

Geological Society of Zimbabwe



Newsletter

October 2020

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The Orbicular Granite exposure in the western Whovi section of Matobo National Park
Photo: Paul Hubbard

www.geologicalsociety.org.zw

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

Special congratulations are due to Michel Zondo from the Natural History Museum in Bulawayo who has earned the 'John C. Graff International Paleontology Award' presented (this year virtually) at the 80th Annual Society for Vertebrate Paleontology Conference held between 11th and 17th October. Michel has participated in all of our 'dinosaur hunting expeditions' to Kariba and Dande and, due to his exceptionally sharp eyes and aptitude, was granted a scholarship to complete his Honours Degree in Palaeontology through the the Institute of Evolutionary Studies at the University of the Witwatersrand this past year. He deserves this recognition and is a credit to Zimbabwe and to our profession.



It is opportune to express, on behalf of the Membership of the Geological Society of Zimbabwe, our sincere condolences to our Chairperson, Ellah Muchemwa, at the loss of her husband, Daniel, on 24th May 2020. We can best show our support for her in upholding the endeavours of our Society, which continue through these difficult times.

We note the passing of Frank Muzanenhamo on 24th August 2020, and extend our collective condolences to his family, friends and colleagues.

As has become regular practice, Julie Kuhn has provided us with an update on Society Membership as detailed below.

Current membership – September 2020

Members – (January 2020 – 144; September 2020 – 169)

A warm welcome to our new members in the period April to September

Blair, Dale
Muredzo, Patson Simbarashe
Tafirenyika, Rutendo Amanda
Makwiranzou, Primrose
Homera, Tafadzwa
Batakathi, Bakhile
Chinodakufa, Dzingisai
Mhuru, Tonderai
Moodley, Adam
Rubaba, Tendai
Tsvangira, Dennis Tapiwa
Sibanda, Selina

Ncube, Sinikiwe
Chitsingo, Blessing
Dube, Dennis
Mugadza, Diana
Matsanga, Miriam
Mgodi, Kudzanayi
Nemasasi, Gilmour
Zammimba, Dumisani Mavis

Associate Members - (January 2020 – 23; September 2020 – 26)

New Associate members in the period April to September

Mangidhi, Chrison

Honorary Members – 16 (two Honorary Members have passed away since January)

Foreign Members - (January 2020 – 9; September 2020 – 8)

Some members have had their names removed from the register due to unpaid subscriptions. However, it is pleasing to report that four members have paid their arrears and their membership has been restored.

This is a good opportunity to remind Members that they must be fully paid-up and in good standing with the Society if they wish to attend the Summer Symposium activities.

My usual appreciation is expressed to those who contribute to this Newsletter, and I thank Kennedy Mtetwa for his support through the Committee in co-ordinating this participation. However, it is noticeable that the prevailing pandemic and consequent restrictions are having a distinct impact on the curtailment of activity in our Earth Science institutions, many of which have been unable to provide detail of recent events for this Newsletter. We look forward to positive responses relating to their respective achievements in the New Year, despite the adaptations that are being impressed upon institutions in the way they interact in their teaching and practice to the student body. In an effort to regenerate an appreciation of the legendary “Fred Crynge” in the Mennell Society, I have reproduced a description of his exploits within the Geology Department and on field trips gone by. Who knows, he may resurface in the Annals of the Mennell Society!

My thanks too go to Paul Hubbard, who has recorded his visit to the second known locality of orbicular granite within the Matopos Granite. This is an important record. Lockdown has been an opportunity for the Kariba lakeshore fossil gang as we have managed to have accepted and published our review on sedimentology with fossil finds in the Upper Karoo of the mid-Zambezi Valley. It is timely that we can share our abstract with you as well as the *Geological Magazine* link to the paper. To add to your interest, Kennedy Mtetwa has compiled some extracts on recent international mining news from www.Mining.com.

Please take special note of the arrangements for the 2020 Summer Symposium field trip to Mistress Mine on Saturday 21st November.

Tim Broderick



Chairperson's Chat

Ellah Muchemwa

Your Committee continued to operate smoothly albeit with a changed focus due to the constraints caused by the Covid 19 pandemic. Regular committee meetings were held via Zoom.

The Committee, in the interests of promoting the advancement of the geological sciences in Zimbabwe and the better understanding of our geological environment, have hosted an average of two online talks via Zoom every month, which is a higher incidence of talks than had previously been organised before the pandemic. The Zoom application was upgraded to allow for unlimited time during talks, thus making meetings more effective.

Member participation with the talks has been encouraging. Whilst we had to cancel the Zimbabwe Mineral Resources Conference scheduled for June 2020, I am pleased to say that some of the speakers billed for the conference have been able to share their work by way of online talks. All presentations held to date were recorded and are available on the Society website.

Collaboration with the Geological Society of South Africa (GSSA) is going well with GSZ members able to join and participate in online talks and courses organised by the GSSA and vice versa.

The Committee resolved to pursue the issue of registering the Society as a professional organisation. A professional registration sub-committee, led by the society's Vice Chairman, Renias Tirivangani, has been formed to focus on this important issue. Work has started on some of the critical building blocks required for professional registration, which ultimately will require to be supported by legislation. That is an Act of Parliament. Significant progress has been made in developing a Code of Ethics for the Society and a supporting Code of Conduct will also be developed. The drafts for these codes will be shared with members and we look forward to your contribution and input.

Professional registration requires that the Society membership is as representative as possible of the geologist population in the country. Please encourage as many of your colleagues, students and associates to join the Society.

The Summer Symposium, which is a face-to-face physical meeting scheduled for the end of November, has taken on a new format this year. Following the relaxation of constraints caused by the pandemic and general lockdown, a Summer Symposium Field Trip (the first one since the AGM) followed by a braai is being organised and all necessary precautions will be taken as per the Ministry of Health guidelines.

The Newsletter remains one of the most important links between the Society and its membership. We value your feedback on improvements and or topics that should be covered in the Newsletter.

Articles and Reports

The “Other” Orbicular Granite Site in the western portion of the Matobo Hills World Heritage Site

Paul Hubbard

Hubbard’s Historical Tours, Bulawayo

A chance to visit as rare a phenomenon as orbicular granite should never be missed. Thus it was with some great excitement that I accompanied members of the Matobo Conservation Society in late July on an excursion into the Whovi Wilderness area, located in the western portion of the Matobo Hills National Park, to search for the second orbicular granite site, long known about but never formally recorded. After an easy hike from where we left the cars, we climbed a large koppie which flattened out on top into an extensive plateau, cut by small gullies and dotted with small rocky outcrops.



Figure 1

Overall the site is not as impressive, both in extent and appearance, as the more famous eastern example at Diana’s Pool. This should not detract from its importance as one of only two orbicular granite sites currently known in Zimbabwe. The site, nestled between a dwala and a pile of boulders, covering an estimated 50 metres by 40 metres, has been exposed by erosion over millennia. Most of the orbes in the southwestern portion have been weathered out, leaving small cupules clustered on a gentle slope (Figure 1). The northeastern section has several orbicules preserved on the slope, some clustered, others scattered, all with the pleasingly-coloured concentric rings stained differentially by iron due to the liesegang segregation of dark and light mineral fractions. Unusually, compared to the site at Diana’s Pools, some of the concentric rings in the orbes stand proud from the rock (Figure 2), while others have eroded down uniformly within the surrounding granite host (Figure 3).



Figure 2



Figure 3

Samples were collected on the day by the Director of the Natural History Museum, and it is hoped that these may be made available for research purposes at a future date. The site coordinates were logged by GPS and specimens accessioned at the museum in the presence of a member of staff from the Geological Survey. However, one hopes that this site will retain its anonymity and refrain from becoming a tourist site with attendant damage as has happened at Diana's Pool in recent years. Nevertheless the location should be declared a National Monument, to add another layer of protection to that already given by the National Parks Act, on whose land it is found. One also wonders how many similar sites wait to be discovered. The Matobo Hills are a constant source of wonder and surprise!

See also: The reproduction of Owen Garvie's short articles on the Diana's Pool orbicular granite exposures in the Geological Society of Zimbabwe Newsletter, June 2009, pp. 7-9 available on the GSZ website www.geologicalsociety.org.zw

And: Broderick, Tim and Hubbard, Paul. 2016. The Matobo Hills of Zimbabwe – a perfect blend of geology, scenery and human history. 4, pp. 33-38 in *Africa's Top Geological Sites*, 35th International Geological Congress Commemorative Volume, Struik Nature, Cape Town, 312 pp.

Sedimentology and palaeontology of the Upper Karoo Group in the Mid-Zambezi Basin, Zimbabwe: new localities and their implications for interbasinal correlation

Lara Sciscio¹, Pia A. Viglietti^{2,3}, Paul M. Barrett^{2,4}, Timothy J. Broderick⁵, Darlington Munyikwa⁶, Kimberley E.J. Chapelle², Kathleen N. Dollman², Steve F. Edwards⁷, Michel Zondo^{2,8} and Jonah N. Choiniere²

¹Department of Geology, University of Johannesburg, Kingsway and Auckland Park, 2006 Johannesburg, South Africa; ²Evolutionary Studies Institute, University of the Witwatersrand, Johannesburg, Private Bag 3 Wits 2050, South Africa; ³Field Museum of Natural History, Negaunee Integrative Research Center, 1400 South Lake Shore Drive, Chicago, IL 60605, USA; ⁴Department of Earth Sciences, Natural History Museum, Cromwell Road, London, SW7 5BD, UK; ⁵Makari, 19 Jenkinson Road, Chisipite, Harare, Zimbabwe; ⁶National Museums and Monuments, 107 Rotten Row, Harare, Zimbabwe; ⁷Musango Safari Camp, Musango Island, Lake Kariba, Zimbabwe and ⁸The Natural History Museum of Zimbabwe, Park Road, Bulawayo, Zimbabwe

Abstract

The Triassic–Jurassic Upper Karoo Group of the Mid-Zambezi Basin (MZB; Zimbabwe) includes a thick succession of terrestrial sediments with high palaeontological potential that has been neglected since the 1970s. Here, we review the Upper Karoo Group stratigraphy, present detailed sedimentological work and identify new vertebrate-bearing sites at several measured sections along the southern shore of Lake Kariba. These fossil-bearing sites fall within the Pebbly Arkose and Forest Sandstone formations, and are the first to be recorded from the region since the discovery of *Vulcanodon karibaensis* nearly 50 years ago. The unique and diverse assemblage of aquatic and terrestrial fauna reported includes phytosaurs, metoposaurid amphibians, lungfish, non-dinosaurian archosauromorphs and non-sauropod sauropodomorph dinosaurs. This improvement of Upper Karoo Group biostratigraphy is important in refining its temporal resolution, and impacts both regional and global studies. Finally, the new fossil sites demonstrate the palaeontological importance of the MZB and its role in providing a holistic understanding of early Mesozoic ecosystems in southern Gondwana.

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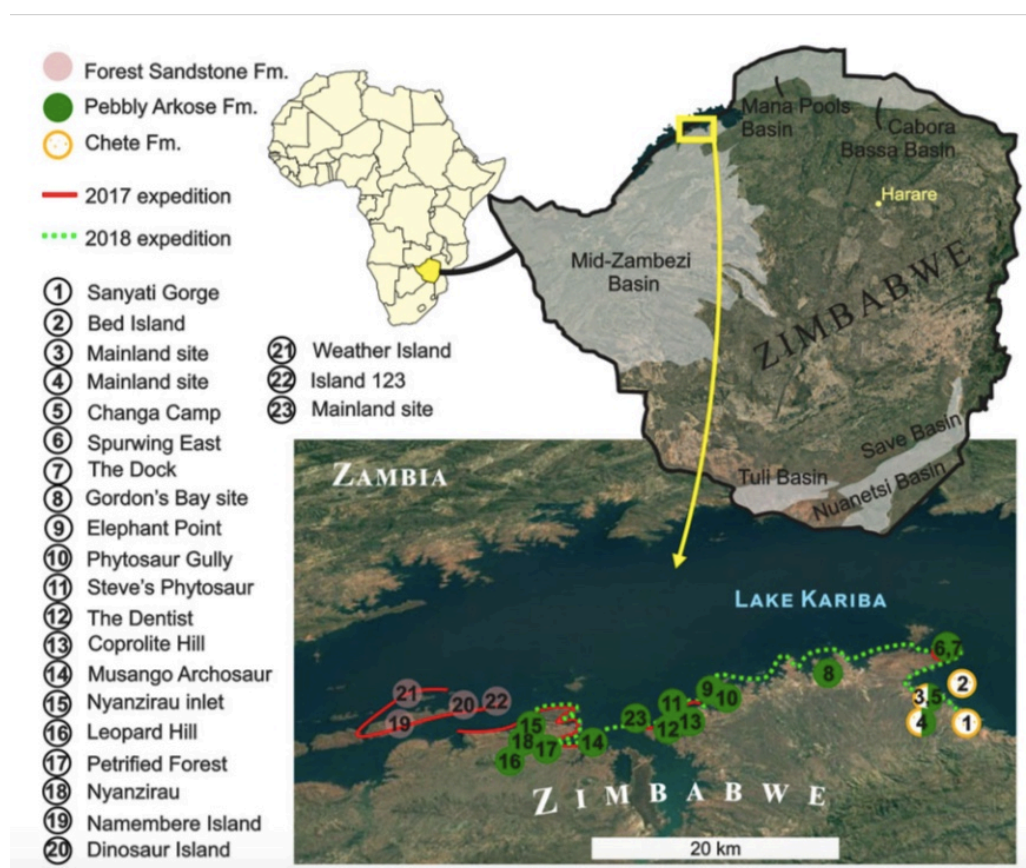


Fig. 1. Mid-Zambezi Basin field sites along the southern shoreline of Lake Kariba, Zimbabwe. Sites are numbered and the stratigraphic position for each site is indicated. Map data: Google, CNES/Airbus and Maxar Technologies 2020.

Some International Mining News

gleaned from <https://www.mining.com/>

by Kennedy Mtetwa

Nigeria pins hopes on first gold project to boost mining sector

Nigeria's first industrial gold project is on course to enter production next year, and its success will be crucial for boosting mining in Africa's biggest oil producing country. Thor Explorations Ltd is spending \$98 million to develop the project, which will have an annual average output of 80 000 ounces Au. The Canada-based company's Segilola Mine in the southwest should yield gold by the end of the first quarter of 2021, Minister of Mines and Steel Development Olamilekan Adegbite told reporters in Abuja, Nigeria's capital, on Friday 9 October 2020.

China bans Australian coal imports as political relations sour

China has suspended purchases of Australian coal, according to people familiar with the order, as Beijing continues to tightly control imports of the fuel amid soured political relations with Canberra. Chinese power stations and steel mills have been verbally told to immediately stop using Australian coal, the people said, asking not to be identified as the matter is private. Ports have also been told not to offload Australian coal, one person said. China's customs administration wasn't immediately available to comment.

Trafigura plans to restart the Mawson West Mine in Congo

Trafigura intends to restart its copper mine in the Democratic Republic of Congo, the Prime Minister's office said following a meeting with the commodity trader. Trafigura's head of mining Emmanuel Henry told Prime Minister Sylvestre Ilunga Ilunkamba that the mine had faced operational difficulties because of unstable copper prices, but aims to reopen after a temporary closure, the office's statement said. Trafigura's Mawson West Mine, north of Lake Mweru in Haut-Katanga Province, has a production capacity of 26 000 metric tonnes of copper a year and employs about 800 people, according to a company brochure.

Gold price rally lifts Top 50 mining stocks above \$1 trillion for the first time

The Top 50 most valuable mining companies added \$80.2 billion in market capitalization over the three months to end September, thanks to surging gold and silver prices, iron ore prices firmly in triple digits, and a copper price flirting with a two-year high. Mining's majors looked poised to join the trillion dollar club at the outset of 2020, but the pandemic torpedoed the early stages of a cyclical upswing for the industry, delaying the milestone by nine months. Measured from the height of the pandemic in March-April, the index has recovered by nearly \$330 billion.

Anglo American wants to explore base metals in South Africa

Anglo American wants to explore for base metals in South Africa, but the country needs regulatory changes to make it more competitive with other mining jurisdictions, CEO Mark Cutifani said. Policy uncertainty, insecurity of tenure and unreliable electricity supplies have stifled investment in Africa's most industrialised economy, where the mining industry contributes around 9% to GDP.

“We will explore base metals across South Africa... We are already in Zambia and other places, we want to do more in South Africa so we are looking for adjustments in legislation there,” said Cutifani during the 2020 Johannesburg Mining Indaba conference. He did not give details.

South Africa is traditionally Anglo American’s core territory, but the diversified miner has offset some of the risk of investing in the country, notably with operations in South America. Anglo American said its interest in base metals, which include copper, nickel, lead and zinc, was part of its global discovery strategy in greenfield and brownfield projects. Cutifani also said he would like it’s South African platinum group metals (PGM) business to increase production of nickel, which can be used in battery production.

Global lithium demand expected to double by 2024

Global demand for lithium is expected to rise from an estimated 47 300 million tonnes in 2020 to 117 400 million tonnes in 2024, according to a GlobalData report. Vinneth Bajaj, a senior mining analyst for GlobalData, said the increased demand would drive a corresponding upturn in lithium production over the same period.

“Lithium metal production is expected to reach 134 700 million tonnes versus 58 800 million tonnes in 2020,” Bajaj stated in the report. “This follows a significant 18.2% decline in 2019 to 78 200 million tonnes, resulting from sluggish global EV [electric vehicle] sales and a steep fall in prices, which, in turn, encouraged reduced production levels.”

US grabs stake in battery metals miner to fight Chinese control

The US Government is taking a \$25 million equity stake in Dublin-based battery metals miner TechMet, as part of a push by President Donald Trump to reduce the country’s reliance on supply chains dominated by China. The backing from the \$60 billion US International Development Finance Corporation (DFC) will help TechMet develop a nickel and cobalt mine in Brazil. Both metals are key in the production of the batteries that power electric cars and cell phones.

Tesla co-founder, J.B. Straubel, wants to build his startup Redwood Materials into the world’s top battery recycling company and one of the largest battery materials companies, he said at a recent technology conference. Straubel aims to leverage two partnerships, one with Panasonic Corp, the Japanese battery manufacturer that is teamed with Tesla at the Nevada gigafactory, and one announced weeks ago with e-commerce giant Amazon. With production of electric vehicles and batteries about to explode, Straubel says his ultimate goal is to “make a material impact on sustainability, at an industrial scale.” Established in early 2017, Redwood this year will recycle more than 1 gigawatt-hours worth of battery scrap materials from the gigafactory — enough to power more than 10 000 Tesla cars. That is a fraction of the half-million vehicles Tesla expects to build this year. At the company’s Battery Day in September, Chief Executive Elon Musk said he was looking at recycling batteries to supplement the supply of raw materials from mining as Tesla escalates vehicle production.

Trump issues new order to spur rare earths mining

US President Donald Trump has signed an executive order declaring a national emergency in the mining industry, a move that seeks to curb the country's reliance on rare earths in his latest bid to end China's control of the market. The directive, asks the Interior Department to explore using the 70-year-old Defense Production Act to speed up mine development. It also calls for a report evaluating possible measures such as tariffs, quotas, or other trade restrictions targeting China and "other non-market foreign adversaries." Local rare earth miners hailed the move. Pini Althaus, chief executive of USA Rare Earth, said it was "an important step toward ensuring the US is free from price manipulation and other aggressive economic manoeuvres".

Scotland's first commercial gold mine to open in November

Scotgold Resources has found "encouraging" signs of more precious metals at its Cononish gold and silver project in Scotland's Highlands, which is expected to pour its first gold by November 30. The company said this week that soil samples to the northeast of the project's area suggest the gold and silver structures may extend further than initially expected. Located in the Highlands north of Glasgow, the Cononish project is slated to become Scotland's first commercial gold mine. The project has faced several delays, with first production pushed out to May 2020 to make site modifications. The date was further postponed later due to interruptions caused by the coronavirus pandemic. Construction and development activities at the Cononish project, which were suspended between 27th March and 15th June to comply with the Scottish government's emergency measures, continue to move forward, the company said. Scotgold is now advancing the gold and silver anomalies identified at Beinn Udlaidh and Inverchorachan. It also hopes to make new discoveries on the Dalradian belt.

Scotgold, which received initial approval for Commonish in 2018, has been working to reopen an abandoned gold mine near Tyndrum for 12 years. The asset produced its first gold in August 2016 following the launch of an ore processing trial. After the local authorities gave the project their blessing, the company began building a large-scale operation. Scotgold envisions an underground mine with an initial production capacity of 23 370 ounces of gold annually, for up to nine years. The company expects to process around 3000 tonnes of ore per month in the first phase, and it says processing will double in phase two. The project currently has estimated reserves of 550 000 tonnes at a grade of 11.8 g/t Au, which, at an average production rate of 23 370 ounces per year, equates to a nine-year life-of-mine. The company had previously stated that there is the potential to improve on this in the future.

News



Geology Department, University of Zimbabwe

Maideyi Meck

The Geology Department has slowly but surely progressed during the COVID pandemic. The semester, which was temporarily closed on 23rd March, was resumed in June in a phased manner when we managed to:

- complete all outstanding teaching commitments;
- examine students and process all their results;
- continue to attach students who need attachment; and
- carry out the Part 4 student's field course around the Harare-Shamva Greenstone Belt.

The Geology Department was merged with the Chemistry Department with effect from 1st August 2020 with the new title of "Chemistry and Earth Sciences".

Staff are still working from home and students are being taught on line. The new semester is expected to start on 5th October 2020.

Staff Contact details as of May 2020:

Name	Position	Email	Cell Phone	Office Number	Office Phone 04-303211 (Extension)
Dr. M.L. Meck	Dept. Chairperson	mabvira@science.uz.ac.zw	0772906612	25	15027
Mr. P. Mangingaisa	Lecturer	mandingaisap@gmail.com	0783042494		
Mr. F.B. Mupaya	Lecturer	fbmupaya@gmail.com	0773599433	26	
Mr. O. Maponga	Lecturer	mapongaoliver1954@gmail.com	0772410609		
Mr. G. Kwenda	Lecturer	gkwenda@gmail.com	0772935936		
Mr P. Maketa	Lecturer	geologistmaketa@gmail.com	0777386284		
Mr S. Mabhanga	Lecturer	smabhanga@gmail.com	0783536530		
Mr C. Mhindu	Part time Lecturer	Mhindicharles@yahoo.com	0774460531		
Mrs G. Chipari	Secretary	gchipari@science.uz.ac.zw	0772950681	21A	15032
Mr. F. Zihanzu	Technician	fzihanzu@science.uz.ac.zw	0772218208	1	15024
Mrs E. Hamah	Technician	emhamah@gmail.com	0773924053		
Mr. D. Mupambo	Technician	DIDYMUS@science.uz.ac.zw	0772916652	16	15024
Mr. P. Sena	Technical Assistant	psena@science.uz.ac.zw	0772390026		15193
Ms. S. Gorogodo	Messenger/Cleaner		0772390026		15029



The Mennell Geological Society

President: Tinashe Mudzingwa (President)

Patron: Fadzanayi Bornwell Mupaya

fbmupaya@gmail.com

Full Name	Mobile Number	E-mail Address	Position
Tinashe Mudzingwa	0782243142/0717900502	mudzingwatinashe1@gmail.com	President
Millicent Madanzi	0778695957	miliemadance@gmail.com	Vice President
Tinotenda Mutengwa	0774512144	tinotendamutengwa@gmail.com	Secretary
Kudzai Dzobo	0773524701/0713302514	kdzobo@gmail.com	Senior Treasurer
Watson Mungadzi	0782270261/0715197544	mungadzitw@gmail.com	Assistant Treasurer
Nyasha Gara	0778255388	nyashagara601@gmail.com	Public Relations Officer
Wadzanai Nhau	0776108789/0719317453	Wadzanainhau@gmail.com	Project Co-ordinator
Farirai Mupamhanga	0718737862/0782101263	fmupamhanga01@gmail.com	Project Co-ordinator
Tafara Zungunde	0775029344	bukhositafaraz@gmail.com	Committee Member
David Ndudzo	0779299208	davidnthonyndudzo@gmail.com	Committee Member

Ten Years of F.J. Crynge

Detritus, 1970, Vol. 5, pp. 40-41

At the beginning of each year dozens of ignorant first year students, and occasionally members of staff, ask the question, “Who or what is F.J. Crynge?” Those who know Fred find this a difficult question to answer – