

# SCANews



The SOCIETY of CORE ANALYSTS

P.O. Box 2861, Dublin, CA 94568-2405

July 2005

Published by the SCA, Editor: Andrew Cable

Volume 17, Number 2

## *Message from the SCA President*

by *Olga Vizika*

This year's technical program, prepared by our International Technical Committee led by VP Technology Tom Fate, features 10 technical sessions including over 35 oral presentations, plus poster sessions, and, as last year, time for vendors to describe their products and services. The sessions cover the whole spectrum of interest for Core Analysts, but also address many issues of prime importance for the Reservoir Engineers.

This year's program will demonstrate the growing contribution of core analysis in areas outside the traditional exploration and production area. In a world where the sustainable development and the respect of the environmental constraints become the utmost objectives, Core Analysis can play an outstanding role, beyond the optimum exploitation of existing reserves, in the evaluation of new (conventional and unconventional) reserves and CO<sub>2</sub> storage. These problems are highlighted by our distinguished invited speakers during a whole day Workshop that has been jointly organized by Tom Fate and our VP Arrangements Mario Ioannidis.

Following the 2005 conference a field trip has been organized by the VP Arrangements to the Niagara falls: a frontier between geology and adventure.

I would like to thank and congratulate all those who contributed once again to turn into reality this remarkable gathering of people willing to teach, to learn but most of all to exchange. The success of the Symposium is due to all the contributing actors, workshop speakers, authors of oral and poster presentations, members of the Technical Committee and the SCA Board, session chairs, session attendees, exhibitors and the Local Organization Committee for all their considerable efforts.

I wish the Symposium a great success and to all of you a fruitful meeting.

A handwritten signature in black ink, appearing to read "O. Vizika". The signature is fluid and cursive, with a long horizontal stroke at the end.

Olga Vizika  
SCA President 2005

### ***In this issue of SCA News...***

by **Andrew Cable, Editor**

Welcome to the Summer issue of SCA News. Toronto is just three weeks away, so in this SCA News you will find information to help plan your trip. Which in our modern age means a list of web sites to visit, starting with [www.scaweb.org](http://www.scaweb.org) !

I am grateful this Sunday morning for the torrential rain. In Dorset, in common with much of Western Europe we have been experiencing a very fine hot summer. If you are a 'regular' reader of SCA News (there are three issues per year) you may be starting to appreciate that your editor is a lover of the outdoors and gardens. So not only I am I thankful for the much needed watering of our flowers and trees, I cannot be excused not to come indoors and bring you SCA News before the end of the month.

I remain disappointed to see that the number of downloaded SCA News issues remains low. I must digress: Gounod-Judex (from Mors et Vita) has just started (yes hi-fi is on) and this is one of my favourite tracks (and still makes the hairs on my neck stand!). Not to diminish all of the other great composers that feature on this (much overplayed) classics CD.

„,Yes the December issue has increased from 110 downloads to 206. Not surprising given the test of time, but I do take heart from the fact that April issue currently stands at 244. Being the summer issue, it is a little sparse on content for which I apologise. More rain would not have helped. Many are away with family on their annual holidays and the SCA members have yet to take me

up with more technical contributions, member's viewpoints or trivia in 'End-point'. So expect to see a lot of me in Toronto as I shall be trawling for ideas for the three 2006 issues of SCA News (assuming I am elected of course as your VP Publications). On the back page you will find a riddle. The first correct (and most original) answer to this riddle will win a bottle of Canadian red wine with my compliments. Answers to me, in person, at SCA Toronto. This could be a start of a good thing. If I can get some sponsorship in SCA News, we could have a prize competition with every issue. Technical and educational competitions relevant to core analysis of course...

In this issue of SCA News, Olga Vizika is looking forward to welcoming you all to SCA 2005. I have Tom Fate's technical programme - but please do visit the website for more information. Marios Ioannidis has ideas on what to do in Toronto. We also have news from our ME Director and one of our European Directors.



*More from the editor on the back page...*

## *From the VP's Technology and Arrangements*

by **Tom Fate and Marios Ioannidis**

It is with great pleasure the Society of Core Analysts welcome you to the impending 2005 Annual Technical Symposium, Workshop & Exhibition in Toronto, Canada.

I hope this Symposium will be an opportunity to explore the latest developments in core analysis, as well as an opportunity to meet old friends and make new ones. We are again pleased to have attendees from many diverse areas of the world.

