

FRANCE

La Soufrière's first victim

Fierce disagreement characterised the debate amongst French scientists about La Soufrière, the volcano in Guadeloupe in the French Antilles. A report from La Recherche:

WHEN La Soufrière started to grumble in July 1975 the memory of the 30,000 victims who perished in the cloud of burning ash thrown out by Pelée Mountain in Martinique in 1902 made the question of evacuation particularly important. Some 72,000 people were living at the foot of La Soufrière, which is one of a group of volcanoes in the Caribbean island arc.

Its activity has been characterised by its andesitic nature, the relative viscosity of its magma, the long periods of calm between eruptions and particularly by the explosive nature that its eruptions can have. Although known eruptions (1797, 1836 and 1956) had produced only a slight rain of volcanic dust and released some steam, the authorities eventually did evacuate the local population as a preventative measure. But after a period of intense activity in July and August, the volcano seemed to quieten down again. Things should then have returned to normal; in fact the trouble had only just begun.

On October 27, the board of the Teaching and Research Unit (UER) of the Institute of Physics of the Globe (IPG) met to discuss with the Director of the Institute, M Allegre, the case of Haroun Tazieff, the famous French volcanologist. Allegre informed the board that he had decided to dismiss Tazieff (63) from his post as director of vulcanology at the IPG. Tazieff, he explained, had refused to guarantee that he would fulfil the commitments of the post, after being asked to do so several times and in particular at the beginning and end of August. That followed criticisms of Tazieff for going off to hunt for three Britons lost in the Andean Cordillera when 72,000 French people could have been in danger.

Although no vote was taken at the meeting those present unanimously approved the measure. As the IPG does not come under the administrative jurisdiction of the National Centre for Scientific Research (CNRS), Tazieff continued as a research director at CNRS; his team was anyway in the process of moving to Gif sur Yvette outside Paris to be on CNRS premises. The break with the IPG was complete, though, because Tazieff had no desire to remain any longer on its staff.

The episode marked the culmination of an unfortunate conflict between French scientists which had for several months taken precedence over the real problems confronting the people of Guadeloupe, already faced with considerable political, social and economic difficulties. The UER has given its official reasons for the dismissal of Tazieff, but some believe it may be the result of a quarrel which has been exacerbated by a series of petty disagreements over the differing interpretations of the phenomena observed on the volcano itself.

Tazieff's own somewhat strong words, which the press willingly echoed, started the quarrel and made it all the more bitter as time went on. In *Le Monde* (September 5) he declared that he "could expose the faulty reasoning which has led certain scientists not competent in vulcanology to put forward mistaken prognostications, which the volcano itself has proved wrong in the past six weeks, but I will only do so in a scientific journal." Five days later, there were even stronger words in the weekly *L'Aurore*: "Those who blocked my way are incompetent," he declared. "They are all perfectly competent in their own fields, but they should not try to interfere in vulcanology. If you have trouble with your liver you do not consult an ophthalmologist."

The confrontation deepened on the scientific plane. From July 1975 La Soufrière manifested an increasing number of the phenomena which have now died down again: a seismic shock in March, the appearance of new fractures, underground phreatic eruptions (in July), exceptional seismicity, stronger and more frequent eruptions (in August). Over this period, the number of seismic shocks registered rose from 30 in July 1975 to 209 in November, 607 in March this year, 1,220 in July and, in August, almost 6,000 tremors.

The scientific community agreed on these facts, but there was no unity about the diagnosis. On the one side, Professor Robert Brousse declared that he could no longer rule out the possibility of an explosive phase which could come very suddenly. John Tomblin of the University of Trinidad supported this viewpoint. On the other hand, Tazieff was more reassuring, saying that there was no need to fear a rapid development, and that the only risks for September were from the underground eruptions which endangered only the immediate vicinity



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of the volcano. "Any major eruption," he added, "will be preceded by warning signals for about a week."

On August 15, after a strong tremor of magnitude 4.6 shook Guadeloupe, the political authorities organised a massive evacuation of the population. Even though Allegre wished to hold a middle view between the two extremes, in effect he confirmed the alarmist views of Brousse when he sacked Tazieff, describing his statements as unscientific.

A committee of international experts met in Paris in the middle of last month, brought together by the CNRS to give its opinion on the surveillance programme for the volcano, its organisation, and the results obtained. During these meetings, members have been listening to the many French and international scientists who have been involved with La Soufrière.

It appears from the discussions that there is no danger in the short term of any sudden explosive phenomenon, and that all changes in the behaviour of the volcano should be easily registered by the modern instruments available. It is essential, the committee has noted, that the equipment at La Soufrière should be improved and reinforced. This means that the number of seismograph stations in the existing array should be increased from seven to about twenty, and that they should be set out around the circumference of the volcano. It was also agreed that magnetometers, tiltmeters and inclinometers should be installed.

The committee also advised that to utilise the installations best, a volcanologist and a petrologist should, as an experiment, be employed permanently in the area. They would look after the equipment, make daily observations and do regular analyses of the material thrown up by the volcano. This would avoid, the committee hoped, the danger of over-reacting when there were insufficient data. □