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A BIG BOOK OF POISON

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WHEN VENOM HELPS

There's something as too much of a good thing. Even the sweet, delicious chocolate can make you sick if you eat lots of it. And vice versa, the things that are generally dangerous can be safe in small doses, even helpful. For example, a small amount of poison contained in some plants can be a very effective medicine. People have noticed this and began producing these "helpful poisons" artificially, storing them in boxes and bottles. And then we come pick them up at a pharmacy, like whenever we have a stomach ache after indulging in too much chocolate.



COMMON FOXGLOVE

Two leaves of this beautiful blossoming plant are enough to kill an adult person. Provided that this person is stupid enough to eat them despite them being so bitter as to be inedible. That's how powerful the common foxglove is. But when experts, laboratory technicians, chemists, physicians, and pharmacists get their hands on it, it becomes a sought-after medicinal drug that treats heart disease.

POPPY

Forget about cakes and pies. Poppy is a plant. From time immemorial, people have known that the juice of unripe poppy heads eases pain and insomnia. Today we know that this substance, called opium, can be very dangerous and addictive. But it can be taken apart in a laboratory, like a puzzle, and reduced to its individual ingredients, one of them being morphine. Morphine is used for making medicinal drugs which relieve seriously ill or injured people from pain.



AUTUMN CROCUS

Do you know what the autumn crocus and a swollen toe joint have in common? The beautiful plant with purple blossoms can help the toe. It contains a highly toxic substance called colchicine, used for producing medicine to treat the disease known as gout. This is where our story comes full circle because if you suffer from gout, you have hot swollen joints. And the big toe is where things usually begin.



SWALLOW WART

"That's just weed, and toxic one at that," you might think. But lo and behold, it can be pretty useful. Swallow warts help treat a sick liver, gall bladder, or kidneys. It can also deal with warts and corns — not the plant, but a painful ingrown callus on your foot. And there's so much more the swallow wart can do. Europeans respected the plant so much they moved it to America in the 17th century. It's been infesting the local gardens ever since.

DOCTOR

Doctors encounter venom as early as in school, at pharmacology lessons. What's pharmacology, you ask? It's a subject where future physicians learn about medicines. There they learn how much venom still helps and when it could start harming the patient; which medicine treats which disease or how much of it is administered to adults and how much to children. And then the doctors have to pass an exam to make sure they remember all that.



PHARMACIST

Pharmacists are literally surrounded with poisons. Their heads are incredibly full of knowledge about all known categories of poisons. They know which poison does what and how you can find the antidote. When a patient whips up a prescription from a doctor, the pharmacist gives them a medicine, drops, or salve and advises the patient on using them in a way to make sure the drug won't be a poison that kills, but a "poison" that helps.

HERPETOLOGIST

What's that thing slithering over here? A snake of some kind? If we had a herpetologist around, we'd know; not only what species it is, but also whether it's venomous or not. That's because herpetologists are experts who are well-versed in all types of reptiles, from adorable little turtles to venomous snakes. They can teach you not to mistake the harmless king snake with the venomous coral snake, or how to tell apart the safe grass snake and a venomous viper.







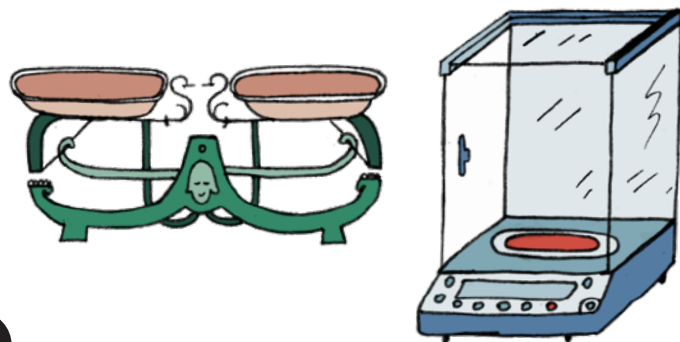
LABORATORY TECHNICIAN

Should you pour the poisonous sulphuric acid into water, or the water into the acid? Lab techs don't wonder about these things, lab techs know! Of course you should pour the acid into the water. If you did it the other way, the water would become too hot and the poisonous liquid could squirt out, injuring someone. And any good lab tech also has to know how much they should dilute the acid so that it can be safely added, for example, to a cola drink.



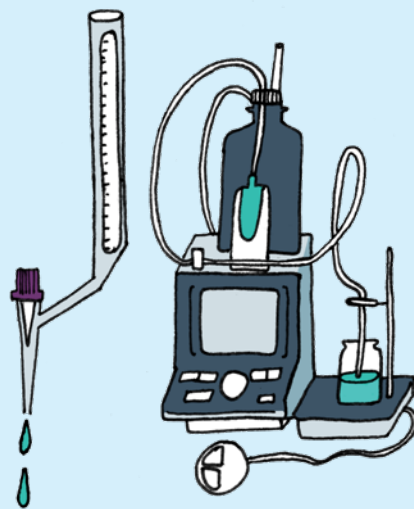
SCALES

So now you know that some poisons can be administered only, as people say, "at the tip of a knife". Meaning that no more poison can be used than as much as can fit on the tip of a knife. And you already know that certain amounts of poison are enough to kill an elephant. That's why all laboratories need a pair of scales. The most accurate ones are called strain-gauge scales.



