Geological Society of Zimbabwe

Newsletter

June 2013

The hand of Tom Blenkinsop – movement indicators in the Limpopo thrust zone, Rupike Dam exposure
Photo: Hillary Gumbo

The Geological Society of Zimbabwe, P.O. Box CY 1719, Causeway, Harare

Contents

Editorial

Welcome to the first Newsletter under the Chairmanship of Hillary Gumbo. The highlight so far this year has been the successful staging of the 10th A.M. Macgregor Memorial Lecture by Prof Tom Blenkinsop in both Harare and Bulawayo, and the associated field trip from craton to mobile belt. Summaries of both lecture and field trip are presented in this Newsletter. It was wonderful and stimulating to have Tom back in our midst, for his teachings and friendship have touched many of our lives. Thank you for being with us, Tom, and for making the effort that you did.

The next great event to look forward to is the Vic Falls Summer Symposium to be held close to the apex of four countries with superb geological histories. Please take note of the announcement in this Newsletter, and on our Facebook page. Your involvement in this event is important, and we hope that it will attract visitors and contributions from Zimbabwe's neighbours. There are some interesting, and different field trips planned to coincide with the symposium. Lets give it a whirl.

The citations for the A.E. Phaup and the Mike Vinyu awards, presented at the AGM on 1st March, are recorded here. Congratulations to Martin Prendergast and Michael Wingate for yet another winning contribution towards Zimbabwe Geology; and also to Luckmore Chiteshe for his winning project at the Zimbabwe School of Mines. Unfortunately the Geoffrey Bond Award is in abeyance until the next Honours Degree projects are judged at UZ.

Whereas Tom Blenkinsop is unreservedly welcomed as an Honorary Member of our Society, not only for his presentation of the Macgregor Lecture but also for his stout contribution to geology in Zimbabwe, the Society also welcomed Dr Francis Podmore to Honorary Membership at the AGM. A short citation in Francis' honour is presented here.

Then there is news from the three-cornered research programme in the Rukwa and Zambezi rift valley settings, and the Congo Basin. The identification of Oligocene sedimentation in the Rukwa has revealed, among other fossils, remains of early apes and monkeys. These represent a significant link in the primate chain. Congratulations to Nancy Stephens, Patrick O'Connor, Eric Roberts and others for their perseverance in this research. We look forward to results from our own efforts in the Zambezi Valley that will make significant contributions to our understanding of rift valley tectonics, sedimentation and life from the close of the Triassic to the present.

Thank you too to our contributors to our regular headings, which allow us to keep abreast of happenings at the Geology Department, UZ, Geological Survey and within the Zimbabwe mining industry. There are some important dynamics we as geologists need to be aware of, not least being the attempts to develop and apply new mining legislation. As stake-holders in the mining industry of Zimbabwe, our professional opinions must be heard and our concerns addressed within this legislation.

Tim Broderick

Chairperson's Chat

Hillary Gumbo

Dear Members, welcome to our second newsletter for 2013, the first of my tenure. It gives me great pleasure to be able to chat to you as your new Chairperson. Let me start by thanking you all for entrusting me with the affairs of our Society. I will be assisted in this endeavor by a Committee comprising Andrew du Toit (Vice Chairman), Kudzai Musiwa (Hon. Secretary), Collins Mwatahwa (Hon. Treasurer), Gayle Hansen (Field Trips), Daniel Chatora (Membership), Isidoro Manuel (Talks), Sofelani Mangezi (Member), Sibongubuhle Mpindiwa (Member), Forbes Mugumbate (Member), and Anthony Revitt (Southern Region Representative). Tim Broderick has accepted to remain the editor of the Newsletter outside the Committee. We appreciate his commitment.

As usual, the major event at the beginning of the year was the AGM and dinner where the new committee was inaugurated. This year's AGM was somewhat of a disappointment in that the speaker did not appear. It has become a tradition to have a light-hearted speech during the dinner. However, the slot was taken over by Tim Broderick who gave an extended citation about Dr Francis Podmore who was nominated for Honorary Membership of the Society for his sterling contribution to the understanding of the geology of Zimbabwe. The AGM was also used to celebrate achievements of winners of the Society's awards namely the Phaup Award given to the author(s) who made the most important contribution to the Geology of Zimbabwe through publishing results of research in internationally acclaimed journals, and the Mike Vinyu Award given to the best student at the School of Mines. We congratulate the winners, the achievements of whom are outlined in short citations elsewhere in the newsletter.

As I write we have just concluded a very interesting Macgregor Memorial Lecture and field trip conducted by Professor Thomas Blenkinsop. Both lecture venues in Harare and Bulawayo were well attended. However, the field trip was poorly attended. It leaves the committee with homework to energize membership to participate in field trips. This brings back bad memories of a trip to Murowa Diamonds not so long ago when only 3 members participated. Please write to us with suggestions that may help to make these trips more attractive to you, the Member. As a way of encouraging participation by members, we are planning some promotional activities for Society events to include field trip-related competitions and a point system for attendance.

