

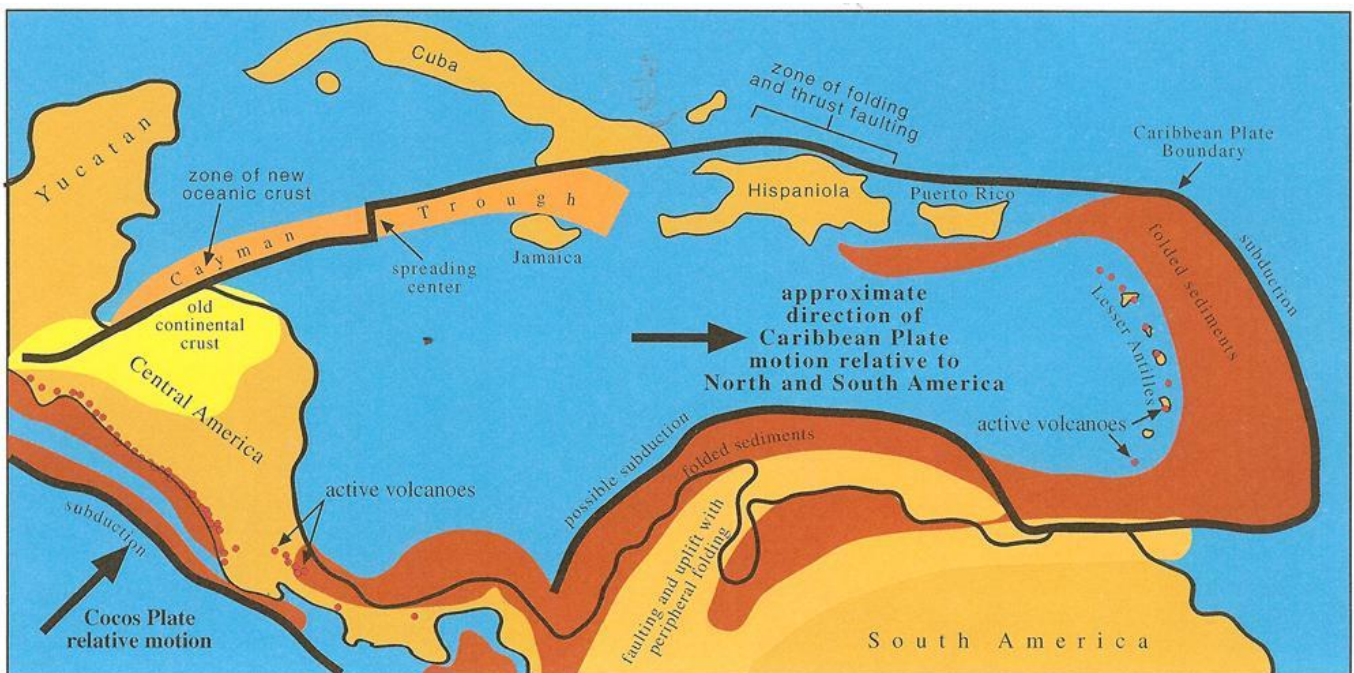
Thème 1 – La Terre dans l'Univers, la vie, l'évolution du vivant

1-B – Le domaine continental et sa dynamique

The eruption of Mt Pelée.

Using your knowledge and the documents, you will explain why the Mt Pelée eruption was so devastating in 1902. Did the city of St Pierre recover? Give some reasons.

Document 1: Central America and the Caribbean tectonic map.



Source: <http://academic.emporia.edu/aberjame/student/unruh1/webpage.html>

Document 2: Focus on Martinique.

The Lesser Antilles are a long, partly volcanic island arc between the Greater Antilles to the north-west and the continent of South America. The islands form the eastern boundary of the Caribbean Sea with the Atlantic Ocean. Martinique is an insular region of France located in the Lesser Antilles.

St Pierre now has a population of 4,341 inhabitants.



Turn over, please →

Document 3: The eruption.

3a. A witness report.

