

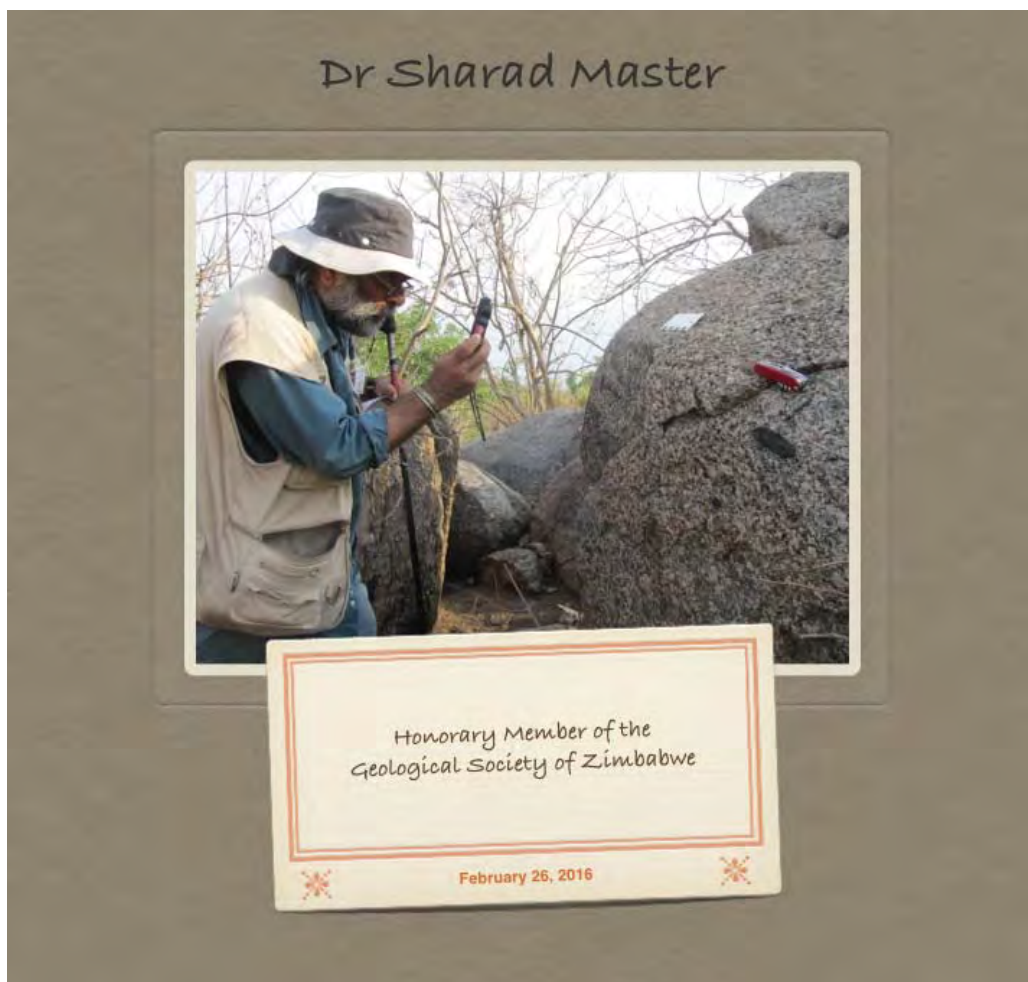
# *Geological Society of Zimbabwe*



## *Newsletter*

June 2016

No. 2 of 3 of 2016



*Photo: Tim Broderick*

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

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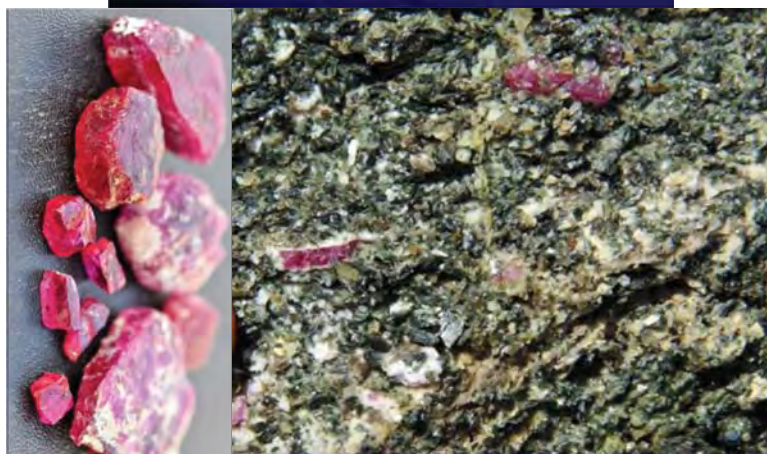
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## Editorial

**Brent Barber** and his Committee, with some new faces, were welcomed into office at the Society AGM on 26<sup>th</sup> February 2016 at what has become our usual venue, the CFX Sports Club in Highlands. At that meeting the lives of **Ron Henwood, Irene Goromonzi, N. Chinguno, Fatima Farraz, Ian Green** and **Charles Ziupfu** were remembered in a minute of silence. In this Newsletter we also honour the memory of **Prof. Jim Wilson**, whose life and teaching touched so many of us, and that of **Neil Harrison** who contributed significantly, in parallel with Jim Wilson, to our understanding of Zimbabwe Geology as we know it today. The list of Jim Wilson's publications speaks for itself as we celebrate the lives of those who have passed.

We take the opportunity to present the abstract for the A.E. Phaup Award winning paper for 2015 on the evolution of the Zambezi River, and we congratulate the authors – **Roger Key, Fenton Cotterill and Andy Moore**. We also congratulate **Tenyears Gumedede** who was presented with the Keith Viewing Award for the best presentation at the 2015 Summer Symposium held at Kariba.

