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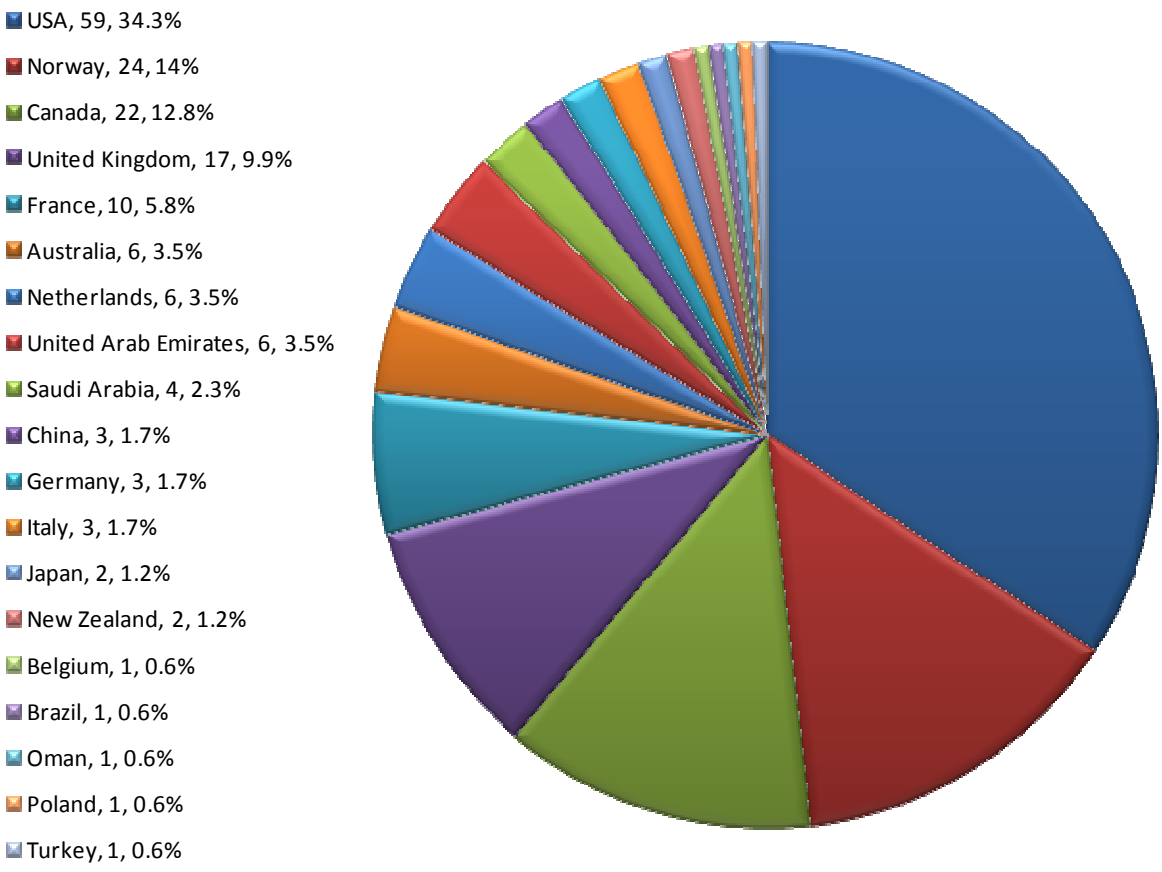
2010 SCA Annual Symposium A Resounding Success

By Jill Green and Ted Braun

The 2010 SCA Annual Symposium held in Halifax this year was a resounding success. With a theme of "**Core: Wellsite to Production**", attendees got to learn about the full spectrum of technical issues related to core. There were a total of 172 attendees representing 19 countries. A pie chart is shown below illustrating the number of attendees from each locale.



John Feil, Steve Kunkel, Christa Vindum, Jill Green, Yogi Vindum, Derrick Green

The conference was kicked off with a golf tournament on Sunday, October 3. The players had an amazing time and got to enjoy the wonderful fall weather and Halifax scenery.

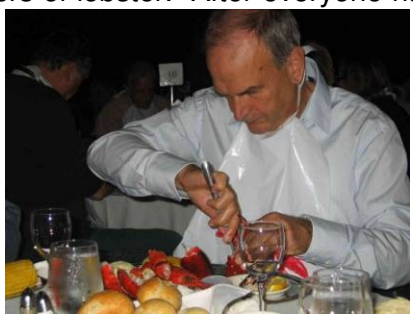
The workshop started off the technical program for the conference. Seven invited experts spoke about the lifecycle of core – from wellsite to production. The workshop was well attended and the discussion was lively. Everyone in the room learned something new.

