

## Maigret's zinc phosphide challenge

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*In the present challenge, phosphide is the topic. And please note that there is a prize to be won (a Springer book of your choice up to a value of €100, given to one winner selected randomly). Please read on...*

### Meet the challenge

If Sherlock Holmes is England's most famous fictional detective, then there is little doubt that Inspector Maigret holds a similar place of honor with respect to French detective fiction. Maigret was the brainchild of the Belgian-born author, George Simenon, who, between 1931 and 1972, would write 75 novellas and 28 short stories featuring his creation (Fig. 1). Unlike Sherlock Holmes, who is depicted as a gaunt, unmarried, highly eccentric, private detective, Maigret is normality itself. Though gruff, he is a happily married, middle-aged, police inspector, with a paunch and an addiction to pipe smoking, who, in the course of his investigations, is constantly dropping into the nearest convenient cafe or bar for a beer and something to eat. Of the many Maigret novellas, the one of most interest to the chemist is entitled *Les scrupules de Maigret*. First published

in 1958, it has since been translated into English under the title of *Maigret's Doubts* [1].

The story opens on a slow January morning at the *Quai des Orfèvres* or police headquarters when Maigret's clerk announces that there is a man demanding to see him. The visitor is named Xavier Marton, and after a long rambling introductory monolog during which he repeatedly claims that he is perfectly sane, he finally comes to the point of his visit:

*I am convinced that for several months, five or six at least, my wife has been planning to kill me...*

He further claims that she intends to poison him, and to prove his accusation, he produces:

*... a folded paper of the kind in which some pharmacists still put headache powders. The paper did contain powder, a powder of a dirty white color.*

Marton goes on to explain that he will leave Maigret:

*... this specimen, which you can send for analysis. Before coming to you, I asked for it to be analyzed by a salesman at the Louvre who is a passionate chemist and who has set up a real laboratory. He was categorical. It is white phosphide. Not phosphate, as you might think, but phosphide. I checked in the dictionary. And not just Larousse. I also consulted textbooks on chemistry. White phosphide is an almost colorless powder, which is extremely toxic.*

Only then does Marton make it clear that the phosphide he is referring to is the compound zinc phosphide (or *phosphure de zinc* in French), and tell Maigret that he has found a bottle of this substance in his wife's broom closet:

*I didn't find just a few grams at home, but a bottle containing at least fifty grams. And I happened upon it by chance.*

At this point, Maigret is called away to the Commissioner's office on business. Though he tells Marton to wait, as he will be back in a few minutes, Marton is gone when Maigret returns.

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**Fig. 1** George Simenon (1903–1989). As is apparent from the wall behind Simenon, he shared Maigret’s addiction to pipe smoking. Photo by Erling Mandelmann (1963, Wikimedia commons)

## The challenge

Disturbed by the interview, Maigret contacts the psychiatrist mentioned by Marton during his preliminary ramble about his sanity, as he wants to know how seriously to take Marton’s story. Is he normal or is he a psychotic madman with delusions of persecution? However, the psychiatrist is not forthcoming for reasons of patient privacy, so over the lunch hour Maigret seeks advice from his family physician, Dr. Pardon, who is also a close friend:

**Maigret:** *He told me that his wife has been trying to kill him for some time.*

**Pardon:** *How did he become aware of that?*

**Maigret:** *He left before he could give me any details. From what I can tell, hidden in a cupboard for brooms and cleaning products he found a little bottle contain-*

*ing a considerable quantity of zinc phosphide ... He was the one who analyzed the product and he seems to have carried out an in-depth study of zinc phosphide. He even brought me a sample.*

**Pardon:** *Do you want to know if it is a poison?*

**Maigret:** *I assume it’s a toxic product.*

**Pardon:** *Very toxic. In some areas it’s used to kill voles.*

Later that afternoon, Madame Marton also makes an appearance in Maigret’s office. She has come to warn him that her husband is becoming increasingly delusional and that his story should be taken with a grain of salt. Indeed, she claims that he is trying to poison her, rather than the other way around. When Maigret questions her about the bottle of zinc phosphide, she explains that she obtained it in order to kill rats in their building.

At the end of the novella, the police are called to the Marton home, where they find Xavier dead from zinc phosphide poisoning, it having been administered in a cup of herbal tea prepared by his sister-in-law—by accident as it turns out, since his suspicious wife had interchanged their cups of tea before drinking it.

*Can you spot any chemical errors in Simenon’s otherwise entertaining novella?*

## Declarations

**Conflict of interest** The authors declare no competing interests.

## Reference

1. Simenon G. *Les scrupules de Maigret*. Paris: Presses de la Cité; 1958. Translated as *Maigret’s Doubts*. London: Penguin Books; 2018.

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*The next Analytical Challenge will be published in 415/01, January 2023. If you have enjoyed solving this Analytical Challenge, you are invited to try the previous puzzles on the ABC homepage.*