Geophysics of the ruby bearing  
Amphibolitic Gneisses –  
Montepuez Complex,  
Mozambique  
Tenyears Gumedede



*Tenyears Gumedede, the winner of the Keith Viewing Award for the best presentation at the 2015 Kariba Summer Symposium.*



The Mike Vinyu Award for the best student at the School of Mines in Bulawayo in 2015 was given to **Brian Tapuwa Chinheya**. He gained 6 subject distinctions and 11 credits whilst at the School and, as an intern, he modelled the footwall mining level at the Entuba Colliery on behalf of Makomo Resources (Pvt) Ltd. Our congratulations are extended.

It was a pleasure at the AGM to welcome Sharad Master as an Honorary Member of our Society. The citation for his induction, in absentia, is presented for your enjoyment.

As always we are grateful to our correspondents who regularly report on happenings and events affecting the Geology Department at UZ, the Zimbabwe Geological Survey and within the Zimbabwe Mining Industry. Our thanks go to Maideyi Meck, Ernest Mugandani and Forbes Mugumbate. Ernest continues to be the link person and co-ordinator for the Newsletter, and for this task we are grateful.

*Tim Broderick*



## Chairperson's Chat

*Brent Barber*

My obligatory but heartfelt first task in this, my inaugural "Chat" as the Chairperson of the Society, is that of thanking Ali Ait-Kaci and all on last year's Committee for the splendid job they undertook on our behalf. As shown by the contact details for the incoming Committee, it is a pleasure to welcome Nevison and Steven. It is also reassuring that many of the stalwarts elected to stay on so as to ensure continuity.

The three goals that I have highlighted for achievement by the Society this year are to:

1. **Encourage More Talks and Field Trips:** A number of talks are lined up for your interest and attendance. Earlier in May a well-attended field trip took place to the Pitana Gold Mine, near Chegutu, whilst another mine visit is planned to Frieda-Rebecca. Not wishing to belittle the sterling achievements of the Summer School, the highlight for this year is the staging of the Macgregor Memorial Lecture. This will be delivered in early August by Dr Martin Prendergast who, at the invitation of the Committee, will return to Zimbabwe to present a talk on the less well known nickel laterite and other mineral occurrences of the northern part of the Great Dyke in Zimbabwe. The lecture will be followed by a fieldtrip to the Horseshoe and Snakes Head areas. Watch our media outlets for details!



Participants on the trip to the Pitana Gold Mine near Chegutu on 14<sup>th</sup> May

2. **Launch a Journal of the Geological Society of Zimbabwe:** In years gone by the Zimbabwe Geological Survey and the Department of Geology at the University of Zimbabwe produced informed publications in the form of the *Annals* and as *Detritus*, the contents of which covered wide-ranging topics relevant to the geology of Zimbabwe. The intention is that the periodical, whose name has yet to be decided, will provide a new mean in which to record ideas. At present it's planned that the Journal will be published in soft copy format and be hosted on the Society's webpage. Submit your ideas for its name and start planning your contribution.
  
3. **Maintain or Increase Resources:** This really is a 'no brainer', with the intention being to spend the Society's funds judiciously for the betterment of our Members, as will be the case for the Macgregor Memorial Lecture, whilst at the same time attempting to replenish the kitty. With this in mind a letter will presently be sent out to Industry asking all to either renew their Institutional Membership or else join. On your side, please encourage your colleagues to become Society members – application forms are available on the our webpage: [www.geologicalsociety.org.zw](http://www.geologicalsociety.org.zw)



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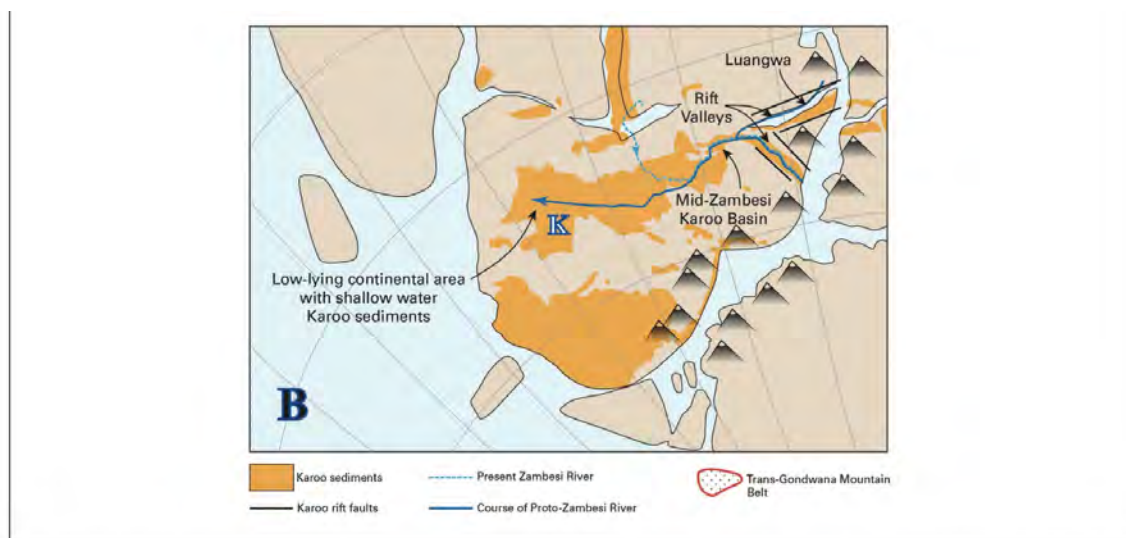
## Articles and Reports

### The Zambezi River: an Archive of Tectonic Events Linked to the Amalgamation and Disruption of Gondwana and Subsequent Evolution of the African Plate

*R.M. Key, F.P.D. Cotterill and A.E. Moore*

#### Abstract

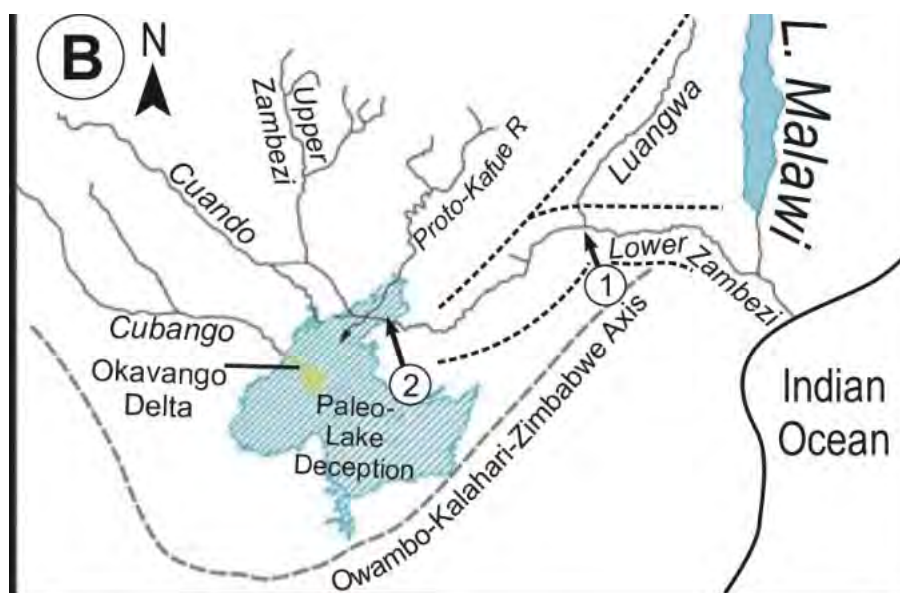
Africa's modern Zambezi is proposed as an example of a major extant river system, which archives the tectonic events that assembled and then fragmented a supercontinent. The Zambezi and an earlier Karoo river system, (here designated the Proto-Zambezi River system), have a recorded geological history spanning approximately 280 million years. Its original headwaters were formed when the End-Neoproterozoic to Ordovician amalgamation of the Gondwana Supercontinent created a central Himalayan-scale mountain belt, now called the Trans-Gondwana Mountain Range (at the core of the East Africa-Antarctica-Orogenic Belt). Eroded remnants of these mountains were the source of west-directed Dwyka glacial sediments and Ecca and Upper Karoo, Permo-Triassic, rift-controlled lakes and rivers across West Gondwana. The reversed drainage of the Zambezi River started to flow eastwards through the same rift valleys in the Middle Jurassic (at about 165 Ma), as Africa started to separate from the eastern part of West Gondwana, with the resultant development of an eastern seaboard. This second stage in the evolution of the Zambezi River mirrored sequential openings of the Indian and Atlantic Oceans, in the post-Gondwana interplay between epeirogeny and rifting. Protracted longevity of the Zambezi River and its ancient precursor shows that major drainage systems can survive plate break-up, albeit with changed flow directions and continuously evolving catchments.



**Figure 2.** The central location of the Trans-Gondwana Mountain Belt within the Gondwana Supercontinent (based on the reconstruction by Reeves, 2009). (B) Early Permian palaeogeography of the Proto-Zambezi River across Western Gondwana (from Smith, 1984; Guillocheau et al., 2013a); the blue lines trace the approximate course of the river into the Kalabari Basin (K).

**Table 2.** A summary of the major Phanerozoic events that modified the central and south-eastern portions of the African Plate prior to about 93 Ma, and relevant to the evolution of the Proto-Zambezi and Zambezi River systems. See main text for detailed references.

| Age (Ma)    | Event   |
|-------------|---|
| 93          | Opening of Mascarene Basin establishes the eastern Africa shoreline as a passive margin.  |
| 130 to 90   | Isostatic uplift and erosion of eastern and central Africa.   |
| 135         | Complete separation of East Africa from Madagascar.   |
| 145 to 100  | High energy proximal sedimentation along Africa's developing eastern coastline.   |
| 165         | South facing gulf started to develop between East Africa and Madagascar (start of West Gondwana break-up).<br><b>Lower Zambezi River flowing eastwards; Reeves (2013) reconstruction.</b>                                       |
| 201 to 165  | Siliciclastic sedimentation in half grabens adjacent to (and along) the line of separation of East Africa from Madagascar, and at an angle to the earlier Karoo rift-basins.  |
| 184 to 173  | Karoo magmatism – sub-continental flood basalts, bimodal volcanic centres in rift-basins and regional dyke swarm.   |
| 258 to 210  | Erosion related to uplift with drier climate (uppermost Karoo sedimentation).   |
| 280 to 237  | Ecce-Beaufort Groups sedimentation: fluvio-lacustrine 'coal measures' overlain by <b>west-directed high-energy, fluvial sedimentation in the Proto-Zambezi River through the Mid-Zambezi Basin and Cabora Bassa Rift-basin.</b> |
| ≥302 to 280 | Dwyka glaciation of Gondwana with west-directed ice movement across West Gondwana off the Trans-Gondwana Mountain Belt.   |
| 420 to 302  | Unknown amount of sedimentation in central-southern Africa; most removed by the Dwyka glacial event.  |
| 480 to 420  | End of magmatism within the Pan African orogenic belt system with relatively slow crustal cooling until 420 Ma.   |



(B) From mid to late Cenozoic, depicting sequential capture of the Luangwa in the Oligocene (arrow 1) and piracy of Kalahari Plateau drainage by the Early Pleistocene (arrow 2).