As per Society tradition, Professor Blenkinsop was conferred Honorary Membership of the Society for his presentation of the Macgregor Memorial Lecture, and not inconsiderable contribution to Geology in Zimbabwe. Touched by the plight of students at UZ, Tom donated $200 to be used as seed money to start a fund for assisting students in the Geology Department to conduct their field trips. You have been challenged!

Upcoming events include the annual Summer Symposium, this time at the Victoria Falls on 29 November 2013. There are a number of field trips planned both before and after the conference, so please diarize this important event that should not be missed.

We want the Society to move towards professional recognition of our Members, a task that requires a lot of administrative work. So we intend to engage a part-time administrator with the aim of developing a full-fledged administrative office in the long run. We welcome

suggestions for suitable persons who may be interested in this position at a nominal fee.

We wish you all the best in 2013 and look forward to an eventful year.

Articles and Reports

Scientists discover oldest evidence of split between Old World monkeys and apes

ATHENS, Ohio (May 15, 2013)—Two fossil discoveries from the East African Rift reveal new information about the evolution of primates, according to a study published online in *Nature* today led by Ohio University scientists Nancy Stevens, Patrick O'Connor, Eric Roberts (UJC) and others.

The team's findings document the oldest fossils of two major groups of primates: the group that today includes apes and humans (hominoids), and the group that includes Old World monkeys such as baboons and macaques (cercopithecoids). Geological analyses of the study site indicate that the finds are 25 million years old, significantly older than fossils previously documented for either of the two groups.

Both primates are new to science, and were collected from a single fossil site in the Rukwa Rift Basin of Tanzania. *Rukwapithecus fleaglei* is an early hominoid represented by a mandible preserving several teeth. *Nsungwepithecus gunnelli* is an early cercopithecoid represented by a tooth and jaw fragment.

Holotype specimen of *Rukwapithecus fleaglei*, a partial right mandible bearing the lower fourth premolar, first and second molars, and partially erupted third molar, in lateral view. *Photo: Patrick O'Connor, Ohio University.*

The primates lived during the Oligocene epoch, which lasted from 34 to 23 million years ago. For the first time, the study documents that the two lineages were already evolving separately during this geological period.

http://www.ohio.edu/research/communications/primatefossils.cfm

The A.M. Macgregor Memorial Lecture, 2013
Cratons, Mobile Belts and Gold Mineralization

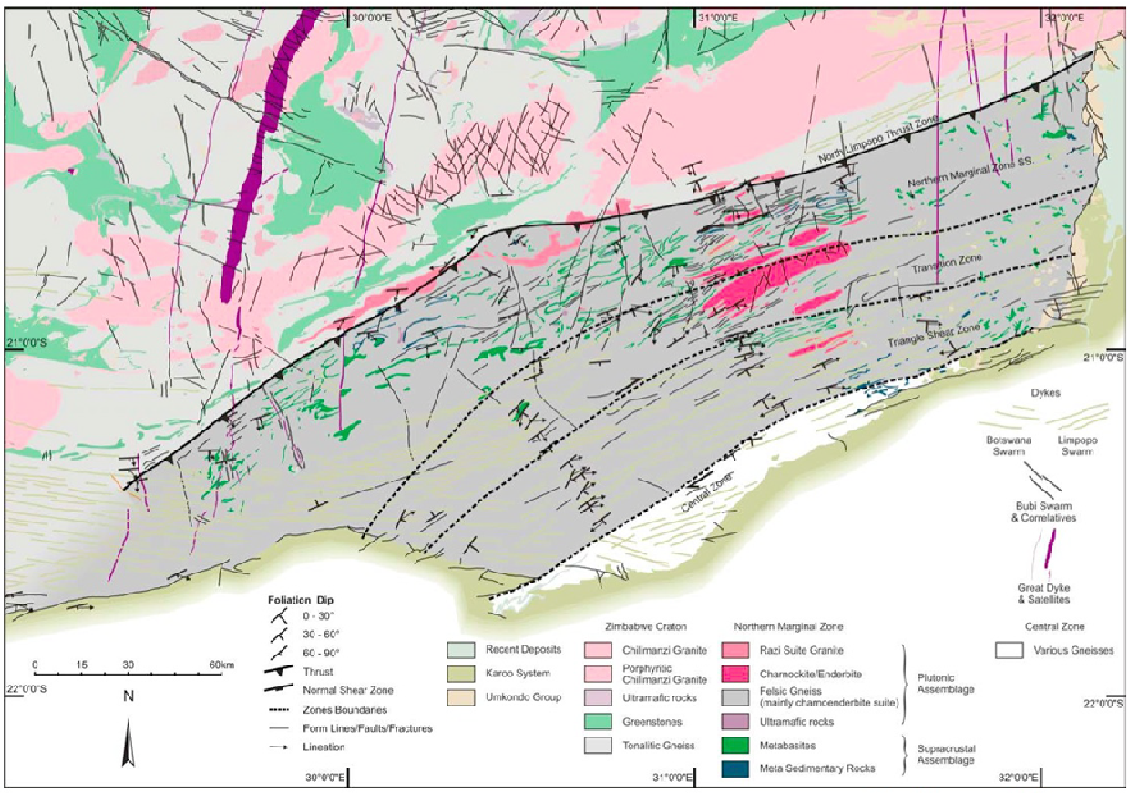
Prof. Tom Blenkinsop
Economic Geology Research Unit, James Cook University, Australia

After reflecting on the life and work of Alexander Miers Macgregor, and his legacy to Zimbabwe geology in particular, Tom Blenkinsop discussed the rock types and their field relationships within the Northern Marginal Zone of the Limpopo Mobile Belt, their geochemistry, geochronology, structure and metamorphism. He then compared these features with the greater rigidity of rocks in the Zimbabwe Craton, before comparing examples of Late Archaen gold mineralization in cratons and pericratons, with examples from both Western Australia and Zimbabwe. The deposits, described in some detail included Tropicana, Marymia and Plutonic of the Yilgarn, and Renco Mine in Zimbabwe.

Similarities drawn between the Renco and Tropicana deposits are that they both occur within 15km of the edge of an Archaean craton; they are hosted in Archaean granulites; they reflect late Archaean mineralization ages affected during a retrograde stage from granulite facies metamorphism. The ore bodies dip gently away from the respective cratons where mineralization is in small-scale breccias within favourable rock types. CO_2 fluids are indicated and gold mineralization may have been in a Proterozoic reactivation period. These features are regarded as being the indicators for a "pericratonic" gold deposit, which may have their origin either as metamorphosed and reworked Archaean lode gold deposits, such as the Plutonic and Marymia, or they are the result of a younger mineralization event in older host rocks where previous structures or lithological dispositions may be significant in localizing the mineralization, such as at Renco and Tropicana.

Tom concluded that:

- The Zimbabwe Craton and the Northern Marginal Zone (NMZ) of the Limpopo Belt (LMB) have a very similar Late Archaean tectonic history.
- The key difference is the pervasive Late Archaean fabric and intense deformation of the NMZ.
- This may be due to the older (3.6 – 2.9 Ga) core of the Craton.
- The core has imparted a degree of platyness to the Craton, but its marginal zone was 'spongy'. There is no evidence for subduction prior to the collisional event that created the NMZ.
- Hydrothermal processes in the Craton were similar to those of the Limpopo Belt.
- Very strong similarities between Renco and Tropicana gold occur, which could have profound exploration implications.



Blenkinsop, T.G. 2011. Archean magmatic granulites, diapirism, and Proterozoic reworking in the Northern Marginal Zone of the Limpopo Belt. *Geological Society of America Memoirs*, **1207**, pp. 1-24.

The Macgregor Memorial Field Trip to the Northern Marginal Zone of the Limpopo Mobile Belt

Edgar Chiteka and Forbes Mugumbate

Dates of Trip: 8th - 10th May 2013

Participants: Thomas Blenkinsop; Hillary Gumbo; Gayle Hansen; Andrew Kaserera; Sylvester Dlamini; Edgar Chiteka; Forbes Mugumbate

Introduction

After delivering the Macgregor Memorial Lecture to a full house on Tuesday 7th May 2013 at the University of Zimbabwe, Professor Tom Blenkinsop led a team of geoscientists on a field trip to examine a profile from the Zimbabwe Craton leading into the Northern Marginal Zone (NMZ) of the Limpopo Mobile Belt (LMB). Although the field trip was poorly attended, the first day having only four participants, the excursion was most exciting from both academic and social points of view. Sylvester Dlamini and Andrew Kaserera from Renco Mine joined the team on the second day, Thursday 9th May 2013.

The evolution of the LMB is controversial with no consensus on the interpretation of its nature and evolutionary history. The belt does not only include some of Zimbabwe's most fascinating metamorphic rocks, including granulite and migmatite, but it preserves records of various geological processes. Although the LMB has been an area of much research, a lot of questions about its evolution remain unanswered. Some of the areas of interest that still need research include the nature of the tectonothermal events that led to the development of this geological terrain, and their regional significance. These include relationships between the LMB and the adjacent relatively undeformed and less metamorphosed Craton, the ages, kinematics and extent of individual events that affected the belt, and its metallogenesis. This traverse was therefore most interesting in that it gave the participants an opportunity to re-visit this important geological province, guided by a renowned expert on the LMB. Igneous and structural features observed along the traverse progressing from the Craton into the NMZ, together with known geochronological data, revealed some key points to ponder regarding this Archaean puzzle.

The Traverse

The group met at *Wimpy* in Masvingo and proceeded to **Stop 1** (UTM 36K 280789/7759936) on the **Victoria Porphyritic Granite**. The key observations focused on igneous structures, the trend of which is highlighted K-feldspar megacryst orientation. This shows a weak preferred E-W magmatic fabric together with alignment of pseudo-xenoliths. The question that arises from this outcrop is whether or not the weak fabric is related to the LMB orogenesis or not, and in general, contemplation as to how far north the Craton has been affected by the orogenesis?

Stop 2 (UTM 285734/7748671) was on a **granite pavement** showing complex interaction of granitic injections. An important feature is a well-developed fabric trending E-W parallel to the trend of the LMB, and dipping to the south. The question again is whether the fabric was a result of the LMB orogenesis. An array of fault traces are exposed on the rock pavement.

