



Newsletter Of The Geologic Society Of Trinidad and Tobago

February 2001

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

Web address: www.gstt.org Editor : millikm1@bp.com

New Executive

Congratulations to the new Executive Committee. They are:

Dr. Lawrence Tiezzi - President
Dr. Krishna Persad - 1st Vice Pres
Tim Gabriel - 2nd Vice Pres
Bruce Eggertson - Treasurer
Dr. Laurent de Verteuil - Secretary
Derek Smith - Companies Rep
Alain Moonsie - Assistant Secretary
Vishram Rambaran - Past President

Presidents Address

Dr. Lawrence J. Tiezzi

These are challenging and exciting times in the Petroleum Industry. We are witnessing the rise of small entrepreneurial energy companies. The gas business is experiencing rapid growth in T&T and in so doing it has become a global model for government and industry partnership.

Geoscientists play critical roles in all of these situations. As such, the GSTT has a very important role to play not only in geoscience but also in the entire community.

Through the hard work and efforts of the many people that have preceded us, the GSTT is a strong organization on sound footing. This foundation is what allows us to take the next steps in the next evolutionary stage of this society. While continuing much of the previous efforts of the GSTT, the executive has set 3 major objectives for 2001:

1. **Enhance the GSTT structure**
2. **Develop human capability**
3. **Be part of the public dialogue on energy matters.**

In service of the first objective, we have agreed to a temporary home for the GSTT. This has been provided by Petrotrin and will be renovated with funds from the GSTT. Derek Smith leads the committee charged with determining the best location for a permanent home. In

addition, the executive believes that the time has come to establish permanent support for the GSTT. To this end it has decided to set up a secretariat .

We have changed the procedures that we use to charge for membership which allows us to be able to better track our membership and thus to be in a position to provide better benefits to our members.

There are a number of projects that are dedicated to educating and developing human capability. One is our current quest to find a home for our newly acquired ARCO worldwide exploration library. Another, I am delighted to report, is that we are well on our way to completing a schedule of on-going educational training for the year. We are also working hard to finalise a way forward for the Institute of Petroleum Studies to provide advanced geoscience degrees in Trinidad in affiliation with either a U.S. or U.K. university. The training will be done in Trinidad and the degree will be recognized globally.

The GSTT is a supporter of "Energy Alive" and a co-convenor of the So. Chamber of Commerce GSTT Energy Conference. We plan to facilitate other public forums as well. We plan to work with government, industry and the press to make sure the thoughts of our members are heard and lead to a better Trinidad and Tobago.

As you can see, we are already working determinedly to create a year in which all our members and the country are positively impacted. With that in mind, we welcome your thoughts and your help in trying to make this year one of the most productive for the GSTT.

Past Presidents Address

Vishram Rambaran

It is inevitable that a President's term come to an end, but when that time comes he must leave office with a sense of accomplishment such that the society is in a better position compared to when the new executive accepted the responsibilities of the society. When I took up the challenge and decided to run for the post of President I did it out of passion, not fully understanding the task, responsibilities and status the position

bestowed upon an individual. Regardless of the challenges, the term as President was rewarding and enjoyable. I strongly believe that my tasks were made much easier as a result of the commitment and dedication of the past executive. I thank them for their support, generosity and their precious time they gave unselfishly. Members of the 1999/2000 executive were:

- President, Vishram Rambaran, Venture Production Trinidad
- 1st Vice President, Alan de LaBastide, BP/Amoco Trinidad
- 2nd Vice President, Dr. Krishna Persad, KPA and Associates
- Treasure, DereK Meighu, Petrotrin
- Secretary, Dr. Laurent de Verteuil, Latinum Services
- Assistant Secretary, Hasley Vincent, Petrotrin
- Corporate Rep., Eric Williams, Maranatha Geophysical
- Non Petroleum, Kevin Marshall, Geo- Consultant

During the 1999/2000 term, nine executive meetings were held to conduct the business of the society and the very first task the new executive faced was the planning and hosting of the 1999 Dinner, Dance and Award Ceremony. How appropriate it was to enter the new millennium with a feature address that emphasise the aims and objectives of the GSTT and the reasons the organisation was formed. Dr. Krishna Persad delivered the feature address, **“The History of the GSTT and the need for a Committed Membership.”**

To achieve the society aims and objectives, eight sub-committees were put in place. The sub-committees and the respective chairpersons were:

- Technical, Neil Lewis, EOG and Vishram Rambaran, Venture Production.
- Field Trips, Dr. Laurent de Verteuil, Petrotrin/Lithium Services
- Newsletter/Publication, Neil Lewis, EOG
- Career Guidance Helena Inniss, MOE&EI
- Continuing Education Victor Young On, Petrotrin
- Web Site Curtis Archie, Petrotrin
- GSTT 2000 Conference Anthony Richardson, BP/Amoco Trinidad Limited.
- GSTT Home Derek Smith, PPSL/Victor Young On, Petrotrin.