As you have seen from April's SCA News, Toronto is home of numerous world-class attractions and the world's most ethnically diverse city, Toronto is certain to satisfy the most discriminating visitor. Attractions like the SkyDome and CN Tower, museums, art galleries and a large array of distinctive shopping districts and markets will be within your reach, all in a scenic backdrop provided by Toronto's waterfront - one of North America's largest recreational waterfronts. If you are part of the field trip, you will have the chance to study rock formation as we explore the breathtaking natural environment of the Niagara Falls and escarpment from both land and water!

We thank our sponsors for their generous donations, which have made the 2005 conference possible, our exhibitors for contributing to the pool of knowledge with their equipment and services, our invited speakers for helping in defining new opportunities and challenges for core analysis, and all delegates for sharing their core analysis experiences through their paper and poster contributions.

A full listing of Toronto's attractions can be found at:-

[www.city.toronto.on.ca/attractions](http://www.city.toronto.on.ca/attractions)

This list is numerous and too many to print here, but adding /attractions\_highlights.htm you can drill down to the more popular attractions.

On request of many symposium attendees the IFP/UW short course that was originally planned on Monday 22<sup>nd</sup> has been moved to Sunday 21<sup>st</sup> August. This allows people to also attend the workshop on Monday. "Laboratory Measurements and Network Modelling of Petrophysical Properties" is at the Symposium hotel 08:00 to 15:45 with coffee and lunch provided. Information can be obtained from the workshop organiser: Roland Lenormand.

The symposium workshop is "Emerging and Unconventional Resources: Gas Hydrates, CO<sub>2</sub> sequestering and Heavy Oil Sands". Three guest speakers have been invited to the first session:-

**Richard Sigal** (U. Oklahoma):  
"Petrophysical Characterization of methane Hydrate Containing Sediments"

**Jim Howard** (ConocoPhillips):  
"Monitoring Natural Gas Hydrates with NMR/MRI" **Stefan Bachu** (Alberta Geological Survey): "Carbon Sequestration in Geological Media: Core-Scale Challenges"

In the second, Heavy Oil session:  
**Maurice Dusseault** (U. Waterloo):  
"Sampling, Preserving and Testing Unconsolidated Heavy Oil Sand Cores"

**Apostolos Kantzas** (U. Calgary): "Heavy oil and oil sands core analysis with low field magnetic resonance". The technical sessions will be followed by group discussion.

Sunday, August 21

8:00-15:45 IFP/UW Short Course:  
"Laboratory Measurement and Network Modeling of Petrophysical Properties"  
(with one break and lunch)  
4:00-6:00 PM Registration  
6:00-8:00 Icebreaker

Monday, August 22

Workshop: "Emerging and Unconventional Resources: Gas Hydrates, CO<sub>2</sub> Sequestration and Heavy Oil Sands"  
8:00-10:15 AM Session A- Gas Hydrates and CO<sub>2</sub> Sequestration  
10:15-10:45 Break  
10:45-12:15 Session B- Heavy Oil  
12:15-1:30 PM Lunch  
1:30-3:30 Group Discussion  
3:30-4:00 Break

Tuesday, August 23

8:00-9:45 AM Session 1-Improved SCAL Measurement Techniques and Interpretation I  
9:45-10:15 Break  
10:15-12:00 Session 2-Wettability: its Determination, Restoration and Impact on Recovery  
12:00-12:30 Vendor Presentation I  
12:30 -1:30 PM Lunch  
1:30-3:00 Poster Session I  
3:00-3:30 Break

3:30-5:30 Session 3- Displacement Mechanisms I  
6:30-10:30 Gala Dinner at Casa Loma

Wednesday, August 24

8:00-10:00 AM Session 4- Pore Scale Imaging and Modeling I  
10:00-10:30 Break  
10:30-11:00 Vendor Presentations II  
11:00-12:30 Session 5- Upscaling / Integration of Field, Well Test, Log and Core Data  
12:30-1:30 Lunch  
1:30-3:30 Session 6- Reservoir Characterization  
3:30 -4:00 Break  
4:00-5:30 Session 7- Displacement Mechanisms II

Thursday, August 25

8:00 -10:00 AM Session 8- Improved SCAL Measurement Techniques and Interpretation II  
10:00-10:30 Break  
10:30-12:00 Poster Session II  
12:00:2:00 Business Lunch  
2:00-3:30 Session 9- Improved SCAL Measurement Techniques and Interpretation III  
3:30-5:00 Session 10- Pore Scale Imaging and Modeling II

Friday, August 26

7:30 AM- 7:00 PM Field Trip:  
"Exploration of Niagara Falls"

### *From the SCA Regional Directors*

#### **First Local Norwegian SCA Meeting. 20<sup>th</sup> May 2005 in Trondheim**

*By Jon K Ringen (Statoil, Stavanger)  
SCA European Director, [jkr@statoil.com](mailto:jkr@statoil.com).*

As announced in the previous issue of SCANews, the first local Norwegian SCA meeting was held in Trondheim on 20 May 2005. There are roughly 12-15 companies and institutions in Norway active in core analyses or SCAL data, so there should be a potential for some local SCA gathering. The idea came up at a SCA Symposium when we recognised that these annual SCA symposiums were the only place where many of us would meet professionally.

An announcement was sent to all local SCA members plus other potentially interested persons. We also made contact with possible speakers for informal presentations of ongoing or recent studies. The feedback was beyond our expectations, with more presentations than we could accommodate and a full meeting room, 35 people in total. The meeting was held at Statoil's R&D Center in Trondheim from morning until lunch and then a tour of the facility for those interested. All paid their own expenses and Statoil provided facilities and lunch. The organisers were **Jon K Ringen** (Statoil) and **Ivar Erdal** (Reslab).

*Photo: The Statoil R&D center at Rotvoll in Trondheim.*



Below is the agenda for the meeting. Quite a number of presentations for a morning session, but there was also time for questions and discussions:-

**Geir H. Sørland** (Anvendt Teknologi) +& **Hege Widerøe** (Statoil):

"Wettability evaluation using NMR"

**Tore Skjetne** (SINTEF):

"Some of our recent applications of NMR on porous media"

**Hassan Karimaie** (NTNU):

"Oil Recovery by Water Imbibition in Asmari Fractured Rock"

**Alf Lackner** (Statoil):

"Effect of Pressure and Wettability on Residual Phase Saturation in Sandstone Rock"

**Linda Høiland, Audun Nyre, Bartek Vik, Kristine Spildo and Arne Skauge** (CIPR, Univ. of Bergen):

"Progress in the analysis of different intermediate wet states"

**Jules Reed** (Reslab) + **Vidar Haugse** (Statoil):

"Experimental and Numerical Studies of Gas Injection in Fractured Carbonates"

**Pål-Eric Øren** (Numerical Rocks):

"Network modelling cases and plans for Numerical Rocks"



*Photo: Delegates at the first local Norwegian SCA Meeting*

Based on the interest at this meeting, we will most surely continue with a meeting in Bergen or Stavanger. Until then we need to discuss whether that meeting should be more focused on a limited number of themes or other changes to the format. In conclusion we would recommend SCA to encourage other local SCA meetings/workshops, as we know have been organised in the past.



*Photo: Delegates at the first local Norwegian SCA Meeting*

### **SCA President's Visit to U.A.E**

*By Dr Waddah ALHANAI*

*SCA ME Director; [walhanai@adnoc.com](mailto:walhanai@adnoc.com)*

The SCA President, Dr. Olga VIZIKA, visited the United Arab Emirates over the second week of May. The SCA Middle East Director took this opportunity to arrange a meeting between the SCA President and key Managers of ADNOC and its Group of Companies at the ADNOC HQ in Abu Dhabi on May 11. The following was the meeting agenda:

1. Opening Welcome By ADNOC E&P Deputy Director.
2. Reflections On Abu Dhabi 2004 SCA Int'l Symposium, and

Suggestions For Future Directions; Dr. Vizika.

3. Briefing on 2005 SCA Int'l Symposium (August 21-26, Toronto, Canada); Solicitation of Attendees from ADNOC and its Group (for Course, Workshop & Symposium); Dr. Vizika.
4. Thoughts On Dynamic Reservoir Rock Typing; Dr. Vizika.
5. Discussions by all.

One of the direct results of the SCA President's visit to ADNOC and its Group, ADNOC and its Group have taken the initiative to send 9 attendees to the 2005 SCA Symposium. ADNOC and its Group also expressed their wish for the SCA to hold its annual Symposium in Abu Dhabi on regular basis. They wished the SCA a successful 2005 Symposium.