**The A.E. Phaup Award Winners for 2015.** Extract from: *S. Afr. J. Geol.*, **118** (4), pp. 425-438

**Dr Roger Key** is a well-known name to us, mainly due to his long-term association with the Geological Survey of Botswana from 1972 and his contributions to geological mapping in that country. Awarded the DSM by Botswana in 1998 and the MBE in 1999, he has worked on BGS projects in several African countries including Zambia and Mozambique. His contributions to the regional geological understanding of southern Africa are profound and prolific. Since 2012 he has operated his consultancy, *Kalahari Key*, out of Scotland into Africa.

**Woody Cotterill** is the son of onetime consulting geologist to the Shurugwi Chrome Mines. He retains a wide-ranging fascination for African ecology, evolution and geomorphology, much of which is focused on Zimbabwe and the surrounding region. He,

with Andy Moore is a previous winner of the Phaup Award. His continued observance of the evolution of the Zambezi ecosystem has led him to pursue his concept of *Geocodynamics*, though the auspices of AEON (Africa Earth Observation Network) based at Stellenbosch and previously UCT.

**Andy Moore**, PhD and MBA at UCT, is also well known to us through his continued involvement with our Society. From 1980 he led a concerted effort in diamond exploration across Zimbabwe, and has continued his quest in Botswana and elsewhere, including Madagascar. His passion for research in pursuance of his interests in kimberlites, alkaline volcanism, landscape development, the Kalahari Basin and drainage evolution especially in the Zambesian realm, through associations with Rhodes and James Cook universities, has driven him.

### **Citation - Dr Sharad Master – Honorary Member of the Geological Society of Zimbabwe – 26<sup>th</sup> February 2016**

#### **Early Days**

- Sharad is a geological enthusiast – we know that.
- He was born in Johannesburg in about 1959 in modest surrounds. His Dad was a grocer.
- From 1971 to 1975 he attended Nirvana High School in Lenasia, Johannesburg, to which he bussed to and fro over 64 km a day for 5 years due to Apartheid laws. He achieved the best Matric results for English and Biology at Nirvana in 1975.
- He frequented the minerals collection housed at the Johannesburg Public Library during this time, and could cite the provenance and properties of nearly every specimen – Enthusiasm!

#### **University and his first job**

- Still dogged by Apartheid stigma, Sharad had to attend Durban-Westville University through 1976.
- By dint of determination (and enthusiasm) he became enrolled at Wits for the remainder of his BSc Degree between 1977 and 1979, majoring in geology, physics and archaeology (more enthusiasm).
- Finding it hard to get a job in SA he took up a post as mine geologist at Mangula Mine, reporting there on Independence Day 1980. That took some guts as he, as a young graduate, was facing strange uncertainty in a new Zimbabwe. He made a go of it – with enthusiasm.

#### **Degrees in Zimbabwe Copper**

- Whilst at Mhangura on the Norah Mine Sharad took time off to complete his First Class Honours Degree at Wits in 1984 followed by registration for Masters, which was upgraded to PhD at the Economic Geology Research Unit between



1985 and 1991. His thesis was on the geology and origin of copper and precious metal mineralization at the Mangula and Norah mines, Mhangura.

- Subsequently he spent time in exploration for stratabound sediment-hosted copper mineralization with Lomagundi Mining and Smelting, a subsidiary of MTD (Mhangura), and was based at Alaska from 1992 to 1994, thus cementing his intimacy with the Proterozoic of the Magondi Belt.

### **EGRI, Research & Harvard**

- Returning to Wits, Sharad has been attached to the Economic Geology Research Institute since 1995 where he is a senior research officer placing emphasis on stratabound copper deposits in Zimbabwe, Zambia and the DRC, but also gaining intimacy with the regional geology, tectonics and evolution of Africa as a whole through his work in 25 African countries.
- In September 1996 Sharad led the First Field Conference for IGCP 363 across the Palaeoproterozoic of Zambia and Zimbabwe.
- Then in 1997/98 he was awarded a Harvard-South Africa Scholarship to visit their Department of Earth, Atmospheric and Planetary Sciences.

### **The Great Meteorite Quest**

- Sharad has become a total enthusiast and expert in the quest for meteorites and impact structures and has many records to his credit, including our own Highbury and Sinamwenda structures, the former being recognized on enhanced Landsat Imagery at the BGR, Hannover in 1987.
- He is central to the idea that a meteorite impact in central Iraq may have ended Bronze Age civilizations in about 2300 BC, and he relates finds in Botswana, Iran, the DRC and elsewhere.

### **Enthusiasms**

- Sharad talks of his ideas on the trade between gold and salt across North Africa, and his idea that chemical signatures in the gold leaf adorning some of the Timbuktu Manuscripts will define its origin. His ideas have gelled during visits to Mali and to the Danakil in Ethiopia.
- Then he publishes on the disappearance of a beach in Cape Town or on a volcano in the Cape Verde Islands, some feature in Prague, or more recently on a trip through Lapland and to the Norwegian Fjords. Then there is an account of Darwin as a geologist in Africa etc.etc.

### **A Sustained Passion for Our Regional Geology**

- Sharad's association with our Society, and his interest in our geology has remained steadfast.
- He, with Andrey Bekker and Axel Hofmann took the Phaup Award for their paper on the "Lomagundi" global carbon isotope excursion published in *Precambrian*

*Research* in 2010.

- Currently, with student Sarah Glynn, Sharad has been pursuing the relationship of gneisses exposed in Botswana, the Choma-Kalomo Block and at Kariba by means of geochronology. Sarah now runs the date lab in Potsdam, Germany – watch this space.