The Opening Reception was held Monday evening in the reception hall beside the Exhibit Area. Attendees enjoyed tasty hors d'ouvres and beverages and had the opportunity to get an early look at the Exhibit Hall and talk to the vendors.

The technical sessions started on Tuesday morning and ran until the end of the day on Thursday. All technical presentations were well received. Conference attendees were able to stay on-site each day and share breaks and lunch together. This allowed greater interaction between participants.

Atlantic Canadian Lobster Dinner

A highlight of the conference was the Gala Dinner held at Pier 21. Attendees enjoyed a pre-reception with access to Canada's Immigration Museum. The dinner began with a bag piper leading the servers into the Hall with platters of lobster. After everyone had chosen their lobsters, Jill Green went to the podium and showed everyone how to eat the lobster the Atlantic Canadian way. Everyone put on their bibs and dug in. From the sound of the laughter and chatter, it was obvious that everyone was enjoying the experience. After dessert was served, the Darcy Award for Technical Achievement winner was announced. John Shafer, 2010 Award Winner, gave the attendees a wonderful presentation on his work and experience. Congratulations John!



Bas Schipper, VP Membership, enjoying the lobster dinner.

Joggins Fossil Park

On Friday after the symposium, 46 attendees boarded a bus for the field trip to the Joggins Fossil Centre on the banks of the Bay of Fundy. All enjoyed seeing the Carboniferous-age fossils that have been eroded from the cliffs by the world-famous tides.

There were seven Darcy Award winners present at the Symposium this year. It is an honour to have them all attend and contribute to the SCA.

Jill Buckley (2002), George Hirasaki (1999), Norman Morrow (1996), Odd Hjelmeland (2009), John Shafer (2010), Gerard Hamon (2007), Doug Ruth (2005)

This year, for the first time, attendees were asked to fill out a survey about their conference experience after they arrived back home. Almost 50% of the attendees contributed to the survey and the feedback will help make the 2011 Symposium even better in Austin, Texas, USA.

Again, thank you to all the attendees, exhibitors and to the sponsors of the 2010 Annual Symposium in Halifax. A special thank you goes to Stayc Feil and Melanie Leslie for their work planning and executing the SCA Annual Symposium this year.

John Shafer - Darcy Award Winner 2010

Introduction of Dr. John Shafer

By Bas Shipper

Halifax, 6 October 2010

Ladies and gentlemen,

Henry Darcy was a French engineer who made several contributions to fluid mechanics and what is important he established Darcy's law that was initially developed to describe flow through sands. This law is now in widespread use in the oil industry. The unit of permeability, Darcy, is named in honor of Darcy's work. In turn the SCA have also honored Darcy by naming its award for technical achievement the "Darcy" Award.

Since its inception in 1987, 22 members have received the Award. Although none of them have gone on to win the Nobel Prize, some of the past awardees have defined the field of core analysis by creating the tools needed to answer fundamental questions. Others have made scientific contributions of such blazing insight that they have set a new course in core analysis altogether.
I am happy to see that 6 of the past awardees are here:
Jill Buckley, Gerald Hamon, George Hirasaki, Odd Hjelmeland, Norman Morrow, Doug Ruth

This year, we honor Dr. John Shafer and it is my pleasure to introduce him to you.

After graduating with a Bachelor degree in chemistry John went for 2 years to Ghana, as a US Peace Corps volunteer. The mission of the Peace Corps includes three goals:

- Providing technical assistance,
- Helping people outside the United States understand U.S. culture, and
- Helping Americans understand the cultures of other countries.

He took his job very seriously and I can say that after 44 years of marriage with Christie he fully understands the culture of Ghana.

After returning from Ghana, he graduated school at the University of Berkeley, where he obtained a Ph.D. in chemistry in 1970.
For the next 40 years John worked for various oil companies, of which 19 years at Exxon. The last 12 years after retirement from Exxon he worked as an independent consultant.
In 1988 working at Exxon Production Research he was transferred to the Core Analysis Section. John took this opportunity in change in work to obtain a Master's degree in Petroleum Engineering.
This was done by studying in the nights.