### Local SPWLA Activities:

The Abu Dhabi Local Chapter of the SPWLA now has 220 members. The Chapter has had another successful year of events. The Chapter succeeded in holding a total of 8 meetings over the 2004-2005 Season; each included a social hour, a technical presentation and a dinner.

The Local Chapter also organized a geological field trip to the outcrops at Jabel Hafeet (south-east of Abu Dhabi) over November 24-26, 2004. The field trip was more focused on the impact of the rock formations on logging tool responses – and the possibilities of reconstructing subsurface properties, where the only data is from wells that are one or two kilometers apart.

After the success of the 2004 Topical Conference, a second SPWLA topical conference was also organized by the Chapter. The topic this time was "Low

Resistivity Pay in Carbonates", and the event took place in the Royal Meridien Hotel -- Abu Dhabi, over the period January 30 – February 2, 2005.

To enhance its service to the Petrophysical community, the Abu Dhabi Local Chapter of the SPWLA is now planning to establish an Internet Web Site. The Website is intended to include Highlights of the Local Chapter's Technical Meetings -- and also the Topical Conferences & Field Trips.

The following is a summary of the 2005 technical meetings of the Abu Dhabi Local Chapter of the SPWLA:-

"Electromagnetic MWD/LWD and Under Balanced Drilling Operations", by **Denis Weisbeck** (Precision Drilling).

"Making Sense of 3D NMR Measurements" by **Raghu Ramamoorthy** (Schlumberger).

"Wireline Formation Testing in Low Permeability Formations", by **Dr. Sefer Coskun** (Baker Atlas).

"Experimental Programs Designed to Reduce Uncertainty in Formation Evaluation", by **Dr. Ove Bjorn Wilson** (ResLab).

"LWD Magnetic Resonance Logging in Middle East Carbonates" by **David Rose** (Schlumberger).

"The Compact Well Shuttle", by **Peter Handy** (Precision Drilling/Reeves).

"Real-time Chemostratigraphy at wellsite: Improved borehole positioning

and formation evaluation during drilling" by **Michael Dix** (Halliburton Sperry-Sun).

#### Local SCA members' activities:

In addition to the activities of the Abu Dhabi Local Chapter of the SPWLA, Abu Dhabi SCA members hold technical activities, that are mainly coordinated by ADCO members, and focus on key SCAL issues. Six to seven sessions are held during the year, typically with visiting SCAL specialists presenting a topic of interest followed by a lively discussion on challenges and problems encountered in Carbonates. Average attendance for these sessions have been 43 and included interested reservoir engineers, petrophysicists, and geoscientists from ADNOC, ADCO, ADMA and ZADCO.

To date, the following sessions were held as part of the first half 2005 activities (more will follow in second half of 2005):

Impact of Wettability and Capillary Forces on Water Flood Performance in Heterogeneous Carbonate Reservoirs by **Dr Shehadeh Masalmeh** of Shell Abu Dhabi.

Improved Reservoir Characterization and Modeling of Capillary Transition Zones of Carbonate Fields by **Dr Shehadeh Masalmeh** of Shell Abu Dhabi.

Strength and weakness of different experimental techniques in petrophysical studies by **Dr Ove Bjorn Wilson** from Reslabs, Stavangar (Norway).

Miscible Gas Injection in Enhanced Oil recovery by **Dr Edmond Shtepani** from Hycal Energy Research Laboratories Limited (Canada).

## ***From the Membership***

by **SCA Members**

### **Local Hero**

By Andrew Cable

Where would we be without our laptops, desk tops, website access and internet banking ? Our whole way of life depend on computers.

The technological achievements in computers in the last 50 odd years have been staggering and credit for this must go to numerous scientists, technicians and indeed entrepreneurs who have worked simultaneously to develop what we now take for granted. Yet the inspiration for this uniquely useful machine stretches back much further, to a man who was born towards the end of the 18<sup>th</sup> Century and whose family came from the scientific backwater of Devon. (Devon is on the UK's South-West coast and neighbours Dorset to the East and Cornwall to the West).

That man was Charles Babbage (1792-1871), an innovator many years ahead of his time. Babbage is widely regarded as the first computer pioneer and the great ancestral figure in the history of computing. My interest in Babbage is also personal; since my (maternal) Grand-mother, Gladys Swaine (née Babbage), knew of Charles Babbage as her Great Uncle.