Stop 3 (UTM 295173/7733530). This is a **gneissic pavement** closer to the projected transition zone. There is evidence for an increase in deformation compared to previous stops. The gneiss has a well-developed foliation shallowly dipping to the south-east. There is also a poorly defined down-dip mineral lineation. The foliation is locally folded with the fold axes appearing to plunge parallel to lineation, suggesting high strain deformation.

Stop 4 Rupike Dam (UTM 302685/7726301). The intensity of deformation increases southwards to a most spectacular outcrop exposed downstream of Rupike Dam, where it is most intense. This is the area taken to be the transition between the LMB and the Zimbabwe Craton. The question that obviously arises is the basis for selecting this area as the transition zone when it was proved that the deformation of the LMB permeates further into the Craton.

Deformation comprises a strong foliation dipping to the south, a strong down-dip stretching lineation, folded foliation, and the presence of sheath and rootless folds. Continuous quartz ribbons show a high degree of mylonitization.

The hanging wall of this zone is marked by thrust sheets manifesting as a chain of hills with southerly dip slopes. There are a variety of sense of movement indicators of different size and shape that show reverse movement, the southern side up. Thus the transition zone, that used to be marked by the orthopyroxene isograd, is now marked by a coincidental zone of high

strain. It was unfortunate that there were no undergraduate students on this trip who would have benefited through the analysis some structural features.

A strong mineral lineation on the foliation planes at Rupike Dam.

Stop 5 (UTM 308614/7721822) was not a significant stop, but the team had fun hunting for the **low-grade shears** that typically are cataclysmic in texture and filled with abundant chlorite. These are thought to be Proterozoic in age, further showing the complexity of this belt (see Kamber *et al* 1995). It was a good exercise for the day, which left a few with heavy legs and increased heart beats.

Stop 6 (UTM 309715/7717899) was on **enderbite** of the charnockite series, which hosts the Renco gold deposit. The enderbite hardly shows signs of deformation in this high strain environment. Could this have caused the mineralization at Renco, a rigid body in a brittle-ductile shear zone? (see Mugumbate & Mupaya 1999).

Stop 7 Rupati Pools (UTM 310153/7715801). This is a most interesting locality where **mylonites of the Mutilikwe Shear Zone** exhibit features that tend to defy logic. This is a shear zone with high strain features in mylonites with a strong south-dipping foliation and a down-dip mineral lineation. One would expect a reverse sense of movement here. However, a number of kinematic indicators consistently show a normal sense of movement, south side down. How did such an intense foliation develop under a tensile stress regime? Could this be an overprinting of an earlier compressional stress regime due to collapse of mountains as a result of high geothermal gradient? (see Gerya *et al* 2004, Blenkinsop & Kisters 2005). Anything appears to have been possible in the Archaean!

Mutilikwe Shear Zone mylonites with kinematic indicators showing a normal sense of movement.

The last stop, **Stop 8** (UTM 314484/7718193), was at the Early Proterozoic **Nyamawanga dolerite dykes** that cut the LMB at a high angle in a NNW orientation. The dykes exhibit some interesting features that show how dykes propagate. It will be interesting to work out the significance of these dykes in relationship to the evolution of the LMB. For instance, the dykes are parallel to the Sebanga Poort swarm, now dated at 2.4 Ga (Söderlund *et al* 2010). Could these then be part of the Sebanga Poort? If yes, do they record later deformation phases of the LMB such as the much talked about 2.0 Ga event? These and many other questions show how important the LMB is to understanding the early history of our planet.

The trip ended with a few but highly appreciated drinks at the Renco Country Club, where the team was hosted by the Mine Manager, Sylvester Dlamini, a geologist by training.

Conclusions

The trip was highly successful. The team had lots of fun both in the field and back at camp, the magnificent Norma Jean's Resort over looking Lake Mutirikwe. The Chairperson, Hillary Gumbo, showed his great skills in the preparation of braais and drinks on the last night at Norma Jean's. It was a breath of fresh air to be away from our mines, exploration camps and air-conditioned offices. Some of the field observations were breathtaking, and the team had a good time catching up with Prof TGB, with his eye for small and subtle detail that may have gigantic implications for our understanding of Archaean geology. The only disappointing thing was the size of our team. We would like to believe that this was due to the mid-week timing of the trip!

Well done to the Geological Society Committee, especially Kudzie Musiwa and Gayle Hansen, for putting this trip together. We look forward to another exciting event. We also take this opportunity to thank Professor Thomas Blenkinsop for conducting the field trip in his old stamping ground, and for igniting good memories and renewed interest on one of our geological heritages.

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Söderlund U., Hofmann A., Klausen M.B., Olsson J.R., Ernst R.E. and Persson P.-O. 2010. Towards a complete magmatic barcode for the Zimbabwe Craton: Baddeleyite U-Pb dating of regional dolerite dyke swarms and sill complexes. *Precambrian Research*, **183**, pp. 388-398.

Citation for the A.E. Phaup Award, February 2013

The paper selected for the A.E. Phaup Award for the period under review is:

Prendergast M.D. and Wingate M.T.D. 2013. Zircon geochronology of late Archean komatiitic sills and their felsic country rocks, south-central Zimbabwe: A revised age for the Reliance komatiitic event and its implications. *Precambrian Research*, **229**, pp. 105-124.

Congratulations to the authors for a job well done. Both authors are previous recipients of the award for their sterling work of attempting to unravel the stratigraphy of the Archaean in Zimbabwe.

The Archaean is important to the geology of Zimbabwe not only because of the associated mineral wealth, but also for the reason that the these rocks cover about 60% of the country's land surface. Yet not much is known about this period mainly because of the antiquity of the rocks and consequential deformation and alteration, and a lack of fossils that might be used to correlate major events. This paucity of data has led to debatable extrapolations on the stratigraphy and origin of our Archaean rocks, with much argument as to whether or not certain lithologies can be correlated from one greenstone belt to another. However, with advent of high precision radiometric age dating, and as more units get dated, the lithostratigraphy of Zimbabwe's Archaean is gradually being worked out. It is in this regard that this paper has been selected for the Phaup Award. It brings out new geochronological data that better explains the Archaean volcanology in general, and the evolution of the Bulawayan, especially the Reliance Formation komatiites and associated sill flows, and their relationships to the Manjeri sediments. This new work is increasingly showing that this important horizon, which is associated with nickel mineralization, can be correlated to many parts of the Zimbabwe Craton.

The authors have also attempted to touch on the growing debate that links the Zimbabwe Craton to the Superior Craton of Canada. Although mind-boggling, such correlations will have important bearing on mineral exploration in the Archaean in general.

Forbes Mugumbate

The Mike Vinyu Award for 2012
to Luckmore Chiteshe
for the best student in geology at the Zimbabwe School of Mines

Ms F. Ndebele

The winner, Mr Luckmore Chiteshe's project was entitled "An evaluation on the effects of geological structures to mining operations in Pamuzinda Section of Rukodzi Mine". This was completed with the following objectives in mind:

- To identify various structures exposed in the Pamuzinda Section;
- To determine how the presence of these structures affect mining operations;
- To predict the behaviour and trend of these structures in advance of mining; and
- To recommend an effective support system to improve ground control in the vicinity of the structures.

These ends were achieved by means of structural mapping, rock mechanics and production audits, underground core logging and underground geotechnical logging.

Conclusions reached were that groutable roof bolts for Ground Class D be installed in a 1 x 1m staggered pattern, which applies to all ends in the Pamuzinda Section. Twin cable anchors be installed at 1.5m either side of the centre line at 2 m intervals along the drive. That all back-holes marked for drilling be strictly at 0.5m. Design of ground support and reinforcement be matched to the ground conditions. Two or more holes should be drilled to predict N-S and E-W trending structures and allow for improved planning.

Luckmore joined Zimplats in January 2008 as a Geological Assistant. He was identified as a hard working and committed person, being nominated as a geology cadet in 2010 to be engaged in the leadership programme. He studied geology at the Zimbabwe School of Mines in 2011, and completed the course as top student in 2012.

Welcome to Honorary Membership of our Society
Dr Francis Podmore

Dr Francis Podmore was welcomed as an Honorary Member of the Geological Society of Zimbabwe at their AGM held on Friday 1st March 2013. Francis is a passionate person, and he applies his energy in his pursuit of his interests, some of which include astronomy, eclipses, meteorites and the science of gravity. He joined the Physics Department at UZ in the early 1960's and was part of the team that made the application of geophysics the prime research topic at the university. He first presented on the gravity anomaly of the Great Dyke at the 7th Annual Congress of the Geological Society of South Africa in 1964 at a time when he was using when he captured gravity data with a Worden Master Gravity Meter and analysed it using an IBM 7090 electronic computer.

It can safely be said that nearly every student who has entered the Physics Department was taught in some way by Francis Podmore. And you sat up and listened, for he taught with passion and conviction. He is both entertaining and fearsome – so you learnt. The proof is manifested in those UZ physicists who have made their mark in their chosen field, and their numbers are not inconsiderable.


Temba Hawadi with the Dotito Meteorite, and Dr Francis Podmore at our 2009 AGM

Francis, it would also be safe to say, has had a life-long interest in the stars. He has been a constant and enthusiastic member of the Zimbabwe Astronomical Society, and he led the public education programme for both the June 2001 and December 2002 total eclipses that crossed Zimbabwe. His interest in local meteorites has been ongoing. Some years back he and the writer described these to the Astronomical Society, and then at our own AGM some years back he introduced members to the 71kg Mafuta nickel-iron meteorite, the only one of its kind discovered in Zimbabwe. Then more recently he was called, with Temba Hawadi, to identify the Dotito Meteorite, which had alighted in a field, and to this day remains in Police custody! Temba's picture is the only record of this happening.

Francis' study of Zimbabwe's gravity field has remained consistent. Apart from his focus on the gravity of the Great Dyke, he recorded traverses in Gona-re-Zhou, between Bulawayo and Kazungula and through the Gokwe District. He co-ordinated all available data and integrated this with the National Gravity Survey. The results were publication of a first Bouguer Anomaly Map of Zimbabwe in 1982; his PhD thesis submitted through the University of London in 1985; with Allan Wilson a reappraisal of the structure of the Great Dyke at the 1987 "Mafic Dyke Swarms" conference in Canada; and he played a key role in publication of Bulletin 103, which presented Edition 2 of the Gravity Map of Zimbabwe. He has also done research into the study of terrestrial heat flow across Zimbabwe.