I first came to know John some 20 years ago. We met each other at SCA symposiums and SCA Board meetings, API committee meetings for rewriting recommended practices for core analysis, and we met during joined ExxonMobil – Shell project meetings.
It was during a visit to the Exxon laboratory in Houston where I was entertained by Ted Braun and I decided to have a look at John's office. Looking through a glass window I saw John laying on the floor "sleeping as a Dutchman". I don't know if "sleeping as a Dutchman" is a correct expression, but since there are so many English expressions with a negative meaning with Dutch in it, that it might mean: "studying in the night and sleeping during the day".
His explanation was that this was his lunch-break or siesta.

After retirement from ExxonMobil in 1998 he started consulting for various Oil Companies. For Devon Energy he consulted 7 years where he worked in an asset evaluation team providing support for their ultra deepwater fields. It is in this capacity that he published several papers among others on the impact of High Pressure High Temperature reservoir conditions on rock mechanics and fluid flow measurements.

John is currently semi retired (again) with part time consulting. He and his wife, Christie, recently moved from Houston to near Seattle to be near both their sons and families.

Today we honor John for his sustained and successful push over all those years he gave to the core analysis society. John has been a gracious and modest colleague and friend. Before I hand over to Gary Sinclair, I would appreciate that you join me in warmly acknowledging John Shafer for all he has done.

The Darcy Award Acceptance Speech

By John Shafer

Thank you for this great honor. I am most appreciative of the SCA Board of directors selecting me for this award. I feel that I will need to work another 20 years to match the contributions provided by the previous Darcy award nominees.

I also wish to thank Bas Schipper for his "kind" introduction. I had asked Bas if he would introduce me as we been friends for the past 20 years and have worked together professionally during that time. These 20 years span my employment at several different companies.

I have attended 20 of the past 22 SCA conferences and presented my first SCA paper 20 years ago. SCA is by far my favorite conference to attend because of the opportunity to renew and make new acquaintances with fellow core analysts.

I would like to take this opportunity to spend the next few minutes reflecting on my 40 years of chemistry and mechanics of porous media R&D. The first 18 years of my career were focused on minerals, coal, and oil shale covering a very broad range of activities from the extractive metallurgy of base metal sulfides, in-situ leaching of copper and uranium ores, to retorted oil shale/mining waste disposal and plant water recycle. Two years after transferring into Exxon Production Research's Coal and Oil Shale Section, 1987, it was disbanded and we were all transferred to other divisions and for me this was the start of my career in petroleum core analysis and going back to graduate school to get a master degree in petroleum engineering.

I would like to take this opportunity to acknowledging some of the Exxon staff, who were my core analysis mentors: Core Analysis: Mike Wooten & Art Thompson, Rock Mechanics: Terry Miller, Mineralogy: John Longo & Dave Pevear, Petrology: Bob Klimentidis, and Core NMR: Hans Thomann. Of course there were many outside of Exxon that I have greatly benefited from.

The most technically challenging and thus the most enjoyable years of my career have been the seven years as a consultant to Devon Energy as part of asset team evaluating the ultra deepwater Lower Tertiary fields in the GoM. These fields are greatly over pressure with pore pressures that exceed 19,000psi (1310 bars) and the rock is typically very consolidated. At the time, there were no databases for viscosity, IFT, permeability, rock mechanical properties at these reservoir temperature and pressures and thus it presented many interesting technical challenges. Three of many technical challenges that I was involved in were:

1. Porosity and permeability measurements when confining stress is 3,000 psi with zero pore pressure is not equivalent to reservoir confining stress of 23,000 psi and a pore pressure of 20,000 psi. We now know that permeability is a function of pore pressure for these Lower Tertiary rocks.

2. No services company labs in the USA capable of obtaining permeability measurements during uniaxial compaction at true reservoir conditions of stress, pore pressure, and temperature.

3. Reservoir pressures at or beyond viscometer measurement capability and lack of HTHP viscosity standards cast doubt on accuracy of measurements.

Next I would like to briefly comment on what I think should be the future direction for core analysis R&D. Log analysis has made great advances in obtaining rock and fluid properties downhole

coupled with the increased reliance on RFT mobilities for characterizing reservoir perms and calibrating log derived perms. In comparison to these log analysis advances, the core analysis timeline remains unchanged with 3 to 6 months for routine and 12 -18 months for special core analysis. What can be done to accelerate delivery of special core analysis data?

- In the Lab: 3-D Micro or Nano CT/mineralogy imaging and pore scale modeling. Eventually we may be able to simulate what we cannot conveniently measure.