As expected the technical sessions were all well attended as they address issues and topics relevant to members. Technical sessions providing an insight into the exploration of the deep-water blocks drew the most interest. The society hosted seven technical sessions during the 1999/2000 term. These were:

1. Geo-Hazards and The Montserrat Experience - *Dr. Keith Rowley, Seismic Research Unit*
2. Kick 'em Jenny submarine volcano - *Dr. John Shepherd, Seismic Research Unit*

3. Exploration in the Deepwater Orinoco Basin - *Dr. Daniel Truempy, Shell*
4. Using 4C Seismic Acquisition to Image Reservoir Below Shallow Gas Sands- Case Example, Valhall Field Norway - *Olav Inge Barkved, bp/Amoco*
5. Deep Water Exploration – A Global History, What works and Why - *Dr. Ian Vann, bp/Amoco*
6. Active Faulting In Central Trinidad – Discovery, Investigation and Confirmation - *Dr. John Weber, Grand Valley State University*
7. Where are you in space? – The Surveying Problem - *Dr. Dexter Davis,*

Two field trips were schedule during the 1999/2000 term. The Society went beyond its bounds as the first field trip was to the island of Montserrat, which was devastated by volcanic activities. Leading the Montserrat Volcanic Disaster field trip was Dr. Jill Simon of The Montserrat Seismic Unit And Dr. Laurent de Verteuil of Petrotrin. In addition to emphasising the power of geological forces, overseas field trips add a new dimension to the activities on the GSTT's calendar of events. If we were to judge from the response to the Montserrat field trip, an overseas field trip should be on the GSTT's agenda. The other field trip held was on the Structural Features in the Northern Ranges and was led by Dr. John Weber of Grand Valley State University.

The GSTT continues to support the Ministry of Energy and Energy Industries in their effort to promote the Energy Alive Quiz show, especially through the services of Mr. Mahendra Nath. I must say that the quiz show has been an overwhelming success. In our efforts to promote the geosciences as a preferred profession, the GSTT offers a bursary to an outstanding 'Trinibagonian' student pursuing geology at the University of the West Indies, Mona Campus. During the 1999/2000 term the executive increased the award from \$5000 to \$7500. The GSTT also targeted the secondary schools as members were invited to deliver career guidance lectures at various schools throughout the country.

As you are aware, the GSTT for all intent and purpose is an international organisation, as our membership comprises of individuals residing and working in numerous countries. If we are to maintain that international flavour a Website is of utmost importance. The Website was commissioned in 1998 and is currently maintained and updated by Website manager, Mr. Curtis Archie. His efforts have resulted in the GSTT running this sit at minimal cost. Members should take the opportunity to visit the site and not only criticise its content but must also take the time to provide Curtis with useful information to update, populate and structure the Website. The Website belongs to the society and we are all responsible for having a friendly and informative Website.

The GSTT held 2 conferences in the year 2000 and this was a first for the GSTT. The first was a joint conference held with the South Chamber of Commerce from February 7th – 9th 2000 at the Gulf City Auditorium.

The theme of this conference was “**The 2000 Petroleum Conference and Trade Show**”. The GSTT executive, especially Dr. Krishna Persad was actively involved in organising this conference. From all indication this conference was a success. The Second conference hosted by the GSTT was held at the Hilton Hotel from 10th – 13th July 2000. The theme of this conference was “**GSTT2000 SPE - Forging Ahead with Science and Technology**”. A decision was taken by the executive in consultation with the 2000 Conference Committee to jointly host the 4th Geological Conference of The GSTT with the Society of Petroleum Engineers, as their conference was also schedule for the second quarter of 2000. Even though there were lots of differences with respect to how each society conducted their conferences, the conference was a success as these differences were either fully resolved or some common grounds were found in which to operate. The executive, on behalf of its members thanks Mr. Anthony Richardson and his team for a job well done.