Francis also played a leading role in the affairs of the Zimbabwe Scientific Association, being a past President and Gold Medallist in recognition of his contributions. He has also been recognized through his election as a Fellow to the Zimbabwe Academy of Sciences. We in the Geological Society of Zimbabwe acknowledge the continuous support we have received from Francis over the years, and endorse his nomination to Honorary Membership.

Tim Broderick

News

Geology Department, University of Zimbabwe

Maideyi Meck

The situation at the Geology Department can be described as fair. Dr Njila was appointed on the tenure track in early May, so we now have two permanent staff members, with the remainder being employed on a contract basis. The University has frozen all posts, so the Department is no longer recruiting. Mrs Chinguno's contract was not renewed due to the freeze. If this is not lifted in the near future, it means that we may have to revert to having only two lecturers in the Department. Dr Nhamo from the university Chemistry Department is still the departmental Chairperson.

The Mennell Society is up and running and they are organizing events for themselves. The Part I field trip takes place from 08/06/13 to 18/06/13. It will cover the Bindura-Shamva Greenstone Belt, the Great Dyke and the Magondi sequence around Chinhoyi. The students will camp in Bindura, thanks to Freda Rebecca Mine generously providing accommodation, ablutions and related services. From Bindura the students will camp at the Chinhoyi Caves.

The Department is appealing to mining companies to absorb our students for a one-year attachment, which is a requirement for the new BSc Honours programme.

As a Councillor of the GSAf for the Southern African Region in its 2012-2016 term, Dr Meck will happily forward any geological news or discovery from Zimbabwe to the GSAf Newsletter, including any news that you may want the World to learn about through the GSAf.

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Note: DG – Department of Geology; MRC – Mineral Resources Centre; GSZ – Geological Society of Zimbabwe

ZIMBABWE

Geological Survey Department

Sibongubuhle Mpindiwa

The department welcomes aboard two new geologists, **Lloyd Magombedze** and **Brian Muteta** who joined from the Ministry's Mining Promotion Unit on a lateral transfer. The two graduated with BSc Honours degrees in Geology from Fort Hare University. This is a most welcome development considering that the Public Service Commission has frozen recruitment in government due to financial constraints.

Sibongubuhle Mpindiwa, Principle Geologist, was seconded to the Mining Affairs Board Secretariat in January this year to assist in clearing the backlog of unprocessed EPO applications. We can only hope that her secondment will not be in vain. Everyone is looking forward to seeing the resumption of systematic exploration.

Geologists **Mitshell Maisera** and **Tendai Kashiri** received training in Remote Sensing in Japan from February to March this year. This is the second group to attend this training course. Japan is keen to train Zimbabweans, especially through their Japan Oil, Gas and Metal Corporation (JOGMEC) offices in Botswana. However, Zimbabwe has yet to sign an MOU in order to fully benefit.

Temba Hawadi, Director, accompanied the Minister of Mines and Mining Development to Kimberley Process meetings in Washington, Israel and South Africa, where they defended Zimbabwe's position.

Forbes Mugumbate, Deputy Director, accompanied the Deputy Minister of Mines and Mining Development to Japan for the J-SUMIT (Japan Sustainable Mining, Investment and Technology). The meeting was held ahead of the fifth Tokyo International Conference on African Development (TCHAD V) that was attended by African Heads of State, including President Mugabe. Japan is now adopting a pro-active approach to engage mineral-rich African countries for mutual benefits.

The department is happy to announce the re-printing of sheets 5, 6 and 8 of the geological maps of the Great Dyke. These had been out of print for some time. Depending on the availability of funds, the department wishes to reduce the backlog of unpublished materials. In this regard, some money was secured from the Ministry's Minerals Development Fund to

out-source editing of a bulletin. The draft of Bulletin 95 (Dorowa-Shawa) has now been edited, and corrections are being made before approaching the same fund for publication.

On a sad note, production of the 1:1 million-scale map is still in limbo. Unfortunately the project geologist has not been well.

MINING INDUSTRY NEWS

Mitshell Maisera & Forbes Mugumbate
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Mineral Policy

After years of futile attempts to amend the Mines and Minerals Act Chapter 21:05, the Ministry of Mines and Mining Development has now resolved to repeal the whole Act and come up with a new one. The Ministry is taking advantage of this new development to craft a Minerals Development Policy that will be the foundation upon which the new Act will be formulated. A consultant engaged by the Ministry has already produced a draft policy that is currently being debated. The draft policy has been presented to various stakeholders in Harare, Kadoma, Gweru, Bulawayo, Masvingo and Mutare for discussion. The interest shown by the stakeholders is overwhelming, and we can only hope that the drafters of the policy will take note of the positive contributions made by the stakeholders. Members are encouraged to contribute to the policy, the draft of which is obtainable from the Ministry of Mines offices in Harare and the Regions.

