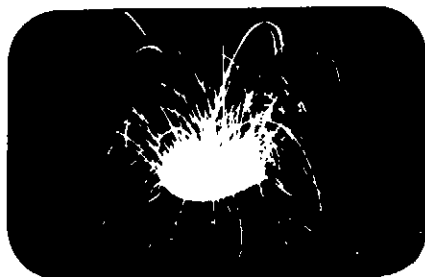


Commentary



Pyroclasts

Then and Now

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An invitation by Roger Macqueen, our new editor, to submit a *Pyroclasts* column stimulated this elderly retiree to catch up on recent happenings in the affairs of geoscientists. So I read "Future Challenges and Trends in the Geosciences," the recently released Canadian Geoscience Council (CGC) report published in this journal (v. 22, nos. 1 and 2, 1995) by Barnes *et al.* And I also attended the CGC symposium "Future Directions and Policies" held at this year's annual meeting of the Geological Association of Canada—Mineralogical Association of Canada (GAC—MAC) in Winnipeg. Then I scurried to the library to seek out ancient *Pyroclasts* and related material of the 1970s and to decide whether or not our problems of that era had been settled or were still with us as part of our "Future Challenges." My conclusions: most similarities between then and now are more apparent than real. We have remedied or are remedying some old problems; others have been ignored, and today we are faced with our profession's major problem of the century: possible extinction.

MORE APPARENT THAN REAL?

GAC membership was slightly more than 2000 when *Geoscience Canada* first appeared on the scene in 1974. Today it is almost identical. Does this reflect stability? No way! Then, we were in a period of rapid growth that stabilized at 3000 members from 1982 to 1990. Now we appear to be in a steady decline that former Secretary-Treasurer Elliott Burden claims will reduce us to 1500 members by 2000 A.D. A great organization is withering on the vine!

The first *Pyroclasts* was a no-name column in 1975 that described representatives of the CGC meeting with federal ministers and senior bureaucrats to ensure a place in the sun for geoscience. Why, we asked, were our National Research Council grants so small compared to those of chemists and physicists? In his 1995 GAC presidential address, Fred Longstaffe described cutbacks in allocations to both Natural Science and Engineering Research Council (NSERC) earth science grant committees. Has the same problem been with us all these years? No way! Our 1975 protests brought rapid change, so that in 1977 *Pyroclasts* noted a 17.5% increase in geoscience grants, by far the largest of any discipline. We also fared well in 1980, when there was a 32% increase in NSERC's budget. CGC carried a great deal of clout as the unified voice of geoscience in those distant days. As Fred's address noted, we again need a sense of unity and a strong voice.

SEX IS A SUCCESS

Although we had icons such as Alice Wilson and Helen Belyea around for years, our profession was one of the last of the sciences to welcome women as equal partners. When I addressed GAC in Saskatoon in 1973, we had only 36 females among our 2000 members and most of those were not employed as

genuine professionals. A major hang-up was field work and the concern that scheming female field geologists would lure innocent sons and husbands to sex on the rocks during our long, cold summers in remote areas. The Northern Miner's ace reporter, Norah (Nean) Allman, wrote a front page story on that lurid talk in Saskatoon and further aided the efforts of Judy Moody, Barbara Mioduszewska, Charlotte Keen and others in trying to break down the barriers of a male-oriented profession.

Integration of female geoscientists has been phenomenally fast, at least relative to geological time, and today, about half of all geology undergraduates are female. Elliott Burden tells us that 40% of new GAC members are female and, with old males retiring at an accelerated rate, complete gender balance is not far away. Nean Allman became our president in 1981, probably the first female president of a geoscience society anywhere in the world. Mary Claire Ward, our second in 1995-96, stated in her presidential address, "Finally, women can no longer blame mineral industry frustrations on gender bias." We have come a long way in heterosexual tolerance during the past few decades.

Several non-whites wrote *Pyroclasts* in the 1970s to protest racial hiring biases in Canada (relative to the United States), particularly in universities. I doubt that this situation has changed. Also, it was noted that young (age 35 and younger) scientists were seldom, if ever, elected or appointed to positions of prominence in Canadian geoscience societies. Hugh Morris made the same observation at GAC—MAC '96. Neither of these minorities is mentioned in the recent report by Barnes *et al.*

PUBLISH AND PERISH

Jim Aitken took over *Pyroclasts* for the second issue of 1977 to protest wittily

about the trivial talks presented at annual meetings and the growing number of low-grade papers accepted by journals. He suggested a Richter scale of potential impact with a paper registering 4.0 or lower being summarily rejected. This hit a sore spot and many long letters from prominent geoscientists followed, pointing out the oversimplification in Aitken's fallacious reasoning process. Journals burgeoned, and GAC (and other) annual meetings continued to sprout more simultaneous sessions.