### **He is a Busy Boy!**

- As we speak, Sharad is in Cape Town working on “The Life and Work of A.L. du Toit” by delving through trunk loads of papers. What a challenge, but again watch this space.
- Just to keep himself busy, Sharad is on the organizing committee for the 35<sup>th</sup> International Geological Congress to be staged in Cape Town in August.

### **Honorary Membership**

For Sharad’s sustained association, support and involvement in our Society it is appropriate that we extend our appreciation and declare him an Honorary Member.

*Tim Broderick*

**JAMES FREEMAN WILSON**  
**1931 – 2016**  
**An eulogy by John Orpen**  
**Read at the funeral service in Princes Risborough**  
**Buckinghamshire**  
**18<sup>th</sup> May 2016**



I first met Jim when I was a schoolboy in Harare. I had told an old family friend, who lectured Maths at the local University, that I wanted to be a geologist and I clearly remember him saying it was a great choice. In fact he knew Professor Geoffrey Bond

well, an amazing man who in a few short years had recruited top class staff and established a Geology Department that was rapidly gaining world-renown right here on my doorstep. Would I like to meet the newest lecturer, a fellow named Jimmy Wilson?

That was a fateful introduction. There were none of the usual preliminaries: “Why are you interested in geology?” or “What are your ‘A Level’ subjects?” Instead he said, “So you’re keen on rocks laddie. Wonderful!” and Jim gave me the million-dollar tour.

Jim was like that. Famous academics with knighthoods down to shy first-year students, even their mums and dads, were all treated the same. He was genuinely just as interested in the person as he was in the many arguments and discussions he revelled in – from ‘how our earliest convoluted crustal rocks came to be’ to ‘why his Citroen DS was simply way ahead of its time’. Place a campfire in the middle of the group, with maybe just a wee dram o’ whisky in hand, and the scene is set for many an enjoyable evening that was had in far-flung parts of his beloved, adopted country. Everyone leant forward, stoking the embers, caught up in his infectious enthusiasm to solve anything and everything.

He was a leader of note, and my most vivid memories of him come from those happy days when knapping rocks alongside a swathe of top scientists who came to pick his brains and see his rocks. Many geo’s would have given their eyeteeth to rub shoulders with these icons of earth science on the outcrops that we visited together, quarrelling vigorously over their various interpretations. But I with three others had it on a plate so to speak - Jim put together the ‘Belingwe Team’.

Tony Martin and I, both writing our PhD’s, and Mike Bickle and Euan Nisbet, post-docs from Oxford and Cambridge, had a right royal time mapping this greenstone belt – work that Jim evolved into a highly regarded model for Archaean crustal development, that was also instrumental in his being awarded the prestigious degree of Doctor of Science from his *alma mater*, the University of Edinburgh.

Jim was a stickler for the truth. He never held a prejudice and then found the evidence, either knowingly or unknowingly, to support it. Instead he knew the deep satisfaction that only comes from slogging through the heat of the day as well as many patches of thick thorn scrub, to gather hard facts and then put these data together with an open mind to reveal their secrets. And so his work, collaborative or otherwise, continues to stand the test of time.

In his teaching too Prof was uncompromising. His lectures and practicals were always up to date, relevant and well referenced, and he believed that it was not what was taught that mattered so much as how it was put across. Hence all his students were well drilled in sifting facts from the fiction that was becoming a growing concern as the publish-or-perish ethos gained momentum in academia.

When he was appointed to the Chair of Geology on Geoff Bond’s retirement, he immediately set about developing his vision for the Department, which was soon buzzing with new talent from all over the globe. They were attracted to the country’s ‘sexy rocks’, as one eminent Dutch geologist put it, as well as to the new laboratories Jim had equipped with a Mass Spectrometer, a Scanning Electron Microscope and other number-crunching machines so that they could make good reputations for themselves, which

several duly did. As a result the mining industry worldwide has benefitted, with many of the Geology Department's graduates attaining high office in corporate positions and in academia.

One abiding memory is of the time Jim got 'suspended'. I was way ahead, deep in my own thoughts, and hardly noticed the barbed-wire fence as I scissor-stepped over it. But it was too much for a shorty, when I was snapped out of my reverie by an exquisite stream of Scottish invective. My mistake then was to double over in laughter only to realize, as I hiccupped and tried to focus through tear-filled eyes, that Jim had somehow extricated himself from mid-air and was now barrelling down the hill, with shirt and shorts bloodied and torn, walking stick flailing above his head and eyes blazing in anger.

Those eyes: you didn't have to be a mind reader to know Jim's disposition. Most times his kindly eyes held a twinkle and a smile, but when they flashed with steely resolve, well 'hokoyo' - take cover!

I can just see Jim now, sat with his Maker, sketching out a map in the sand, "Now see here – why did you....?" Go well Jim, rest in peace.

## **A Bibliography of Jim Wilson's Work**

*Compiled by Tim Broderick*

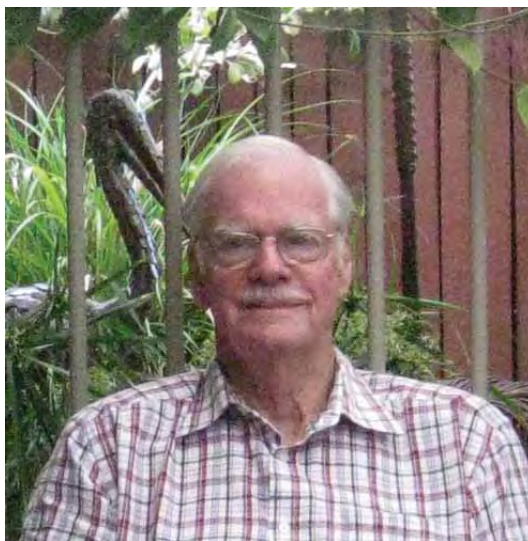
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**NEIL MICHAEL HARRISON**  
**1937 – 2016**



Neil Harrison was born in Padiham, Lancashire, England on 8<sup>th</sup> September 1937. He died in Perth, Australia on 16<sup>th</sup> March 2016 aged 78. Neil married Freda Entwistle in Darwen, Lancashire during 1959, and that same year joined the Southern Rhodesia Geological Survey where he was immediately dispatched to geologically map the Shangani and Fort Rixon greenstone belts. His caravan was to be his home until the mapping was complete in 1963, bulletin publication being effected in 1969. However, he went straight on to re-map the area around Kwekwe during 1964 and 1965 and Bulletin 67 was published in 1970.