Mining Fees

The Ministry of Mines and Mining Development has succumbed to pressure from various quarters calling for the reduction of mining fees, which are considered prohibitive. However, the reductions are still regarded as being inadequate. The fees remain high, way above those recommended by the Chamber of Mines. The African Development Bank has criticized these spurious reductions and warned that the high fees will act as a barrier to companies entering the mining sector, and will reduce the profitability of those companies already in operation. Meanwhile some legislators have indicated that the fees are illegitimate and should be nullified. The industry anxiously awaits the next move from the Ministry.

Chamber of Mines AGM

The Chamber of Mines held its 74th Annual General Meeting (AGM) in Nyanga amid calls for government to consider the difficult conditions the mining industry is operating under. The industry is operating under a plethora of challenges including lack of capital, and the imposition of a stifling tax regime and other fees. This is compounded by the logic-defying demands by EMA, the Environmental Management Agency. The relationship between government and the Chamber is based on suspicion, and this does not help the situation. It appears the apparent rift between the mining industry and government has been widening. Government suspects that the mining industry here is advancing the interests of western capital at the expense of millions of Zimbabweans. It is in these regards that the new President of the Chamber, **Alex Mhembere**, and his team of **Allan Mashingaidze** as First Vice President, and **Toindepi Muganyi** as Second Vice President, have the onerous task of leading the industry under such an environment. We wish them the best in their engagement

with government to reach a mutually beneficial understanding, bearing in mind that there is no way the industry can grow without this mutual trust. We take this opportunity to congratulate Allan, a fellow geologist, for being elected First Vice President of the Chamber of Mines.

Exploration and new projects

Except in a few claims belonging to large companies, and in some Special Grants for coal, both green and brown-field exploration in Zimbabwe have virtually stopped. There are no current EPO's in place. Without regional exploration, the future of mining in this country is in jeopardy. African Consolidated Resources has, however, reported appreciable progress at its properties around Chegutu. Gold production is expected at any time from the company's Pickstone – Peerless project. These reports came at a time the company was reported to have attracted investment from the ruler of Ras Al Khaimah Emirate, United Arab Emirates, who paid a visit to the country in March 2013. The Emirate, through its investment vehicle Brimfell Investment Holdings, is reported to have acquired 170 million new shares in ACR. Vice President Mujuru visited the Emirate to discuss various issues including investment in mining. Meanwhile ACR has appointed **Craig Hutton** as CEO, and he has promised to fast-track the exploration and development of the company's other assets in Zimbabwe.

The importance of junior companies under the prevailing perceived unfriendly investment climate is becoming apparent. Some ingenious individuals are targeting certain deposits which they explore to gather information for attracting investment. For instance Pioneer Mining Company is probing the potential of tungsten at RHA near Kamativi, Rare Earth Elements at Katete carbonatite in Binga, Rare Earth Elements at Lubimbi, Graphite at Gurambira, and lithium near Fort Rixon. These are all showing encouraging results. Canister Resources identified new deposits of base minerals and gold in areas underlain by Kalahari and Karoo deposits in the Tsholotsho area. These are to be explored further in detail before development is feasible. It is clear that the so-called junior companies play an important role in the development of mining, and their efforts need to be supported. Any new policy needs to take the importance of this group into consideration.

FDI

The Zimbabwe Investment Authority (ZIA) recently disclosed that Foreign Direct Investment (FDI) it licensed in the first quarter of 2013 amounted to approximately US$33 million, as compared to approximately US$136 million in the same period in 2012. This is most likely being affected by subdued activities in the mining sector. A major part of investment in mining is at exploration stage. No major FDI is expected with very little exploration currently going on. A number of potential investors still cannot comprehend details of the Indigenization policy, and this is negatively affecting investment.

Environmental Management Authority (EMA)

EMA is very active in the mining areas, especially where the large mines operate, as they are assured of raising substantial amounts in fines. There is an outcry that EMA's activities are geared more to raising money than to the monitoring of the environment. Some of EMA's proposals for environmental protection are considered illogical as they do not necessarily lead to environmental protection, but sometimes worsen the situation. For instance, the demand that all dumps be under-lined with special plastic will entail having to move the dumps to new areas. Some of the dumps are over 100 years old and are enormous, and will certainly cause additional environmental challenges if moved. Apparently EMA has no mining professionals among its officers, who are always clashing with the opinion of miners.

Acquisition of idle land for mining

The government has recently gazetted the acquisition of 27 000 hectares of reportedly underutilized land from Zimplats. Zimplats has objected to this acquisition. The Chamber of Mines of Zimbabwe is contemplating engaging government over the principle of compulsory acquisition of excess mining ground amid concerns that the new "use it or lose policy" may affect mineral output. The Chamber seeks the definition of idle land. Government intends to bring in more players to boost production to levels that would justify the setting up of a PGM refinery. Meanwhile government has warned that the exportation of PGM concentrates will be banned in the next two years to encourage local refining.

News about Zim Geoscientists

We hope your contributions may improve with the Facebook initiative. Talk to you on the Geological Society of Zimbabwe Group, an open link. Join us there for better communication.

