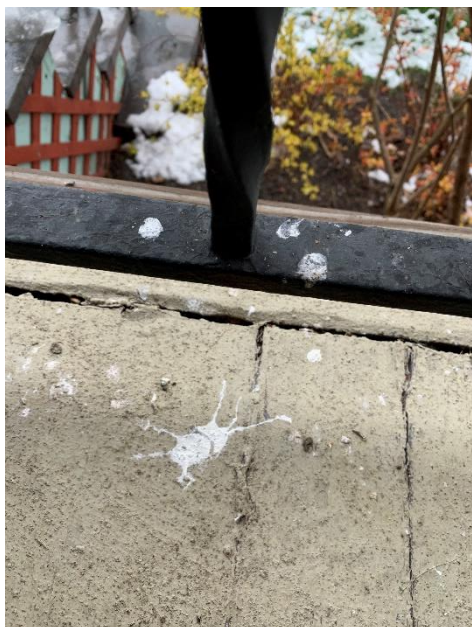


Chemistry Outside My Door

In this laboratory you will take three pictures. For each picture you will associate it with a specific chemical process. Explain the connection between the picture and chemistry.

Here is a sample entry. Some ideas include photosynthesis, colors, oxidation (rust) , decay.

Bird Guano

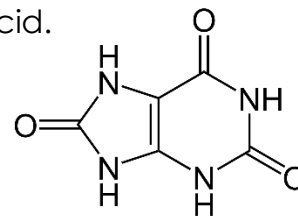


In this picture you see blotches of white. These are bird droppings (poop). I wondered why birds produce white poop. I googled it and found this website:

<https://petcentral.chewy.com/all-you-ever-wanted-to-know-about-bird-poop/>

I found out that the white poop isn't poop at all. It is urates coming from the kidneys. The urates result from protein break down and are unique to birds and reptiles. (I also learned there are other types of bird poop – green – but I am concentrating on the white stuff.)

So, urates are salts formed from uric acid.



I learned that bird poop is called

guano and is 80% uric acid.

"Bird guano has high levels of nutrients like nitrate and ammonium. By mass, it is 8–21% nitrogen; the nitrogen content is about 80% [uric acid](#), 10% protein, 7% ammonia, and 0.5% nitrate.^[1] Some of bird guano's most common chemical elements are phosphorus, calcium, and magnesium." Wikipedia.

I had always thought that there was more phosphorus in bird guano but now I know it is mostly uric acid, $C_5H_4N_4O_3$.

I hope you enjoy this assignment. Chemistry is everywhere and part of everything around you. Each entry should have one picture, at least one citation from an online source, a couple of paragraphs of explanation, and at least one chemical structure or chemical reaction.