PIPETTE

Pipettes make lab techs feel like a butterfly sitting on a flower—they, too, suck things up. But while a butterfly enjoys a delicious nectar, a lab tech mustn't taste the solution being pipetted, under any circumstances. What if it's something poisonous? That's why they use a balloon to suck the solution up and into the tool, or use an automatic pipette which sort of looks like a large injection needle.



BURETTE

Drop, drop, drop, and stop! This is the exact moment when a red solution turns yellow. When a chemist titrates, they need to accurately measure how much liquid was used before the solution in a beaker changed colour. To do this, they use a burette, a cousin of pipette. There's also a mount and stopcock which allows only as many drops to fall as necessary.



DESICCATOR

No, this isn't the mug where water goblins imprison lost souls. It's a dryer for substances which would never dry up when left to air-dry. Not everything can be treated like laundry. To make something dry, you put a powder or balls of chemicals into the bottom part of the desiccator; these can extract every single drop of the substance you pour into the container's second level.



BURNER

What's a burner good for? For experimenting with sulphur, among other things. When you put yellow powdered sulphur into a test tube, melt it above the burner, and then pour it into cold water, the powder will turn into a flat substance that can be stretched like silly putty. By the way, this isn't the only thing sulphur can do. It isn't poisonous in and of itself, but when it starts palling around with other elements, it can be pretty dangerous.

TEST TUBES

No quick experiment can be done without them. When corked up, they can briefly preserve rare chemical or biological samples. Most importantly, chemists use only the sturdiest test tubes there are — ones made from glass which can withstand boiling, that is temperatures of up to 100 degrees Celsius. Such test tubes can easily hold even poisonous, corrosive substances.

PROTECTIVE GLOVES, COAT, AND GLASSES

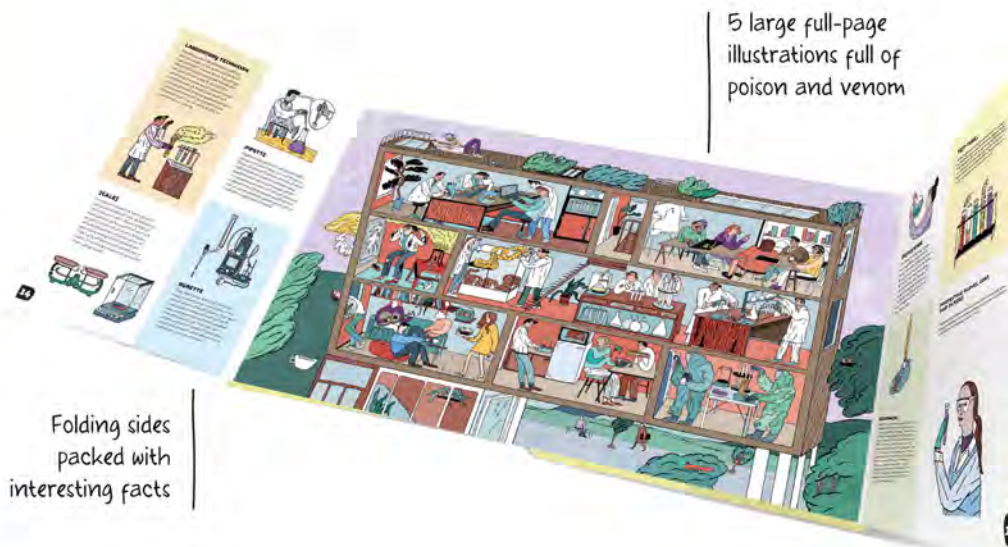
These are the indispensable tools of any lab tech, especially when doing something where there's a danger of a poisonous substance squirting out or dripping, causing a burn.



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Have you ever wondered what venom is, how it's made and why or where it comes from and what it does? It poisons, you say? Sure, people should definitely respect venom. But did you know that when administered in small doses it can heal you or relieve your pain, provided you know how to go about it? Some animals need venom in order to protect themselves against hostile environments. If they weren't venomous, their time on this Earth would be short-lived, indeed. So who and what is venomous, a little bit or a lot? And why do plants use venom? No idea? Well, in that case get engrossed in this book — you'll learn in no time. But watch out! Proceed at your own risk!



5 large full-page
illustrations full of
poison and venom

Folding sides
packed with
interesting facts

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⚠ WARNING: CHOKING HAZARD –
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