



The Hammer

Newsletter of the Geological Society of Trinidad and Tobago

July 2002

P.O. Box 3524, La Romain, Trinidad and Tobago W.I.

www.gstt.org

Launch of the National Energy Business Alliance

One hundred years ago this year, Randolph Rust drilled the first commercial oil discovery in Trinidad and Tobago. This historic event was effectively the first of many bold steps that have positioned Trinidad and Tobago as a major player on the world energy stage. Our path has been impressive. TT is now the world's largest exporter of Ammonia and Methanol and is set to become its fifth largest exporter of LNG.

In celebration of these past achievements and to continue building on them for a richer future, the Minister of Energy and Energy Industries launched an organisation called the National Energy Business Alliance Limited (NEBA) on July 20th. NEBA will be supported by all those organisations dealing with or interfacing with the energy sector, and will be a not-for-profit organisation.

The objectives of NEBA are twofold. The first is to promote the local energy sector by finding ways to create opportunities for local businesses and people to be able to share in the success of the energy industry in TT. The second is to support the energy objectives of the member organisations by acting as a lobby and voice for the industry.

To this end, NEBA will be undertaking various activities. These include fostering local skills development; increasing direct local investment in upstream and

downstream projects; and maximising local participation in the energy services sector.

The membership – educational institutions, Chambers of Commerce, Bankers Association, professional bodies and industry – are all united in the view that critical to achieving NEBA's key objectives is building local capabilities (people, finance, technology and processes)

One of NEBA's founding members – Tony Paul – is bpTT's Manager for Sustainable Developments. His group is focused on enabling bpTT's upstream activities to benefit the local economy. Paul particularly welcomes the set up of NEBA, as he believes that it will require a collaborative effort from all players in the energy business to truly realise its potential for all of TT.



Minister of Energy, Mr. Eric Williams, GSTT president, Krishna Persad and Manager Sustainable Development at bpTT, Tony Paul, at the dinner held at the Trinidad Hilton commemorating.

16th Caribbean Geological Conference



A report

The 16th Caribbean Geological Conference was held in Georgetown, Barbados from 2002 June 15th to 22nd. The 200⁺ participants were treated to 100⁺ papers in 3 concurrent sessions of Caribbean Geology, under the following themes:

- Oil and Gas
- Cultural, Economic and Educational
- Tectonics, Petrology and Volcanism
- Palaeontology and Stratigraphy

Pre- and Post-conference field trips were put on in Barbados and St Vincent.

Some of the conference highlights included:

1. *Update on locally and regionally significant IGCP Project 433 (Caribbean Plate Tectonics).*
 - ❖ Useful websites for more information on this project include:
<http://www.ig.utexas.edu/CaribPlate/CaribPlate.html>
; <http://www.egroups.com/list/carib/>
 - ❖ A model for an autochthonous origin for the Caribbean Plate versus the more widely accepted allochthonous origin was presented. We can expect to hear more about this in the future.
 - ❖ Update on the work on Caribbean Plate reconstruction by GSTT member James Pindell.
2. *Large number of papers on the geological aspects of Trinidad & Tobago and Barbados' oil and gas industries. In the case of the latter, the increase in geological investigations may be consequent on the award of large blocks of Barbados marine acreage to Conoco, under exploration licence. The work is showing that there may be a closer link between our two islands than previously discerned.*
3. *Integration of 1,2 above.*

4. *High level of discussion on all aspects of Caribbean geology, due in large part to the relatively small conference size and the enthusiasm and long term commitment of the workers in the area.*

Congratulations to all the GSTT membership on the sterling contribution they made to the success that this conference undoubtedly was. The GSTT and its members:

- Contributed ± 25 papers
- Manned a booth, showcasing its publications, website, membership information, maps
- Sponsored the Best Field Trip and Best Poster Awards
- Provided session chairpersons
- Sponsored the "Best of GSTT 1999 – 2001" presentation.

Congratulations also go out to the winners of

- ✓ Best Poster (Hertig and Ver Hoeve)
- ✓ Best Papers for the "Oil & Gas" (Ver Hoeve, Sharp, Garber, Zempel, Noble, Hertig)
- ✓ Best Papers for "Tectonics, Petrology and Volcanism" (Weber)

The next Caribbean Geological Conference is in Margarita, Venezuela in 2005

Carol Telemaque

Technical Sessions & formal functions

The period April to July 2002 was very active in terms of technical presentations and sessions to GSTT members, as the listing below will show. We would like to thank the following for their time and contribution to the benefit of society's members.

April 17th - Mr. Daniel Ragona for his presentation entitled "Trinidad's active tectonics: High resolution acoustic imaging and paleoseismology of active offshore faults".

April 24th - Dr. C. Prentice, Dr. J. Weber, Mr. D. Ragona and Mr. C. Crosby, for the presentation entitled "New Geomorphic and

Paleoseismic results, Central Range Fault, Trinidad”.

May 15th - Dr. James MacKay for his presentation entitled “Exploration Risk Assessment: What is it? How is it done? Who is responsible?”

May 22nd – Seminar for GSTT members on “Pore Pressure, software Prevue” led by Mr. Mark Harkommer

June 3-7th – GSTT short course on Structural Styles and Hydrocarbon Traps in Fold - Thrust Belts, led by Dr. Shankar Mitra from June 3-7th.

June 5th - Dr. Shankar Mitra for his presentation entitled “Subsurface Structural interpretation in Fold and Thrust belts”.

June 20th - Dr. J. Pindell for his presentation entitled “The four Cenozoic stages of structural development in the Eastern Venezuela – Trinidad Basin”.

July 10th - S. Randazo, B. Caferelli, J. Gagliardi of PGS Seafloor Seismic for the presentation entitled “Four Component Seismic Applications in Trinidad & Tobago”.

May 10th – GSTT members were invited to an Energy Luncheon put on by the South Trinidad Chamber of Industry and Commerce where the main topic was “The Future of Gas to Liquids, GTL, Technology”. If you desire to contribute to future technical sessions, contact John Chambers (Venture Production) at jchambers@vptl.co.tt or 868-677-2467. Please refer to the ‘On the Calendar’ for upcoming technical sessions organized by the GSTT.

VIII Simposio Bolivariano

“Unravelling the Potential”

The Columbian Association of Petroleum Geologists and Geophysicists is pleased to invite petroleum industry professionals, executives and scientists to participate in the VIII Simposio Bolivariano “Petroleum Exploration in the Sub Andean Basins”, which will take place September 21 to 24th 2003. Simultaneous translation in English

and Spanish will be provided. The deadline for abstracts (250 words maximum) is February 15th 2003. Further information can be obtained from the Symposium’s web page, www.simposiobolivariano.org, or contact Ms. Carolyn Roberts, Ministry of Energy and Energy Industries, at croberts@energy.gov.tt.

GEOLOGICAL SOCIETY OF
TRINIDAD & TOBAGO

ANNUAL GENERAL MEETING

Wednesday October 2nd 2002

Trinidad & Tobago Institute of
Technology, Esperanza Road, Brechin
Castle, Couva

Feature Article

A Career plan for young Geologist

Mariano Carrera.

Introduction

Geologists mix the scientific forum with imagination and creativity to produce a useful product for the wider community. They are caretakers of the earth’s resources (Merrill, 1997). Therefore the training of these individuals should be a matter of great importance. This training should not end at university but should continue throughout the individual’s professional career. Geology can be used in areas as diverse as mining to deciding on energy policies. Geology is also a great starting point for any scientist (or any professional) as it helps develop the thinking spatially. Geology should be viewed as a tool whose operator is using it to constantly improve the output.

Checklist

In deciding to pursue a career in geology the individual should consider what s/he likes to do, what are his/her strengths and what are the job options available? The individual should try to learn about the subject by reading books (e.g. Rose, Peter 1993, an excellent reference for even

those who are professional geologists). Talking with professional geologists, getting a holiday job with a geologist or within the geological environment are other means of learning about the profession. This would positively open the world of geology to the individual. At present some of the best A' Level students are pursuing the Geosciences Programme at UWI St. Augustine but this may not be enough since imagination and creativity are just as important as a good academic grounding. The emphasis on science students may limit the growth of the field. Art students would help mix the student body and add a varied perspective to the course.

Eve Sprunt (1997) said plan, ask, learn, do and enjoy when it comes to managing your energy career. This can be applied to those in geology as well. These maxims can be used as checklist for the individual who is deciding to pursue geology or any other career choice.

Hiring in geology is cyclic thus every geologist needs a broad, multidiscipline base. There will be times when employment may be difficult and overspecialisation could prove detrimental. To help with this cyclic pattern of opportunities, a potentially profitable hobby may be useful. Be prepared to use other skills to keep busy during slow periods but know it's only for a short time.

Continual development of any geologist is important. Thus consider pursuing an MSc programme in the near future as this would help to develop the required critical and analytical thinking and broaden the individual knowledge of many fields where there are new opportunities. We have seen the use of field trips and courses being offered to help the geologist develop skills. Geologist should not only be students but also leaders and be willing to take charge of the situation and impart their knowledge to others. This can be done through technical sessions, professional courses and contributing to our Universities. Ultimately professionals would develop the aspect of geology that requires us to instil knowledge and continually develop skills, which are so important in the work place. Also the exposure to others in training session helps in widening our view as it is an environment in which ideas can be shared and discussed with a

moderator and audience who are all there to learn.

Part of the training of all geologists is an internship with some companies. This should be done on a larger scale than it is done at present. These internships should not only be limited to petroleum geologist but other aspects such as business development. One of the best entry points to geologists in the petroleum sector is through the Service Companies. This practical operations end of the job gives the individual an appreciation of their work and also helps relate to persons whom he/she will depend on to provide a service or request.

As petroleum geologists, working exploration plays, we know there may be various interpretations of the subsurface, especially working with only two dimensional (2D) and even with three dimensional (3D) seismic. Producing a convincing prospect proposal requires not only good scientific basis but also a good sell that takes into consideration the views of others. 3D modelling helps when putting forward various views but actually designing a working model still takes a lot of human creativity. The ability to sell an idea or prospect is important and vital to a geologist thus developing marketing and selling skills may be of critical importance to the individual in the future.

Work place

Attitude is important on entering the work place. Have a positive approach and be flexible because you might find the job to which you are employed is not as exciting and rewarding as first thought, but it may be a necessary stepping-stone to something better. Also be confident in yourself and your employability. If you are doing a job that you do not like, leave. A positive approach helps with persons around you and makes the work environment more pleasant. Attitude plays an important part in any work environment and the young geologist must remember that s/he will be dealing with a wide cross section of people in the years to come. Differences must be looked upon not as something to get upset or angry about. Learn to live with the persons' idiosyncrasies. Professionalism is a continuous development of the individual resulting in a

positive influence around him/her. Always remember this as you move through your career growth plan.

On entering the work place, the young geologist should look for companies that offer good training and mentorship programmes. These companies are usually the larger service or operator companies. The larger companies and state companies are sometimes good as a starting point in the career of a geologist as they offer a broad view of the field and sub-disciplines to which one might be better suited. However the practical aspect of geology must be given a high degree of importance.

The employee should take the initiative and plan his/her own training needs. Some of these training needs may be available online and could be relatively cheap and usable for even more experienced persons. See for example www.oilandgastraining.com. The development of one's own training plan is useful also for employers of geologists. The employers can work closer with the geologist in maximizing their returns on money spent on training.

It is important for the young geologist entering the work place also to remember that all persons have something to contribute to his/her work. There are many assistants who through the years have worked with several different geologists and learnt from them, these experiences can be passed on to a beginner who is willing to learn, inquisitive, firm and focused.

Networking is another area in which most geologists should get involved. Networking means being active in professional societies, giving presentations, being known positively and the ability for polite interaction with people. We should endeavour to meet persons not only in our field but others in the industry in which we work. In the petroleum industry it may be useful to attend meetings of other organizations (such as the Society of Petroleum Engineers) and have a few acquaintances that you may be able to call upon for information, direction, or to share information on a topic of mutual interest. Networking is a two-way scenario. You must be willing to share information, work evenly and at times deal with people and their problems and joys. However respect you company's position

on information sharing and state this clearly. It may not be only work related. Networking is also good for career guidance, mentoring and seeing things from a different perspective.

