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Pyroclasts:
Who calls the tune?

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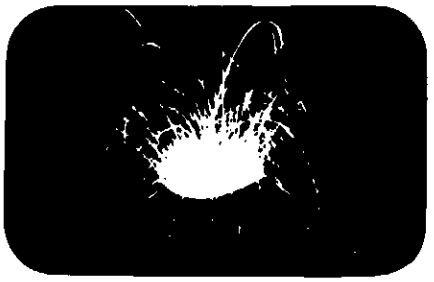

Pyroclasts

Who calls the tune?

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I just had a sleepless night, which isn't unusual for me — I am that kind of person. I read in the latest *Geoscience Canada* that Mike Church had his NSERC grant cut. Well ... no, that's not why I didn't sleep, much as I regret one of our best geomorphologists having to make do with less. Mike's news was closely followed by a visit yesterday to Queen's by one of his former classmates who is now an important government scientist. I presume he's important because he is forever talking to — sorry, advising — his Minister and the Prime Minister of Norway, who apparently takes great interest in Canada's environmental issues. There can be no doubt he is important since he was able to tell us that the environment is the issue of second highest priority on the agenda of our present government. We do need to be told these things which are far from obvious to the uninformed layman.

To return to the point, this official explained in no uncertain terms that the universities were just not "in the game".

"You just don't have the bucks, and I'm talking real money now."

The tragedy is that he's right, with the result that people doing good science are forced to work on a shoestring, while Government directed science is, relatively speaking, lavishly supported. We were presented with the solution. The universities should concentrate their efforts on "issues". A selection was offered: climatic change, ozone depletion, deforestation, toxicology of the Great Lakes, *etc.* We were encouraged, with the promise of megabucks, to work on such problems. I thought I had won a lottery.

"Please sir, please sir," hand waving madly in the air, "we can solve the deforestation problem if we stop cutting down trees." Unfortunately, deforestation is largely a policy rather than a scientific issue.

For a while NSERC got into the mission-oriented business with regard to operating grants. But, the Earth Science Grants Committee, at least, has not been much influenced by this directive. The Strategic Grants Program then took on the issue of issues. First identify an issue, throw a lot of money at it, change the issues every second year to maintain a high political profile, and then express displeasure with scientists because they achieved so little and let down the nation in its hour of need. Now our research is to depend on matching grants from industry and, if I am to believe our distinguished visitor, direct government financing rather than a peer-adjudicated grants program. I am reminded here of a maxim about pipers and tunes.

So the reason I didn't sleep was because I was reminded of my three years on a grants committee, with numerous site visits and the many bright people I came across who faced difficulty because of insufficient funding for equipment, assistance or field work in the remote parts of Canada. Although Mike Church's piece addressed the problem of how NSERC allocates the money it gets, the root cause of these difficulties is that there is just not enough money to go round. My immediate reaction to the message from the civil service was that things can only get worse. Fortunately, I am now assured by our civil servant that he can manage funds creatively and ensure that the money poured into government science is directed to worthy projects. I am most grateful. Now that this Colonel North of Science is taking on the responsibility of selecting projects and evaluating researchers, the total exhaustion I experienced after NSERC adjudication meetings, and for once I don't exaggerate, need not be inflicted on others. Yes, science will be in good hands, we were told, because Government science is the best science anyway, and the erosion of NSERC funding is inevitable given the poor research performance of the universities. It appears that this is a general opinion in government circles. Yet, the Prime Minister of Norway, a very intelligent and sensitive lady, does not seem to share this view, although another notable female Prime Minister in Europe is happily cutting back university research in favour of the private sector.

You will be pleased to know that I am sleeping better now, having accidentally unearthed a little known fact. Isaac Newton apparently received matching funds, to the tune of 20 guineas (they had real bucks then), from what is now the Apple Marketing Board (AMB). His project was to investigate the issue of bruising of cox pippins. Unfortunately, he went off and wrote a lot of nonsense about gravity and calculus and stuff and did not even mention apples in that *Principia* thing. What kind of progress report was that anyway? Well, just like Mike Church's, Newton's funding was cut and, even today, fruit farmers in Ontario, who have a strong voice on Parliament Hill, are losing a fortune in bruised apples. See what happens when scientists don't do as they are told — complete chaos ensues.

Mention of chaos brings to mind the celebrated case of how the musings of an unconventional mathematician on the length of the coastline of Britain gave IBM some insight into the serious problem of errors introduced into computer data during telephone line transfer. That sleepless night, it occurred to me how the unseen hand of an anonymous and unheralded research director must have guided this unlikely course of events. Picture the scene.

"Look here Mandlebrot, when these computer things get going there are going to be big problems with data transfer. Why don't you just toddle off and measure the length of the coastline of Britain?"

It's amazing how simple things can be when the truth is recognized.

Newton eventually saw the truth of the very message we were given (*i.e.*, Government controls spending and if you want part of the action you have to join them). As we all know, he became head of the Royal Mint.

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