Charles Babbage was born in Walworth, Surrey, on 26 December 1791. He was one of four children born to the banker Benjamin Babbage and Elizabeth Teape. He attended Trinity College, Cambridge in 1810, graduated from Peterhouse in 1814 and received an MA in 1817. He resided at Devonshire Street in London until 1828 when he moved to 1 Dorset

Street, Manchester Square, London, where he resided until his death. He was elected a fellow of the Royal Society in 1816 and occupied the Lucasian chair of mathematics at Cambridge University from 1828 to 1839.

Babbage excelled in a variety of scientific and philosophical subjects, a person of many talents and not just in technology. Between 1813 and 1868, Babbage published six full length works and nearly ninety papers. Babbage's talents and interests were wide-ranging. He was a prolific inventor, a mathematician, scientist, politician, critic of the scientific establishment and political economist. Babbage pioneered lighthouse signalling, proposed 'black box' recorders for monitoring the conditions preceding railway catastrophes, advocated decimal currency and the use of tidal power once coal reserves were exhausted. He favoured and campaigned for the introduction of Continental theories to the mathematics curriculum and highlighted the neglect of science and the status of scientists.

His most ground breaking work, however, were his plans for 'Calculating Engines' aimed at creating tables for use in statistics and the gathering of information. His Analytical Engine conceived in 1834 is one of the startling intellectual feats of the nineteenth century. The design of this machine possesses all the essential logical features of the modern general purpose computer. However, there is no direct line of descent from Babbage's work to the modern electronic computer invented by the pioneers of the electronic age in



the late 1930s and early 1940s largely in ignorance of the detail of Babbage's work.

Babbage failed to build a complete machine. The most widely accepted reason for this failure is that Victorian mechanical engineering were not sufficiently developed to produce parts with sufficient precision. In 1985 the Science Museum launched a project to build a complete Babbage Engine to original designs to explore the practical viability of Babbage's schemes. The Engine chosen was Babbage's Difference Engine No. 2 designed between 1847 and 1849. The calculating section of the Engine, which weighs 2.6 tonnes and consists of 4,000 separate parts, was completed and working in November 1991, one month before the 200<sup>th</sup> anniversary of Babbage's birth. You can see the machine at London's Science Museum ([www.sciencemuseum.org.uk/online/babbage](http://www.sciencemuseum.org.uk/online/babbage)).

It was in 1821 that Babbage began the task of mechanising the production of tables. The idea was that a calculating machine that could not only calculate without error but automatically print the results would eliminate at a stroke all three sources of errors in printed tables. Babbage designed an apparatus called a Difference Engine so-called because of the mathematical principle on which it was based – the method of finite differences. By the end of 1834, while Difference Engine No. 1 was still incomplete, he had conceived the Analytical Engine – a revolutionary machine on which his fame as a computer pioneer now largely rests. The Analytical Engine is far more ambitious and technically demanding than his

earlier Difference Engine. Like the Difference Engine little of it was ever built and all that survives are a few partially completed mechanical assemblies and test models of small working sections. The ground-breaking work on the Analytical Engine was largely complete by 1840. Seven years later he started the design of Difference Engine No. 2 using elegant and simplified techniques developed for the more complex Analytical Engine. Babbage failed to complete the construction of any of his engines. His failures were not failures of principle but of practical accomplishment.

Babbage did come to a sorry end. He is reputed to have become increasingly cantankerous, and in particular took against street musicians and he managed to get an anti-busking bill through parliament. This proved so unpopular that people booed him in the street, threw dead cats at him and even paid musicians to go and play outside his house. He died 18 October 1871, only one carriage attended his funeral.

*You can read more about Babbage (1) at the science museum website, (2) "What the Victorians did for Us" Adam Hart-Davis ISBN 0 7553 10101, or (3) "Unsung Heroes" Michael Streeter by Past Times, Oxford, England.*

## **“END-POINT...”**

*End-point is introduced to SCANews by your new Editor for 'miscellany'. Please feel free to make future contributions...*

Nomination for the 2005 SCA Technical Achievement Award Winner. The SCA's Technical Achievement Award is awarded annually to an individual deemed by the SCA Board of Directors to have made outstanding contributions to the advancement of core analysis technology. The award is the SCA's highest honour and the only award for technical achievement. Congratulations to **Doug Ruth** who has been recommended to the Board by the Awards Committee chaired by Dan Maloney and unanimously accepted.