Please provide us with news about yourself or other geologists. We need to keep in touch with all of you out there. E-mail: hgumbo@mweb,co,zw or makari@zol.co.zw

Conferences

The 24th Colloquium of African Geology (CAG24) and **the 14th Conference of African Geology** were held at the Millimium Hall, Addis Ababa, Ethiopia from 8th-14th January 2013, with pre-excursions from 4th-7th January, mid-event excursions on the 11th January and a post-excursion from 15th-22nd January. The celebration of the 40th Anniversary of the Geological Society of Africa (GSAf) was held at the College of Natural Sciences of the University of Addis Ababa, on the 14th January. The meeting was officially opened with a speech by Prof. Aberra Mogessie (GSAf President), Prof. Roland Oberhaensli (IUGS President) and Her Excellency Mrs. Sinknesh Ejigu, Minister of Mines of the Federal Democratic Republic of Ethiopia. The opening ceremony was moderated by Dr. Asfawossen Asrat, GSAf Vice-President for the Eastern African Region and Chair of the Scientific Committee of the CAG24. It was attended by about 500 participants, including local geologists and students from 60 different countries from all continents. There were 300 oral presentations and 100 posters. The oral presentations were made in five parallel sessions with two plenary talks in the main Hall each day.

Geoforum 2013 – The Geological Society of South Africa's premier event: 3 – 5 July 2013 in Johannesburg. Please reply to register@rca.co.za

The 23rd International Geological Congress, Cape Town, South Africa – 2016.

Geological Society of Zimbabwe

Summer Symposium 2013

28-30th November 2013

Call for Papers

We are planning to hold the Geological Society Summer Symposium at the Falls this year.

We are putting together a stimulating schedule of field trips for the 28th and 30th November and a symposium at the Vic Falls Safari Lodge on the 29th.

We are looking for 15-minute presentations on a broad range of subjects of interest to geologists.

We are planning an interesting set of presentations on:-

- Advances in Mineral Exploration Techniques
- Database management and Quality Control
- Skills Situation and Challenges
- Environmental Management
- Topics of general interest to Geologists

If you would like to present, please let us know (andrew.dutoit@zimplats.com)

Please put this date in you diary now!!

GSZ Research and Development Fund

Enquiries relating to the distribution of funds through this facility should be made through the standing Chairperson.

SEG Timothy Nutt Scholarship Memorial Fund

This fund will be available to provide financial support for geology students and young economic geologists located in Zimbabwe or in Southern Africa with ties to Zimbabwe. The fund may be used to support SEG student chapter activities, travel to meetings, field trips, for research or study grants, technical lectures or any other activities approved by the SEG Regional Vice President for Africa.

Applicants must describe what the project is, why the research is important and how it is to be done.

An estimate of expenses for the project must be included with the application.

Grants are expected to be fully utilized by year-end.

Grant recipients are required to provide a year-end accounting of how the money was spent together with a suitable progress report or final abstract.

See the Society of Economic Geologists website for further details and the next call for applications.

3D EARTH EXPLORATION (Pty) LIMITED

Geophysical Contractors & Mineral Exploration Consultants

3D Earth Exploration is a Botswana-registered company operating in the Africa theatre and provides the following services:

- Ground geophysics surveys
- Physical rock properties measurements …&… 3D Data processing and interpretation

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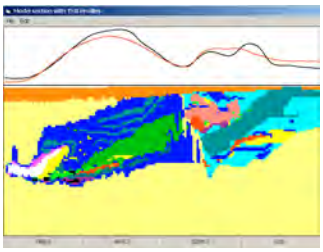
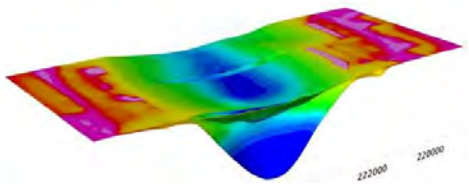
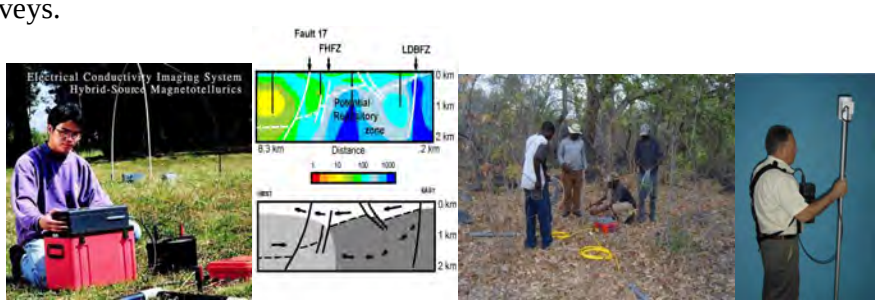




- CSAMT, ground magnetic surveys, Induced Polarisation, gravity (CG3/5, La Coste), rock properties, EM, GPR, radiometrics and a wide range of other ground geophysics surveys.



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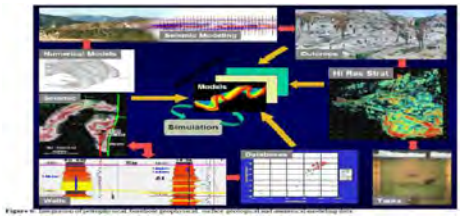

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