Over the years The Geological Society of Trinidad and Tobago has grown in status and is regarded by many, as an influential organisation. As a society we must continue that trend. The incoming executive has both the wisdom and commitment to continue that trend. I wish the new executive all the best in the upcoming term.

From the UK

Vincent Hasley

The Petroleum Exploration Society of Great Britain, Institute of Petroleum and the Division of Environmental Geoscience (AAPG) are holding a joint one-day seminar on the 6th March 2001 in Aberdeen, Scotland. Through a series of talks, industry and environmental experts will address the range of impacts of the UK offshore oil and gas industry on the flora and fauna of the marine environment and demonstrate the extent to which the industry has succeeded in addressing them. Topics include “environmental challenges for deep water exploration and production”, “support process for environmental decision making”, “impact of off shore oil & gas industry on marine mammals” and others.

Further details and registration information can be obtained from www.pesgb.org.uk and www.aapg.org/deg.

Authorities in Barbados have initiated plans to revive drilling activity in the Woodbourne area, suspended since the low oil prices of early 1999. The highlight of this revival is the fact that the field is about to benefit from the first ever horizontal well to be drilled on the island.

The Woodbourne field produces about 7000 bopd and lies about 16 km from Bridgetown.

From: PESGB (Petroleum Exploration Society of Great Britain) January 2001 Newsletter

Recent Publication on the oil industry in Trinidad.

Wood, Leslie. J., (2000), Chronostratigraphy and tectonostratigraphy of the Columbus Basin, eastern offshore Trinidad. AAPG Bulletin, V.84, No. 12 pp. 1905-1928.

Naming the Newsletter

The GSTT is having a naming contest for the newsletter! What is your idea. Send an email with your idea to the editor at millikm1@bp.com. A distinguished panel of judges will choose the winner. The fabulous prize for the winner is an Estwing rock hammer.

GSTT 2001 Field Trips

Dr. Laurent de Verteuil

The 2001 GSTT Field Trip program is currently being put together. A minimum of Four trips are planned, with one overseas trip to Eastern Venezuela. The lead-off trip, in March, will be a visit to Chert Hill and other Cretaceous outcrops of the Central Range. During the summer a trip to Soldado Rock may be in the cards. Finally, in the rainy season proper when the beach outcrops are well washed down, a trip to look at the structure, sedimentology and petroleum geology of the Quinam area, is on the drawing board. In addition, GSTT members will lead a field trip for Prof. Ricardo Clarke's Environmental Physics class to the Mayaro coastal sections.

- March: Chert Hill and other Central Range Cretaceous outcrops — Dr. John Frampton
- March: UWI Student Trip: Mayaro Coast — Mr. Bruce Eggertson and Dr. Laurent de Verteuil
- May: Lower Tertiary structure and stratigraphy of Eastern Venezuela — Dr. Jim Pindell (postponed from April)
- June – Aug: Soldado Rock: do it once! (at least) — Dr. Laurent de Verteuil and Dr. John Frampton
- October: Crusein' Quinam: Structure, Sedimentology and Petroleum — Mr. Walter Cukavak and Dr. Laurent de Verteuil

Stay tuned for breaking details of these trips and get ready to get out into the field this year for Rox and Beers with the GSTT!

Field Trip Report -- GSTT in Monserrat

Victor Young On, Petrotrin,
 Santa Flora, Trinidad, W.I.
 (After Field Guide by MVO, Montserrat)

A two-day field trip to the island of Montserrat was organized by Field Trip Committee Chairman, Dr. Laurent de Verteuil and took place from October 30-31, 1999. Some 16 GSTT participants were led in the field by researcher Dr. Gill Norton of the Montserrat Volcanic Observatory (MVO) with the able assistance of Georges Boudon, fellow researcher at the observatory. The field trip participants were as follows:

Victor Young On,	Petrotrin
Richard Oliver,	MOE
Carral Alexander,	MOE
Krishna Persad,	KPA
Laurent de Verteuil,	Petrotrin
Don Fox,	Trinmar
Steve Wattley,	PPSL
Derek Meighu,	Petrotrin
Winston Ali,	Trinmar
Chris Lakhan,	Petrotrin
Bruce Eggertson,	BP
Sean Mohammed,	Petrotrin
Saira Ragbir,	Petrotrin
Francis Inniss,	Trinmar
Hayden Romano,	National Quarries
Selwyn Gomes,	Field Naturalists Club.