- Logging tools: NMR derived pore size distribution and wettability coupled with geochemical log derived reservoir mineralogy to predict rock wettability, capillary pressure, and relative permeability for fluids producibility.

- Wellbore flow tests: Could one combine mini DST with NMR log well bore saturation monitoring to back out relative permeability?

However, verification of these above mentioned techniques require reservoir conditions lab measurements. Even today we seldom actually obtain many of our reservoir property measurements at true reservoir conditions assuming that it is not required. Where are the data that support this? Also, will equipment cost and safety considerations preclude true reservoir conditions HTHP SCAL and rock mechanics measurements? As Ultra Deepwater GoM exploration encounters reservoirs with ever increasing pore pressures, obtaining reservoir property measurements at true reservoir conditions will become more difficult and prohibitively expensive.

Finally … a few words on retiring for the second time. I retired from Exxon 12.5 years ago after 19 years of service with Exxon for a total of 27 years with petroleum/minerals industry and then proceed to work as a consultant nearly full time for about 9 months of year. This past spring we moved to Anacortes on Fidalgo Island, about 80 miles north of Seattle, WA, to be near our two sons and families (two grand-daughters). Currently I consult from Anacortes to Noble Energy, Houston, at a much reduced level. This has provided a nice transition from 40 hours a week to something on the order of 10 hours. I guess someday this will eventually go to zero at least according to my wife Christie.

In conclusion, thanks for bestowing this great honor and the 20+ years of SCA memories. I have found the SCA meetings as a great place to exchange information and because of the size of our meetings, like an extended family with many great memories. Thanks also for the opportunity to share some reflections with you this evening.

On Closing the Gap (SCA 2010, Halifax)

By SCA US Director, Dr. Eric Withjack

Our US Director, Dr. Eric Withjack, was a co-presenter in a workshop on core analysis (*Core: from Wellsite to Production*) at the 2010 International Symposium of the Society of Core Analysts (SCA), Halifax, Nova Scotia. The workshop was attended by approximately ninety engineers and scientists involved in core analysis research and oil & gas activities. As it "turned-out," the venue was also a great opportunity to bridge one's geological perspective from the Miocene and Pliocene formations of the Los Angeles Basin, back into the Devonian and Carboniferous Epochs.

BLUE BEACH, BAY OF FUNDY (NOVA SCOTIA)

Not being an expert in geology, I wanted to take this opportunity to share a few thoughts and images from a remote geological site on the Bay of Fundy (Blue Beach, Nova Scotia). The location is named for the blue-gray Devonian shales making up the shoreline. The Bay's tidal bore drains and refills the Bay on a six-hour cycle, causing the water to rise and fall nearly 10 meters.

ENTRANCE TO BLUE BEACH FOSSIL MUSEUM

This location is unique on the planet in that the Devonian-to-Carboniferous shales source some of the most highly-prized fossil records known. The rise and fall of the tides contribute to refreshing sites for exposing fossils, and make this location a "hot spot" for geological expeditions (keeping in mind that a geological "hot spot" has activity on the geological time scale!).

BLUE BEACH FOSSIL MUSEUM (ENTRANCE)

INSIDE THE BLUE BEACH FOSSIL MUSEUM

A PRIZED COLLECTION (FOOTPRINTS AND TRACKS)

The fossils discovered here span a very tight, but significant gap, in the fossil record. The gap is known as “Romer’s Gap,” which spans approximately 360 to 345 million years ago (please see Wikipedia for brief reference). Fossils which can be found here predate, and also post-date the Gap, contributing to their high value in understanding evolution from primitive marine fauna and lobe-finned fishes, to terrestrial faunas and modern sharks. It has been proposed that the terrestrial faunas led to limbed vertebrae, including ourselves!

PARI & CURATOR (CHRIS MANSKY)

The curator of the museum lives on-site, and is a self-educated fossil researcher (Chris Mansky, pictured in photo with my wife, Pari). I invite you to enjoy the photos, and take a look-back “in time.” The museum is supported by donations only, and if you have further interest please feel free to contact me directly.

”END-POINT…”

I’m sure all would agree that 2010 has been a challenging and rewarding year. Our Annual Symposium for 2011 will be in Austin, Texas….and I’m sure that it will be a resounding success.

Best to all in 2011!

End-point is provided by your Editor for ‘miscellany’. Please feel free to send in your contributions.

Visit the SCA Website for specific Symposium details and associated links.

Patrick Lasswell
VP Publications

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