Between 1969 and 1975 Neil served as Regional Geologist, firstly based in Gweru and latterly in Harare where the family settled in Marlborough and took up interests such as amateur dramatics. Some of Neil's notable mine work involved studies at the Redwing Mine at Penhalonga, the Roma Mine, Beatrice and the RAN in Bindura. The list of technical reports on his mine and dam site visits, as housed in the Geological Survey Library, is impressive.

For the Granite '71 Symposium Neil co-authored with Jim Wilson in presenting new K-Ar ages for a number of granites in Zimbabwe, and also with Keith Viewing on their reconnaissance of the Chinamora Batholith north of Harare. Then Neil was Secretary for the Metallogenesis '76 Symposium. He was appointed Chief Field Geologist between 1976 and 1978 when he became intimately involved with Gerard Stagman in production of the 1:1m Geological Map of Zimbabwe accompanying Bulletin 80, the outline of the geology of this country. Neil became the inaugural editor of the Annals of the Geological Survey, and in 1976 published with Kent Condie in *Precambrian Research* on the geochemistry of the Midlands Greenstone Belt.

The mapping achievement in 1977 was the combined coverage of the area between Gweru and Redcliff by three young geologists, Peter Cheshire, Andrew Leach and Steve Milner under the close supervision of Neil Harrison. The text and map were completed by 1979 and Bulletin 86 was published in 1980. Promoted to Deputy Director under Euen Morrison in 1978, Neil latterly became involved in a review of the Mineral



Resources of Zimbabwe for the Economic Conference of the Zimbabwe Promotion Council in 1980, a contribution that had great significance for investment in the newly independent Zimbabwe. He was co-Deputy Director with Kudzai Bwerinofa, but resigned in 1981 having completed the editing of the text for the Vungu and Gweru river valleys.

He took up a post as Senior Research Geologist with BHP Minerals in 1981 and was initially based in Melbourne. Later that year he was transferred to Perth, Western Australia. He became part of the gold exploration group, working predominantly on the Yilgarn Craton where he put his field mapping skills to good use. During this period Neil acted as a mentor to many of the younger geologists, instructing them in the art of field mapping and mineral identification.

With the merger of the BHP and Utah International exploration groups, Neil took on a wider role and worked in India, China, Canada, Europe and Russia. He became interested in “terrane analysis” and was part of a small research group that looked at unravelling some of the larger geological terranes worldwide.

After his retirement from BHP in 1998 Neil and Freda purchased a small caravan named “The Beagle” and spent many happy years taking caravan holidays in Western Australia as well as circumnavigating Australia, stopping where convenient and just enjoying themselves.

Sadly Neil developed severe breathing problems and died peacefully in his sleep following a short stay in hospital.

Our condolences go out to Freda and their daughters Lesley, Kim and Tracey and their sons Stephen and Richard.

*Tim Broderick & Vernon Stocklmayer*

## News



### Geology Department, University of Zimbabwe

*Maideyi Meck*

The year has progressed well so far. However, the contract for Ms Mudimbu, which expired at the end of March, was not renewed and in consequence the department failed to complete its teaching schedule. Efforts are in place to rectify this situation. Happily Dr Tony Martin and Professor Theo Davies will be joining the Geology Department on 1<sup>st</sup> June. These gentlemen are no strangers to us, and with their vast experience we are set to gain tremendously. However, the shortage of teaching staff continues to irk.

The university reopened for the second semester on 22<sup>nd</sup> February when the department enrolled 10 new students, implying that this year we will have two first year intakes. One intake will be completing semester 1 whilst the other will finalise semester 2.

The academic staff undertook the second assessment of students on industrial attachment during April. Most students have performed well and will be returning to the department at the beginning of June. However, a few did not perform satisfactorily and they will continue with their attachment. The current Part 2 students are now due for their industrial attachment, which should commence in June. We are hoping the mining industry will once again accommodate our students for the crucial experience that they require.

The second semester of the 2015-2016 academic year ends on 3<sup>rd</sup> June. The second year field trip will take place from 4<sup>th</sup> to 13<sup>th</sup> June in the Mberengwa-Zvishavane area, and will be led by Tony Martin. The Part I field trip will be undertaken from 12<sup>th</sup> to 21<sup>st</sup> August, and will cover the Bindura-Shamva Greenstone Belt, the Great Dyke and the Magondi Belt in the Chinhoyi area. Geologists who wish are welcome to join in the fun, and also find time to impart their experience and knowledge to our budding geologists.

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| Mr. K. Musiwa       | Hon-Secretary, GSZ | Mining, UZ    | <a href="mailto:kudzic@eng.uz.ac.zw">kudzic@eng.uz.ac.zw</a>             | 0772-948915 |
| DG Direct line/Fax: | 263-4-303557       |               |  |             |

**Note:** DG – Department of Geology; GSZ – Geological Society of Zimbabwe

Other Staff Members at DG: Dr T Mulugheta; Mr G Chinoda; Ms D Mudimbu; Ms S. Sibanda; Ms Ncube; Ms Magaranhewe; Dr R. Owen.