INTRODUCTION

The island of Montserrat is located in the northern part of the Lesser Antilles island arc, Fig. 1. Nearly all the islands along the arc are characterized by volcanoes extruding basaltic andesite - andesite lava and are usually associated with explosive eruptions, lava domes, pyroclastic flows and occasional lava flows. Montserrat's Soufriere volcano erupted violently in 1996 and has continued its activity even as recent as January 2001 (MVO website).

Montserrat is comprised of three such volcanic andesite mountain massifs, Silver Hills in the north, Centre Hills in the centre and Soufriere Hills - South Soufriere Hills in the south, as shown in the Geologic map of Fig.2. The South Soufriere Hills however are predominantly basalt - basaltic andesite in composition. The three massifs are geomorphologically distinct in terms of maturity of erosion and their relative ages from oldest to youngest are Silver Hills (1-2.6 Ma), Centre Hills (0.5 -1 Ma) and Soufriere Hills / South Soufriere Hills (~220 ka). The island's main rock deposits are remnants of andesitic domes, andesite breccias representing dome talus, pyroclastic flows from dome collapses, lahar and debris avalanche deposits and thin, subordinate tephra fall deposit.

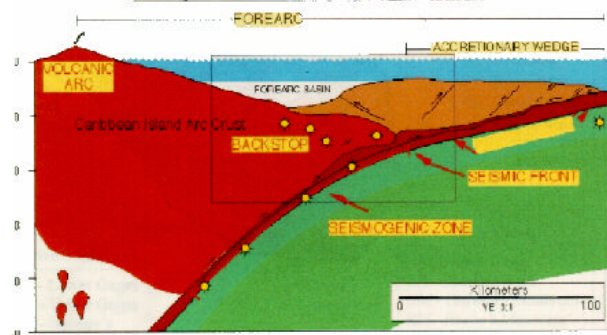
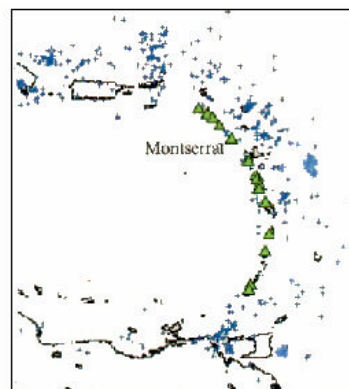


Figure 1: Location of Montserrat in the Lesser Antilles island arc and cross section of the arc

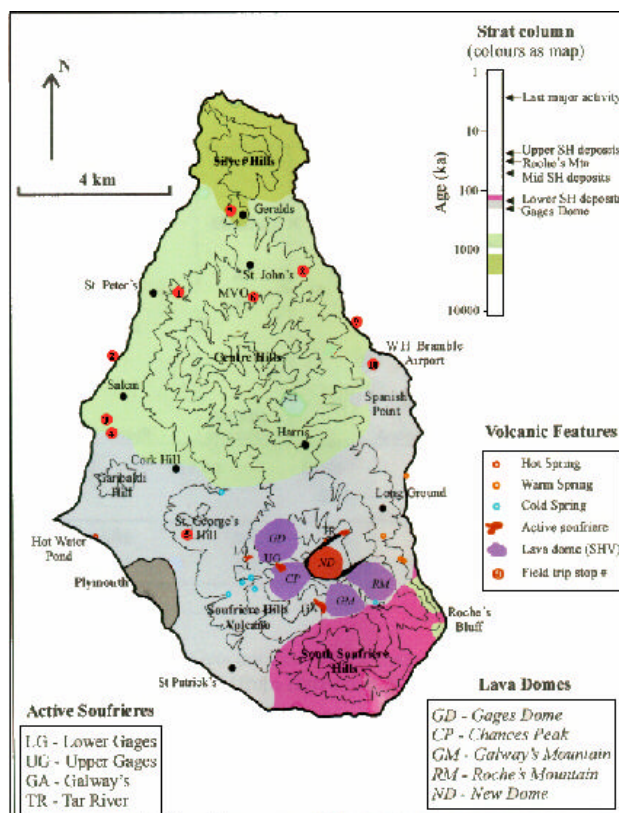


Figure 2: Geological map of Montserrat, volcanic features and field stop locations

The field trip provided participants with an overview of Montserrat's surface geology and an appreciation for the awesome power of the Soufriere volcano and the wide variability and scale of its resultant devastation. The ongoing research and monitoring role of the MVO

is absolutely essential for the protection of human life on the island and the resultant observations and reports from the observatory can be a vital resource for eruption prediction on the other volcanic isles of the Caribbean. The work of the MVO serves as an example of the effort and technology that would be required by other Caribbean governments in managing volcanic hazards. It is hoped that Montserrat's example will encourage citizens of other Caribbean countries to pursue studies in volcanology and to take on the responsibility of managing their own respective volcanic hazards.