Ethical behaviour is paramount in anything a professional does. A geologist should at all times be honest in what s/he is doing. Give reference to others whose work you may use in a study, paper or presentation. A geologist should not be involved in situations where s/he overstates or understates the potential of something because of monetary gain or company instructions. If asked to do some unethical in making that big deal, do not do it. Personal integrity and skills are the most important attributes a professional has and by partaking in unethical activities reduces ones worth. It is better to leave. This will pay off in the long run as your worth increases when your future employers know that they can count on you.

Contributions

Geologists, as they progress professionally and even as a student, should write articles for themselves and the wider community since contributes to a wider understanding of the subject. Writing is an intellectual activity that most Caribbean geologists do not pursue. It is an avenue to track one's own growth, focus and to keep managers happy. We may not be a 'Stephen Gould' type writer but in relating to others we help contribute to a learning society. There are many areas of pursuits that may not only influence geological development but also social policy in the areas of environment, hazard planning and infrastructure development.

Participation in social activities may be another good method for a geologist to contribute to society. Community organizations and societies help in spreading the awareness and importance of geology. In hiking and camping, a geologist can contribute to the geological literature of an area. There may be no monetary gain from these ventures but it could prove relaxing and rewarding.

Alternative to oil

Ms. Robbie Gries, president of the American Association of Petroleum Geologists (AAPG), recently emphasized the imaginative point on a

recent visit to Trinidad. Using creativity and borrowing from recent computer firms in the computer industry can be useful. Not only knowledge but also an entrepreneurial spirit is needed. Geologists now increasingly dependent on software and technology and this provides an avenue for future graduates. Software development to meet the needs of geologists and support to geologist working with this new technology is important.

Geomechanics and stability experts are not often present in the Caribbean and engineers whose views may be skewed, based on their training, generally take their roles. Geologists can make a contribution here but need to take the initiative and expand into the realms of this vast subject. Thus by working together, and applying both views, in the field the concepts and practices of geomechanics may be better developed.

Land development and environmental development is a growing concern in the Caribbean and Geologists can make a significant impact in this field. Landslides and flooding hazards affect most islands thus there are room for geologists to get involved in the planning and development of Caribbean infrastructure.

Teaching is an area which, except in some companies with a well-developed mentoring programmes, most of us do not consider. Teaching at the Pre University and University level is important for continuity of stream of professionals to enter the work place. We thus need postgraduate qualifications in addition to professional certification. UWI St Augustine needs a postgraduate programme but do we have the lecturers for this?

Research in geology appears not pursued much by Anglo-Caribbean persons as seen by papers published and post graduates from UWI especially as relates to the oilfield. This is an area that can be developed. Research and even Development affects us in the Caribbean as we are general importers of technology though sometimes the generators of ideas. MSc. and PhDs are required for this area but there are areas of opportunity for those who wish to pursue the field.

A foreign language is also important in the training of new geologists. This is to facilitate

movement around the Caribbean and exposing ourselves to reports and papers written in other languages. How many of us know about the Geology of Suriname though it is next to Guyana. It may hold the hope of petroleum and mining boom.

Water Resource management is another area that can be considered in the development of geological studies. This vital resource must be developed and managed properly. In the Anglophone Caribbean there are many small islands whose aquifer systems need to be managed so that depletion and pollution does not cause a shortage.

Conclusion

In summary it can be said that a geologist should aspire to not only gain technical competence but be able to mix this with "soft skills" (Fattahi & Riddle 2001) i.e. teamwork, leveraging diversity of perspectives, business and critical and problem solving skills. This multidiscipline approach when mixed with appropriate technology can be beneficial to the individual and his company. The geologist as the caretaker of the earth's resources can then be fulfilled at different levels.

Acknowledgements

I found *Guiding Your Career as a Professional Geologist* edited by Peter Rose an excellent guide, which compressed all the major aspects of a geologist career. Some chapters provided the basic ideas for this paper in addition to practical experience as a geologist.

References

- Fattahi & Riddle 2001: Competency Ingredients for the Successful Petroleum Professional in the New Millennium. SPE Western Regional Meeting, March 2001 (taken from SPE website 27th April 2002).
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- Rose, Peter 1993, Ed.: *Guiding your Career as a Professional Geologist*. DPA American Association of Petroleum Geologist, Tulsa USA.
- Sprunt, E., 1997: Managing you energy career. Oil and Gas Journal, October 1997 Supplemental (taken from Agiweb.org on 25th April 2002).