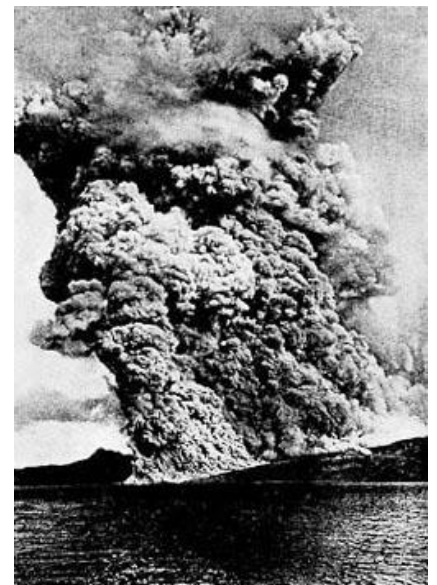
A young shoemaker, Léon Compere-Léandre, was sitting on his doorstep when the *nuée ardente* hit. Although he was severely burnt he survived, partly because of his good health, but also because his house was near the edge of the pyroclastic flow. Here is his experience, in his own words:

5 *"I felt a terrible wind blowing, the earth began to tremble, and the sky suddenly became dark. I turned to go*
into the house, with great difficulty climbed the three or four steps that separated me from my room, and felt my
arms and legs burning, also my body. I dropped upon a table. At this moment four others sought refuge in my
room, crying and writhing with pain, although their garments showed no sign of having been touched by flame. At the
end of 10 minutes one of these, the young Delavaud girl, aged about 10 years, fell dead; the others left. I got up
and went to another room, where I found the father Delavaud, still clothed and lying on the bed, dead. He was
10 *purple and inflated, but the clothing was intact. Crazy and almost overcome, I threw myself on a bed, inert and*
awaiting death. My senses returned to me in perhaps an hour, when I beheld the roof burning. With sufficient
strength left, my legs bleeding and covered with burns, I ran to Fonds-Saint-Denis, six kilometers from St. Pierre."

Sources: http://www.geology.sdsu.edu/how_volcanoes_work/Pelee.html

3b. The glowing cloud or *nuée ardente*.

In the early spring of 1902, Vulcanian activity began. The crater atop Mont Pelée began filling with extremely viscous magma. The extraordinarily sticky magma kept plugging the crater. Late April, it was obvious to most people that this problem might get bigger. At a little past
5 noon on 5 May, a large pyroclastic flow sped down the Rivière Blanche, destroying the sugar mill and 40 people. This further increased the anxiety level in St. Pierre. But there was an election coming up on 10 May, and the governor did not want everyone scattered from the island's largest city because that would likely change the election results.
10 Governor Mouttet and his wife went to St Pierre and used the militia to preserve order and halt the exodus of fleeing people. Bad decision. There was no election on 10 May anyway; all the voters, including the governor, died on 8 May.



Source: Natural disasters from Patrick L. Abbott, ed McGraw/Hill (ninth edition, page 189).

Nuée ardente advancing down the flank of Mt. Pelée (8th May 1902).

Source: From Heilprin, 1908, The Eruption of Mt. Pelée: Philadelphia Geographic Society, 72 p.

Document 4: The remains of St. Pierre after the eruption on May 8, 1902.



**VOLCANO DESTROYS
WEST INDIAN TOWN**
St. Pierre, Martinique, Entirely Wiped Out.
DEAD MAY NUMBER 25,000
It is Said that All the Inhabitants of the Town Have Been Killed.

Source: From Heilprin, 1908, The eruption of Mt. Pelée: Philadelphia Geographic Society, 72 p.

Teacher's corner :

St Pierre is located close to a major active volcano: the Mount Pelée.
This volcano belongs to a volcanic arc in the lesser Antilles. Locate it on the map.
We can see that it is on a plate boundary in a subduction zone (convergent zone).
The North American plate is downgoing the Caribbean plate.

St Pierre was a very well-known city.
A lot of inhabitants (25,000). Very good climate, fashionable city...
All of them have been wiped out: compare the description of the city in the text and the picture.

You could have died from the eruption, the nuée ardente, or by the overheat air which burns everything especially your lungs inside (→ oedema). (Witness report)

In fact, you had been warned but it was a political decision. By the way, the governor and his wife also passed.
The city has never fully recovered and has been overwhelmed by Fort-de-France.

Other possible questions:

Would you like to live nearby a volcano? Why or why not?

→ population of 25,000 in 1902. 4,341 in St Pierre now.

Is this volcano dormant, inactive yet? ...More than a century after this last eruption...

Can you name other active volcanoes in Europe, in the world?...