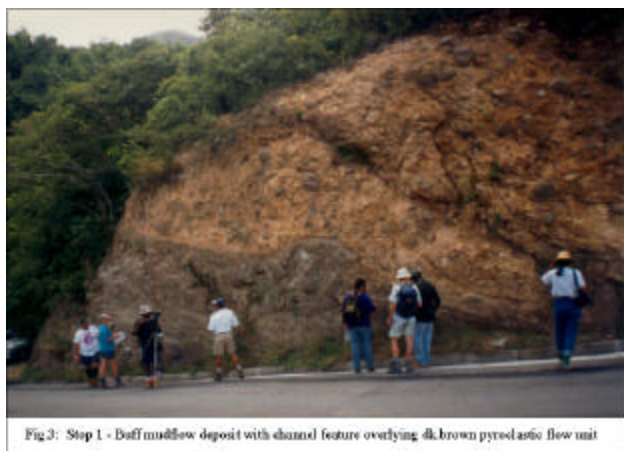
DAY ONE

STOP 1

Hilltop/Soldier Ghaut/Centre Hills

This roadside outcrop is located on the northwestern flank of the Centre Hills structure and shows the typical volcanoclastic deposits that evolved from the ancient Centre Hills volcano. The beds exhibit shallow dip away from the central part of the massif, which is mostly composed of eroded dome rocks. The several units exposed at this outcrop show a variety of lithologies laid down by primary and secondary volcanoclastic flow processes.

It is often difficult to distinguish between secondary mudflow or lahar deposits and primary pyroclastic flow deposits. Generally primary deposits have more angular clasts. Secondary deposits also have more mixed lithologies due to its sourcing from the erosion of many different lithologies. Near the base of the Centre Hills exposure, the photo of **Fig. 3** shows an upper, buff coloured secondary mudflow unit with a channel feature filled with large rounded boulders. This unit unconformably overlies a dark brown primary pyroclastic flow deposit. The contact surface gently dips 10° NW.



The steep sided valley observed below the road is Soldier ghaut, one of the typical young river valleys that cut into the Centre Hills. Interestingly, the name Montserrat was given to the island by Columbus because of its many serrated valleys and its resemblance to the terrain of Montserrat in Spain.

STOP 2

Woodlands Beach - black sand beaches and reefs

The Woodlands beach is located on the coast directly west of the Centre Hills. This stop shows the volcanically derived black sand deposits that are typical of beaches in Montserrat. Its constituents are largely magnetite, with some hypersthene, ilmenite, augite, feldspar, hornblende and quartz. (MacGregor, 1931).

The main feature along the cliffs of the beach is a pumice fall deposit of 5m thickness near the top of the exposure. It appears to drape over the underlying topography and is rock evidence of the past explosions that were associated with the Centre Hills volcano.

STOP 3

Old Towne - volcano view

This stop in the parking lot of an Old Towne golf course provides an excellent view of the Soufriere Hills volcano. A photo of this southeast looking view (**Fig. 4**) shows the active New Dome in the background with its summit obscured by a cloud of steam.



The mountain in front of the volcano is Gages Mountain the oldest Soufriere dome, dated as 223 ± 7 ka. To the right of Gages Mountain is Chances Peak, which was the highest point in Montserrat at 3000 feet - until it was surpassed by New Dome which attained a height of 3400 feet during the eruptions. About 20 ft of ash has been deposited on nearby Chances Peak from the recent eruptions.

To the left (north) of the volcano is Farrel's Plain - the area most severely affected by the volcanic eruption in 1996 when 19 people were killed while tilling their fields in the villages of Strethams, Windy Hill and Harris.

STOP 4

Belham Valley - mudflow deposits

Belham valley shows the large extent of lahars or mudflows that were sourced from the Farrell's plain and

Gages mountain where great volumes of new ash and blocks material were deposited by the volcano. **Fig.5** shows a south east looking view of Belham valley.



Fig. 5: Stop 4 - SE view of recent mudflow deposits derived from Soufriere filling the Belham Valley

It gives an idea of the disaster potential of the extremely mobile mudflows that filled the river course in the foreground. Soufriere volcano is shown in the background and the Belham valley emerges in the foreground between the Centre Hills on the left and St. George's Hill on the right.

The Belham valley is an important divide between the deposits of the Centre Hills and those of the Soufriere-South Soufriere Hills. It also serves as an important risk boundary for the current volcanic eruptions as seen in map of **Fig.6**.

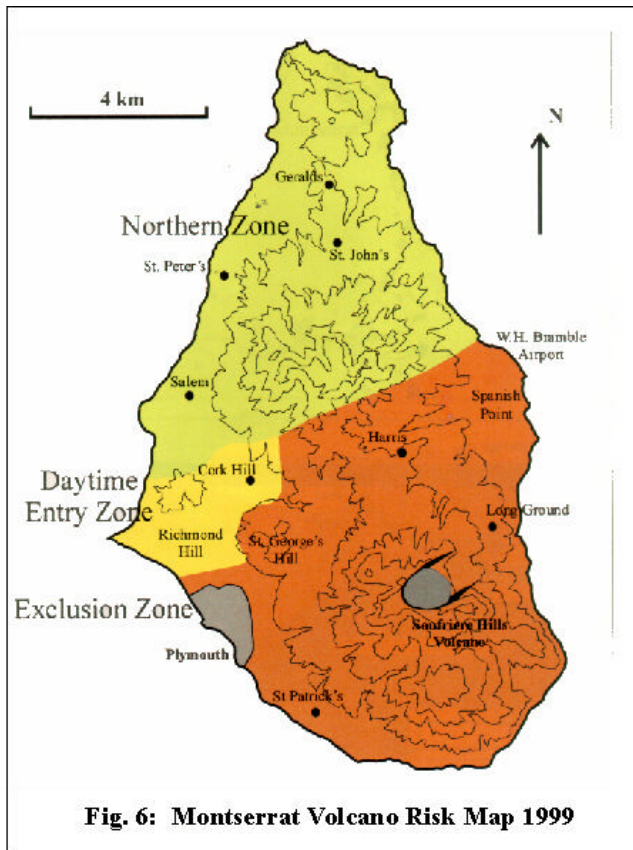


Fig. 6: Montserrat Volcano Risk Map 1999

STOP 5

St. Georges Hill: Overview of Plymouth and the south west

St. Georges Hill is comprised of deposits from the Soufriere Hills - South Soufriere Hills succession. Exposures show predominantly block and ash flow deposits with subordinate pumiceous deposits. It is a key monitoring location for the MVO with two seismic stations and EDM and GPS temporary stations, and SO₂ diffusion and ash collection locations.



Fig. 7: New Dome rising above Gages Valley with its pyroclastic flows partially covering Plymouth

This stop in the outer area of the exclusion zone provides a panoramic view of the destruction of Plymouth, the capital of Montserrat, due to pyroclastic flows, mudflows and ashfalls down the western flank of the volcano. The view (**Fig.7**) shows the new lava dome rising above Gages valley with its thick volcanic flow deposits sloping down into Plymouth. The two main flows that destroyed the heart of Plymouth occurred in early August 1997. These and subsequent flows have left as much as 30m thick deposits in Gages valley and a combined thickness of about 10m of pyroclastic and mudflows in central Plymouth. Further south, the villages of St.Patrick's and Morris' were swept away by an eruption on December 26, 1997.

As Plymouth is directly west in the prevailing wind direction from the volcano, it was subject to the majority of ash and gas from the eruptions. Some 30 cm of ashfall has led to the widespread collapse of roofs across Plymouth. The acidity of the gas and ash has increased metallic corrosion and killed most vegetation in the area.

DAY TWO

STOP 6

Monitoring Operations and Scientific Research at MVO

This stop provides an overview of the work being undertaken at the MVO. The MVO was established on 18 July 1995 soon after the first phreatic eruption of the Soufriere Hills volcano. The role of the MVO is to monitor the volcano and advise the civilian authorities on the volcanic activity and its associated hazards. It is now a statutory body of the Government of Montserrat and is funded by the U.K. Department for International Development and the Montserrat Government. A resident director, Dr. Simon Young, a deputy director

and seven local staff form the core of the monitoring operations.

At its present temporary location on Mongo Hill, north Montserrat, seismic, deformation, volcanological, gas and environmental techniques are used to monitor the activity of the volcano. The main monitoring comprises of the measurements of earthquakes associated with the volcano. Five main types of seismic signals have been recognized from the Soufriere Hills volcano viz. Volcano tectonic earthquakes, long period earthquakes, hybrid earthquakes, rockfall or pyroclastic flow signals and explosion signals. Volcano-tectonic earthquakes (VTs) are characterized by swarms of high amplitude and high frequency impulses that rapidly decrease in energy and is thought to result from rock fracturing under the volcano. They were common at the start of the eruptions and may be an important tool for eruption prediction. VTs have mainly occurred beneath English's crater at 7km depths, and some under St. Georges Hill and to the northeast under Long Ground.

The MVO also supports research into various aspects of the eruption important for understanding the volcano and they continue to play an important role in public education on the threats posed by volcanoes. In the near future a permanent observatory will be established at Fleming, closer to the volcano.

STOP 7

Silver Hills - old volcanic domes and deposits

This stop at the crest of the Silver Hills examines exposures at the oldest volcanic complex on the island. The exposed dome is 1160 ka. and the nearby outcrops show associated dome talus deposits that are deeply eroded. On the northern coast of Silver Hills, one can observe excellent exposures of pyroclastic flows, ancient domes and debris avalanche deposits that seem to extend into the sea.

The view also shows the rapid recent development of island's northern sector due to relocation of business and homes as a result of the recent volcanic eruptions.

STOP 8

Great North Road – Blakes

Road cuts along the Great North Road exposes a sequence of volcanoclastic rocks deposited from the Centre Hills. It is difficult to correlate these rocks with the Centre Hills westerly exposures observed at Stop 1 due to the rather confined channels of deposition and the erosive nature of the channels that characterize these flow deposits. Significant ashfall or pumice deposits can provide some correlative units of regional extent but these are scarce on Montserrat.

Further south along this road the exposures through the Centre Hills deposits showing debris avalanche flows eroding into underlying pyroclastic flow deposits. The photo in **Figure 8** shows a debris avalanche deposit

consisting of very mixed lithologies and showing much hydrothermal alteration and localized deformation in erosive contact with older pyroclastic deposits. Dates from pumice in upper deposits gives age of 663 ± 49 ka which dates the ancient activity of the Centre Hills volcano



STOP 9

East Coast Sea Cliffs

This stop along the coast at Trant's Bay shows exposures of the Centre Hills deposits. Pyroclastic and mudflow deposits are observed along with overlying pumice fall deposits. The pumiceous rocks are typically associated with numerous hornblende / amphibole crystal inclusions. Some small displacement faults cut and displace the pumice layers in some outcrops.

STOP 10

W.H. Bramble Airport

This stop shows the devastation of the W.H. Bramble Airport by pyroclastic flows from the Soufriere volcano. The cover photo of this Newsletter shows the eastern edge of the pyroclastic flow that reached and destroyed the airport on 21 September 1997. Most of the fine ash and sediment that covers the airport area at present is due to mudflows that came into the area subsequent to the main destructive pyroclastic flow. These mudflows have been associated with several hurricanes that have hit the island in the past two years.

References:

Volcanic Geology of Montserrat, West Indies - Field Guide: MVO Publication

MacGregor, A.G. 1938. The Royal Society Expedition to Montserrat, B.W.I. The volcanic history and petrology of Montserrat with observations on Mt. Pelee, Martinique. Philosophical Transactions of the Royal Society of London, B229: 1-90.

GSTT Dinner and Dance

The Year 2000 GSTT dinner and dance was a huge success. Just in case you missed it, a grand time was had by all. Robert Riley, Chairman of BP Trinidad and Tobago LLC gave the keynote address.



Mr. Riley's talk had several messages. He began with the future of Trinidad and Tobago in the petroleum industry and commented on the already large proven reserves of gas in the country and the postulated very large reserves as yet unfound. This led into the idea that Trinidad and Tobago will be a major player in the global gas markets of the future. Challenges

Mr. Riley pointed out include making mutually beneficial arrangements with the government and companies willing to spend money to exploit those resources and maintaining and improving the human capability of Trinbagonians. These he indicated are both critical to continued growth and development of Trinidad and Tobago. He commented that:

"here in Trinidad and Tobago, effective leadership is one of our greatest challenges. We all want a better world, but expect that the change must take place outside. Effective change requires leadership, and leadership means taking responsibility – firstly for our own actions and results; and for how we define ourselves; and what we say and do about ourselves."

Mr. Riley then commented on what BP is doing to take on this challenge, including training and development of new leaders within the organization hrer and sending BPTT employees to assignments in other parts of the BP organization around the world to get an understanding of how other business units do their respective jobs. He then commented that another part of taking on this challenge is the new aspiration adopted by BP and developed internally by Trinbagonians. It states that :

"BPTT is a pioneer within the BP Global Group with a distinctive Trinbagonian identity. In delivering extraordinary business performance, we will actively participate in the development of this country. We will positively impacting the life of everyone who works for the company, every citizen and the global environment."

Mr. Riley wrapped up his speech by again emphasizing the importance of the gas economy and maximizing the intellectual capability of Trinbagonians.

GSTT Technical Talks

Keith Bally

The GSTT technical talks are on for 2001. The three talks scheduled for March, April and May are as follows:

March 07 (Wednesday) at the Ambassador Hotel, Port of Spain, 6:30 PM: "Caribbean tectonics and aspects of the Cenozoic evolution of Trinidad" - Jim Pindell (Tectonic Analysis, Ltd)

April (Time & Place to be announced): " Petrophysics of Giant gas Fields, Offshore Trinidad - Joe Finneran (BPTT)

May (Time & Place to be announced): " Application and results of 3D Pore Pressure Volumes from Seismic in the Columbus Basin, Trinidad." - Iain Campbell and Michael Starcher (British Gas)

On The Web

Our web page is in the process of getting back up and running. The web page is at www.gstt.org. It will probably be up by the time this newsletter reaches the membership. We encourage members to check it out!

The AAPG has published a link to the AAPG Bulletin and other technical journals. There is a small cost to non-members. In the December 2000 AAPG Bulletin there is an extensive article on Trinidad by Leslie Wood. Technical publications from the AAPG can be bought online at their bookstore. Browse www.aapg.org for both.

GSTT MEMBERSHIP - JANUARY 2001

We at GSTT are changing the way in which we handle yearly membership dues, and we hope it will provide a "win-win" solution for both the society and its members. If you work for one of the 25 large companies that employ G&G staff, your employer has already been invoiced for your membership dues and a membership card will be mailed to you upon receipt of payment. We have ensured these companies that this program is voluntary, and if they choose not to participate, you (their employees) are still more than welcome to join the GSTT on an individual basis. If you are self-employed or work for a company other than those listed, you may also receive an invoice from us if you have been a past member and we have a current e-mail or street address for you. If you belong to none of the above, please fill out and return the form below. Please try to use e-mail wherever possible, as all GSTT communication will be e-mail and web-based in the future.

Starting this year, membership in the GSTT is open to ALL interested persons, and no longer requires formal sponsorship or references. The Executive Committee however still reserves the right to refuse membership under extraordinary circumstances. All GSTT members will receive:

- *Membership Card*
- *Discount at GSTT functions (Conferences / Field Trips / Awards Banquet)*
- *E-mail newsletters with notice of meetings and other functions`*
- *4-6 free Technical Sessions per year*
- *1-2 free Social Events per year*

From now on, paid membership will be required to receive these benefits. If you choose not to join the GSTT, this newsletter will be the last you will hear from us until our 2002 membership drive in one year's time.

Membership classification has also been slightly re-defined as follows:

- **Active Member** (previously *Ordinary Member*) TT\$150 US\$30
Professional Geoscientist (G&G) living and working in T&T (local) (foreign)
Benefits: As listed above, also able to vote and run for office
- **Associate Member** TT\$100 US\$20
Any interested person other than above, including G&G living abroad, Petroleum Engineer, Teacher, Retired Professional, Rock Collector, Astrologist etc.
Benefits: As listed above, without voting privileges. Can upgrade to Active member
- **Student Member** TT\$50 US\$10
Must be currently enrolled in a University or Secondary School
Benefits: As listed above, without voting privileges. Can upgrade to Active member.
- **Honorary Member** TT\$0 US\$0
Previously recognized distinguished Active member
Benefits: As listed above, with voting privileges as in Active Member.
- **Corporate Member**
Any company which supports the individual memberships of it's Geoscience-related employees is automatically considered a Corporate Member at no cost.

GSTT MEMBERSHIP APPLICATION FORM

CLASS OF MEMBERSHIP: ACTIVE ASSOCIATE STUDENT

NAME: _____ E-MAIL ADDRESS: _____

EMPLOYER: _____ WORK PHONE #: _____

Return to Bruce Eggertson (Treasurer) at eggerteb@bp.com or by Fax at 627-3839 (BPAmoco)