On the Calendar

This column features upcoming events and sessions to be held by the GSTT. For further information on any event, contact the Secretariat Administrator, Ms. Gayatri Maharaj, at gstt@tstt.net or call 868-679-6064.

We Liming!

GSTT Family Day Lime at Beach Camp,



Palo Seco Mud Volcano

Palo Seco on Sunday August 25th, 2002. First notices have already been sent out. Activities include a beach walk along the south coast (good outcrops of Pliocene Cruse Formation), a jungle walk to Palo Seco mud volcano and finally relax with food (BBQ) and drinks at Beach Camp Club.

Technical Sessions

September

- 4th September, Dr. Richard Swarbick (Overpressure)

October

- 1st October, Mr. Berend van Hoorn, (Geological Setting of Deep Water Petroleum Systems – a global comparison).

For more information, contact John Chambers at Venture Production Company (jchambers@vptl.co.tt)

Technical Short course

Overpressure in Petroleum Systems.

The instructor, Dr. Richard Swarbick, is the Managing Director of Geopressure Technology Limited and a Lecturer in Petroleum Geology and the University of Durham. The course will be held from September 24-26th, 2002 at the Trinidad & Tobago Institute of Technology, Couva. Deadline for registration is 13th September 2002.

Letter to the Editor

In the January 2002 issue of the Hammer, Ms. Inniss makes an excellent observation and suggestion regarding career guidance in the country's schools. When I left CIC to go to University I really had no idea that geology could offer such an exciting and rewarding career. I switched to Geology after completing my first degree in Biology.

The company I work for, Conoco, supports the AAPG efforts to educate students in geology beginning in primary schools, and through the secondary levels. I have such pleasant memories of taking rock sample sets to a class of 7 or 8 year olds and, for an hour, see how enthusiastic they were to learn about the earth sciences. I've also been part of Conoco's recruiting efforts at major universities for entry-level geologists.

So, my suggestion would be to have a group of GSTT geologists who would be willing to travel to the primary and secondary schools throughout Trinidad and Tobago to introduce our children to geology and its connection to our daily lives, from the rocks to careers, and how petroleum products are such an integral part of our daily lives.

Maybe the Education Committee has already extended its program to include the primary

schools, but I thought I would add something from my personal experience.

Thanks and regards.

Robert Chanpong

Natuna Sea Gas Project

Conoco, Jakarta, Indonesia.



Can you identify this outcrop?

Where was this photo most likely to be taken?

- Mayaro, southeast coast
- Rockly Bay, Tobago
- Toco, northeast coast
- Cedros, Southwest coast

See the editorial note for the answer.

SPE Corner

The SPE elected their new executive for the 2002/2003 term at their Annual General Meeting that was held on May 29, 2002. The members elected were as follows:

Dr. Tennyson Jagai was elected as Chairman, while respective Chairpersons include Wendy Chadee (programme), Nigel Sookdeo (Finance/ social/ Quiz), Rupert Mends (Membership) and Godfrey Ransome (Secretary). Officers:

Directors of the SPE are Danny Dorsey, Anisa Ali, Roger Packer, Stephen Wattley, Selwyn Lashley and Keith Eddy.

The annual Dinner, Dance and Awards Function was held on June 22nd at the Trinidad Hilton.

Editorial Note

Once again, the editorial committee is pleased to put forward another issue of the GSTT newsletter. Special mention must be made to John Chambers and the technical committee for such a high level of activity over the past few months. Thanks to Mr. Mario Carrera (Venture) for this issue's feature article. Again, we encourage your contribution, which can be sent to hvincent@energy.gov.tt. To contribute to any of the GSTT's activities, please contact Ms. Gayatri Maharaj at 868-679-6064 or gstt@tstt.net.tt.

The photo displayed within our earlier feature was taken looking north from Cedros Point, southwest Trinidad. It is a photo of the Pleistocene aged Porcellanite deposits that are commonly found within the Erin and Talparo Formations.

Hasley Vincent

Richard Robertson