

36-149 Writing Assignment #9 Due Thu 9 Nov 2006

Many mushrooms are known to be poisonous, some lethally so for humans. And yet it can be difficult for us to distinguish between the poisonous and non-poisonous species. Some pairings look so similar that even experienced collectors can be misled. (Like the French chef who had gathered mushrooms in his yard for years but one day by mistake made a highly toxic soup for his entire family.)

From an evolutionary perspective, we might expect an organism that goes to the trouble of developing toxins to advertise that fact. Why do the damage to a predator after you've been eaten? Thus the bright colors of poison arrow frogs or coral snakes.

Consider the following questions:

1. Do we have reason to believe that mushrooms' toxins are evolutionary adaptations?
2. Why might these toxins have evolved?
3. Why do the mushrooms appear not to be advertising their toxins?

Might they be and we are not aware of it? What would explain this? How might you test your ideas?

Can you find another evolutionary mystery like this and address the questions raised by the mystery in a similar way?