## The Professor Tom Blenkinsop UZ Geology Field Trip Fund

Following the successful presentation of the 2013 A.M. Macregor Memorial Lecture in Harare and Bulawayo, and his lead of the field trip in the Renco Mine area, Professor Tom Blenkinsop made a generous donation of \$200 to the Geological Society of Zimbabwe (GSZ). This was in support of University of Zimbabwe (UZ) geology student field trips. Over the years the UZ Geology Department has been under funded, resulting in their failure to raise sufficient money to conduct the mandatory field trips for its students. The GSZ responded by donating funds and materials from its own resources as well as from members. This assistance went towards the welfare of the geology students, especially in meeting costs for field trips.

Using the donation from Prof. Blenkinsop as seed money, the GSZ has now established the “*Professor Tom Blenkinsop UZ Geology Field Trip Fund*” to be administered by its Executive Committee. Tom has indicated an interest in supporting the Geology Department on a long term basis, not only to help in mobilizing funds for various activities, but by also providing moral and material support. Annually the students go on their main field trip, which lasts around 2 weeks with direct costs being in the range of \$6000 per class. Therefore we are appealing to all our members to donate generously to this worthy cause both in cash or in kind. Materials such as fuel and food are most welcome.

The direct benefits that accrue to the geological profession are that it ensures a properly trained graduate. Referring to the adage that the best geologist is the one who has seen the most rocks, our students need quality field trips. From these field excursions we also want to develop the Zimbabwe Geology Atlas.

Your donations, either in cash or in kind, should be forwarded to our Treasurer, Collins Mwatahwa – E-mail: [cmwatahwa@Angloplat.com](mailto:cmwatahwa@Angloplat.com) or to our Administrator, Julie Kuhn - E-mail: [geol.soc.zimbabwe@gmail.com](mailto:geol.soc.zimbabwe@gmail.com)

THANK YOU FOR YOUR GENEROSITY

H. N. Gumbo

June 2014

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Geological Society of Zimbabwe

Summer Symposium 2016

25th November 2016

Department of Geology, UZ

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**ZIMBABWE**

## *Geological Survey Department*

*Ernest T. Mugandani*  
[etmugandani@gmail.com](mailto:etmugandani@gmail.com)

### Staffing

**Sokesimbone Lunga, Muzanenhamo Frank and Sibongubuhle Mpindiwa (Ms)** (Principal Geologists) continue acting as Provincial Mining Directors for Matabeleland South, Mashonaland West and Masvingo Mining Districts respectively while **Ernest T. Mugandani** continues as Acting Deputy Director at the Geological Survey.

**Vimbai Gengezha (Ms)**, Geologist, has transferred from Midlands Mining District to the Geological Survey in Harare effective from March 2016. The transfer was at her own initiative.

**Denis Bob**, Senior Laboratory Hand, who had retired from the department in 2011 after having served for 37 years, rejoined on a contract basis with effect from 1<sup>st</sup> April 2016. His return was at the invitation of the department for him to impart his skills on the use of the rock-cutting machine and in thin section making to newly recruited geological technicians.

### Training

**Ernest T Mugandani, Mathias M. Ngoro and Lloyd Magombedze** attended a training course on Geological Information Management for Mineral Exploration in Japan from 27<sup>th</sup> February to 16<sup>th</sup> April 2016 organized and sponsored by the Japan International Co-operation Agency (JICA).

**Lloyd Shawarira** (Principal Geophysicist) and **Brian Muteta** (Geologist) attended a short training on Geochemical Mapping coinciding with the opening ceremony of UNESCO International Centre on Global Scale Geochemistry held in China from 10<sup>th</sup> to 18<sup>th</sup> May 2016.

### Trade Fair

**Temba M. Hawadi**, Director, and **Lloyd Shawarira** represented the department at the Zimbabwe International Trade Fair (ZITF) in Bulawayo held in April 2016.

### **ZGS/JOGMEC MoU Implementation**

A seminar on “Sustainable Development of Mineral Resources for the Mining Sector of Zimbabwe” was successfully held at Meikles Hotel, Harare on the 3<sup>rd</sup> March 2016. The seminar was organized by the Japan Oil Gas and Metals National Corporation (JOGMEC), the Ministry of Mines and Mining Development, and the Ministry of Economy, Trade and Industry (METI) of Japan. About 130 participants from Zimbabwe and Japan attended the seminar.

### **Editing of Bulletins**

More than 10 draft bulletins with their maps are currently being edited by a contracting company due to the support of African Development Bank (AfDB) funding through the Governance Institutional Strengthening Programme (GISP).

## **MINING INDUSTRY NEWS**

*Forbes Mugumbate*  
fmugumbate@gmail.com

### **Computerised Mining Cadastre**

Finally, the computerization of mining titles in Zimbabwe has commenced. This follows the signing of an agreement between the Ministry of Mines and Spatial Dimension in Harare on 23<sup>rd</sup> February 2016. The cadastre system to be used, *FlexiCadastre*, will provide all levels of Government, active and prospective license holders, and other stakeholders an integrated platform to record, validate, manage and report on all information relevant to exploration and mining operations in the country. Key focus areas will be on compliance monitoring, revenue collection and in regularizing the vast number of mining claims across the country.

For many years the manual management of mining titles has been an area of great concern to both miners and the administrators of these titles. Many disputes relating to mining claims relate directly to the complexities arising from the manual cadastre system. The old routine has also tended to deter investors, as ownership of claims has not always been guaranteed.