The SCA is proud to have the following functions sponsored:-

Short Course: IFP/CYDAREX

Icebreaker: Chevron

Gala Dinner: University of Waterloo

Please contact John Chatzis if you or your company wants to sponsor a function too (e.g. breakfast, coffee break, lunch etc.).

Thunder Horse platform incident in Mississippi Canyon Block 778 approximately 150 miles southeast of New Orleans. The recovery team continues to make steady progress in righting the Thunder Horse semi submersible platform. Concern for safety and the environment remain top priorities. Operations to-date have not resulted in any injuries or environmental impact. BP and its lead contractor SMIT continue activities to make the platform sea-worthy and storm-safe as a precaution against changes in weather

conditions resulting from the expected arrival of Hurricane Emily. The Thunder Horse project was not due to start production until the end of 2005, and the platform is not yet connected to the subsea oil wells.

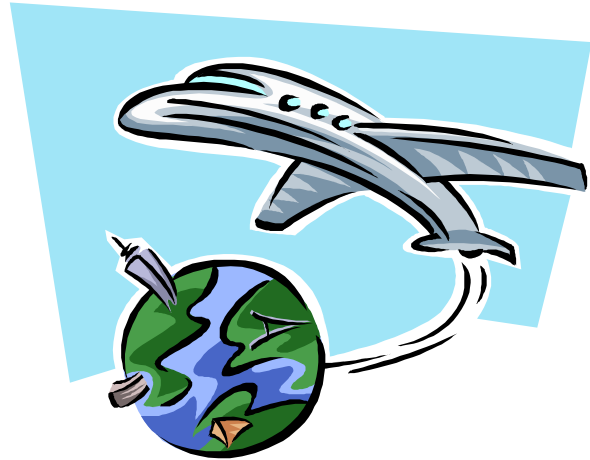
Museum Plans have been announced by ConocoPhillips for Bartlesville and Ponca City, Okla. to commemorate the history of its Oklahoma heritage. The company will provide up to \$5 million each for the new facilities, which are expected to be completed by May 2007, as part of Oklahoma's centennial celebration. The museums will be operated and funded by a private foundation established by ConocoPhillips, and admission will be free. Both museums will be designed by Haley Sharpe Design, a design firm that is currently creating the Oklahoma History Centre.

International Conference Sediment-hosted Gas Hydrates: New Insights on Natural and Synthetic Systems 25-26 January 2006. The Geological Society, Burlington House, London (Abstracts by 31<sup>st</sup> August to [mike.lovell@le.ac.uk](mailto:mike.lovell@le.ac.uk)).

DEVEX 2005 18<sup>th</sup>-19<sup>th</sup> May at the Aberdeen Exhibition & Conference Centre. This year's event incorporated the DTI Seminar on Increased Oil Recovery and also featured a special workshop on Heavy Oil. The conference was attended by 251 delegates with presentations taking place simultaneously in two conference halls from 09:30 each day. The conference ended with a field trip to study outcrops in the bay of Stonehaven harbour.

Next SCA News The next issue will be December. All contributions for the next SCA News by 18<sup>th</sup> November please. My thanks to all contributors in this issue of SCA News.

See you in Toronto...



It was a very cold and wintry night when I heard a light tap on the door...I answered but could see no one. Then I heard a small voice from the door step, a tiny snail said "please mister, let me in so I can warm by the fire". The snail duly received the end of my boot, and was kicked into the distant night. It was the following Spring when once again, I heard this light tap, tap, tap on the door. But again no one was to be seen. Then again, I heard a small voice from the door step: "What did you do that for!"

What comes running from the North Sea yelling obscenities ?



Crude Oil

### Riddle

*Three members from the SCA went to lunch and when they came to pay the bill it was \$30. Great, with such simple arithmetic, each placed a \$10 note to cover the \$30 bill. The waiter was soon to return with \$5 and admitted that he had made an error and the bill should have been \$25. Each of the three took \$1 each and left behind \$2 for the waiter. If each had paid \$9 for their lunch, a total of \$27, and the waiter received \$2 in tip, which is \$29, what happened to the missing \$1 ?*