An outrageous *Geoscience Canada* article in 1993 entitled "Reveille" resurrected this controversial subject and suggested the situation was worsening. Glory be, there seems to be a little action at last. Certainly the rate of acceleration is glacial, but we are seeing changes: many more poster sessions (thanks to Jerry Remick's generous prizes); splendid public lectures and prime-time education sessions at Victoria '95; a CGC symposium at Winnipeg '96; and a promise of great things for Ottawa '97 (GAC's 50th anniversary).

RESEARCH VERSUS TEACHING

The recent death of Tom Clark at age 102 took me back to my undergraduate days and the genuine pleasure I experienced in his classes and those of his colleagues at McGill. Teaching was their first priority. All of them produced a handful of good research papers (5.5 to 6.0 on the Aitken scale) and the odd best-selling textbook, but undergraduate teaching was their main preoccupation. What a shock it was for many of us to move on to prestigious universities in the United States, where we found that the teaching of undergraduates was mainly relegated to graduate teaching assistants.

By the time *Geoscience Canada* came into being in 1974, research dominated Canadian university geoscience departments and was the only route to respect and promotion. Those ill-suited to it nevertheless neglected other duties and doggedly persisted in churning out research papers. First-rate teachers gave up their large, popular undergraduate classes to devote more hours to research and publication. Concern was occasionally expressed in the pages of *Geoscience Canada*, and the 1979 CGC report on Canadian geology and geophysics departments recommended to deans and department heads that those

unable to produce first-rate frontier research (*i.e.*, 5+ on the Aitken scale) should be channelled into reflective inquiry and advised to address their talents to teaching and other scholarly activities. Some reviewers of the report thought highly of this advice, but, of course, no one in the universities heeded it. However, change is finally taking place, partly because of diminished access to research funds, but mainly because of rising public concern over the neglect of teaching in our universities. The much-maligned *MacLean's* magazine annual rating of universities, with its emphasis on undergraduate offerings, awakened the public to the prevailing situation and shamed or frightened the universities into realigning their priorities. High time!

THE CATAclysmic 1990s

The late Mike Keen, always avant-garde, warned us in a 1979 article in this journal of the dire outcome of continuing government deficits. His recommendations to university geoscience departments included curbs on excessive spending, shaping up or shipping out deadwood, and the avoidance of scandalous overspecialization and duplication. The crunch didn't come in the 1980s as he anticipated, but, when it finally came in the 1990s, it caught all sectors of geoscience unprepared.

Just as our profession tentatively positioned itself to take advantage of the new technologies, and to address the challenges of sustainable development, environmental protection, and global change, it was suddenly plunged into chaos. Fiscal restraint, downsizing, retirement packages for some of the fortunate older workers and short-term contracts for most of the unfortunate younger workers suddenly became the order of the day. Companies have folded or merged at an accelerated rate, geological surveys have taken a fearful beating, enrolments in geoscience have fallen steadily, and several geoscience departments face elimination. Where and how will it all end?

Not all have suffered as much as the geosciences. The medical profession, for example, seems to have survived intact despite severe cutbacks in health care. At annual meetings of the national and provincial medical associations the agenda emphasizes professional concerns, policy and tactics. The physicians' viewpoints have eventually been

taken into consideration as the politicians have attempted to restructure health care. The medical associations are strong and continually impress on both public and politicians the worth and indispensable skills of their members.

Can we learn anything from the medics? After all, the geoscience skills are vitally important to an ailing Earth that badly needs tender understanding and loving care. But, in contrast to theirs, our community is in complete disarray. We have a plethora of highly specialized geoscience societies whose members deliver research papers to one another, shiver in the isolation of an increasingly cold fiscal climate, and totally ignore the possibilities of joint action with sister societies. This although the concept of Earth System Science and the interdependence of disciplines has been with us for more than a decade.

The Canadian Geoscience Council, which had some initial success in welding our societies together in common causes, is currently in deep trouble. The beleaguered Geological Survey of Canada has had to withdraw much of its financial support. The largest and richest member of the Council, The Canadian Society of Petroleum Geologists, has abruptly withdrawn its support rather than participate in an overdue restructuring and re-dedication. Members of the remaining adhering societies seem to know little of either CGC's past successes or its future potential and are unwilling to pay the dues required to restore it as the watchdog and action arm of the geoscience community. Truly, we have fallen upon sad times.

WHAT TO DO?

We have to embrace the mind set of Earth System Science advocated in this journal (v. 22, nos. 1 & 2, 1995) by Barnes *et al.* and accept the fact that solid earth, marine, bio and atmospheric sciences are not isolated entities, but inextricably interrelated and interdependent. Then we have to accept the fact that, although we may need small groups to facilitate information exchange in our narrow subdisciplines, our greatest need is for a strong national organization, like the Canadian Medical Association, that represents all of us and our values and our concern for the Earth. And, it is going to cost us money as individuals, just as similar organizations cost medics, engineers and lawyers big bucks. If we are to survive, we

need a national organization to which we all proudly belong and to which our own specialist societies pledge allegiance and support.

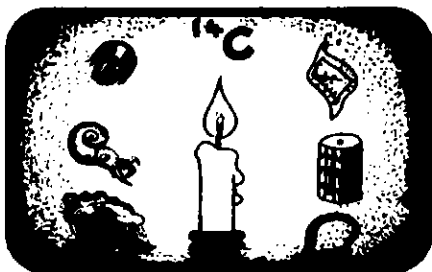
WHO TO DO IT?

I am aware of only one group that has the potential to lead our profession into a national union of earth system scientists and that is our own Geological Association of Canada. Our members hail from coast to coast with strong regional sections active from Newfoundland to British Columbia. We represent all employment sectors with about 50% from

industry, 30% from academia and 20% from government. Our leadership from the beginning was by statesmen such as Duncan Derry and Willis Ambrose who reached out beyond their own disciplines. We are still led by such people if we can judge by presidential addresses of the past few years. The revised format of our annual meetings, the way in which we have embraced essential fringe pursuits such as public awareness of science, and the fact that we have an ad hoc committee producing a 10-year strategic plan are all evidence that our 50 year old GAC is still very

amenable to change. Our association is the logical choice to lead the geoscience community into a national confederation of earth science societies (maybe, but not necessarily, a drastically restructured and rejuvenated CGC) with 10,000 or more individual members. Ironically, if successful, there will no longer be a need for a national GAC, only its regional sections and subject divisions. Our doughty GAC will perish happily while giving birth to an all encompassing union that will better serve the geoscience community, the nation, and the Earth. Amen.

Conference Report



Pools '96: An Outpouring of Oil and Gas Field Data in Calgary

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Geological Survey of Canada Contribution
No. 1996190

Pools '96 is the title of the Canadian Society of Petroleum Geologists Annual Convention held in Calgary 16-20 June 1996. The conference, focussing on oil and gas pools of the Western Canada Sedimentary Basin, was a daring venture for the CSPG because the technical program depended largely on contributions from the oil industry and they could not expect much input from universities or geological surveys. In the event, their confidence was justified. More than 2500 delegates registered at the Calgary Convention Centre, over 70 companies rented booths in the Exhibition Hall, and some 40 industrial sponsors stepped forward.

The Program and Abstracts volume was exactly what such a publication should be: easy to use, thanks to the use of dividers, and full of excellent extended abstracts of the talks arranged in the order of their presentation. The volume was spiced with Peter Harrington's summaries of recent operational

activities in the various regions, came with a pool map, and contained enough blank pages to make note-taking easy.

The technical program involved three concurrent sessions and the majority of the 47 western Canadian pool studies were presented in sessions that were organized geographically. Also included were thematic sessions on environmental geology, international geology, reserves and economics, hydrogeology and all-day poster displays. In all, 93 papers and 29 posters were presented.

In most of the pool studies that this reviewer heard, the emphasis was geological and there were numerous detailed facies analyses presented combining seismic data, core descriptions and log interpretations with reference to depositional models. John Hopkins discussed the Jurassic Medicine River "D" Pool around a superb set of slides that summarized 3-D seismic interpretation of the underlying Palaeozoic incised and karsted carbonates, illustrated the