### **New Mining Bills**

Zimbabwe’s mining industry is headed for a major shake-up, with three Bills about to be introduced in parliament. The *Mines and Minerals Amendment*, *Minerals Exploration and Marketing Corporation*, and the *Pan African Minerals University of Science and Technology (PAMUST)* bills were recently outlined to Parliamentarians at a workshop in Harare in preparation for their debate. The Mines and Minerals Amendment Bill is currently at the Attorney General’s office for editing before it is tabled in parliament for discussion whereas the other bills are already under discussion. Some of the proposed changes in the Mines and Minerals Act include identification of several strategic minerals and how they will be searched for and exploited, creation of the computerised mining cadastre system, and measures to minimize disputes between farmers and miners. Interestingly the Minerals Exploration and Marketing Corporation Bill has already been complimented by some in parliament as being the best thing to have ever happened for minerals exploration. The understanding is that Zimbabwe has lagged behind in exploration because of the non-

existence of a State company to carry out the groundwork. Could this then be the reason why government has not been issuing EPOs to private companies for so long?

According to the PAMUST Bill, one of the university's objectives is for the "Provision of highly advanced post-graduate courses and research into mineral value addition and beneficiation and related mineral studies". The institution will initially be situated at the Scientific and Industrial Research Development Centre outside Harare. The university, to be established as a Nelson Mandela Institute of Excellence (NMI), will initially offer programmes in geosciences, mining engineering, extractive metallurgy, materials science and engineering, minerals business studies and other courses that may be consistent with the development of the mining industry.

### **Gatshe Gatshe River mineral discovery**

Zimbabwe's geological environment continues to produce surprises. Just a few years following the spectacular discoveries of ancient placer diamond deposits and gold in the most unlikely geological setting of the Umkondo basin in the southeast of the country, there are reports of a new discovery in yet another improbable area. This time Minister Chidakwa has reported a discovery of rich alluvial gold and platinum deposits along the Gatshe Gatshe River east of the resort town of Kariba. Discovery of this alluvial concentration is said to have been by a company contracted to supply sand aggregate for construction at the Kariba South power station extension. Although no information regarding the extent and quality of the deposit has been released, it is of significance that Gatshe Gatshe River is of local extent in gneisses of the western part of the Magondi Belt. There are, however, indications for river capture and the Gatshe Gatshe traverses Karoo basalts preserved along a fundamental fault line at Nyongwicha. It is therefore interesting to contemplate the source of the gold and platinum.

### **Gold production on the increase**

The Chamber of Mines reports that Zimbabwe recorded a 21% increase in gold production to five tonnes in the first quarter of 2016. The Chief executive officer of the Chamber, Isaac Kwesu, attributed the increase to more stable power supplies and higher deliveries from artisanal miners. With a production of 1.876 tonnes, artisanal miners accounted for 37% of the total gold produced during the quarter, compared to 1.215 tonnes furnished during the same period last year. Secondary producers, which include Unki, Mimosa and Zimplats, registered a 33% increase in gold production to 493kg.

### **Marange Diamonds**

Following the refusal by diamond companies operating in the Marange and Chimanimani areas to be collapsed into a new government-owned Zimbabwe Consolidated Diamond Corporation (ZCDC), the Minister of Mines ordered all the companies to halt mining immediately. Government engineers and security personnel were dispatched to the area to supervise withdrawal of the companies.

The removal of diamond producers attracted a renewed invasion of the area by artisanal miners. Hundreds of illegal miners flocked to the fields at night, just hours after the firms were given three months notice to pack up. Three panners died when a pit collapsed on them. Order has now been restored to the area.

Meanwhile President Robert Mugabe used his traditional birthday interview with state television to reveal that diamonds worth more than \$15 billion were produced over six years,

yet only about \$2 billion worth of the gems have been accounted for. This has caused a backlash of questioning as to how that could have happened when the companies operating in Marange did so as partners to the Zimbabwean government, which carried a 50% stake in each mining concern.

## Conferences



**The 23<sup>rd</sup> International Geological Congress, Cape Town, South Africa – August 2016.**



### **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.

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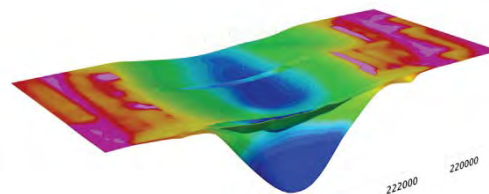
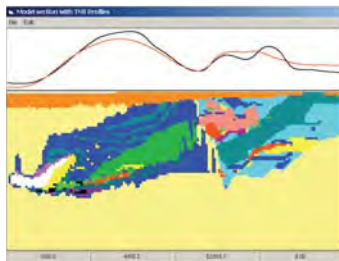
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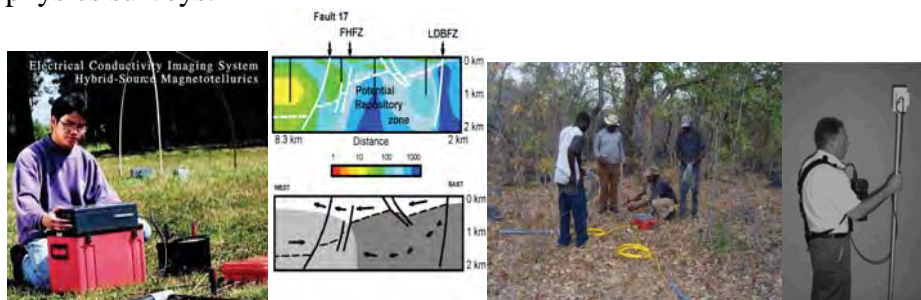


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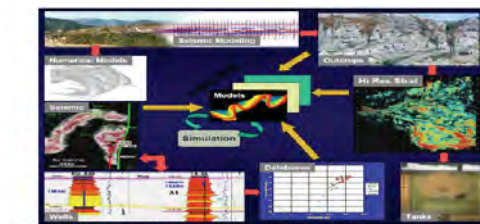
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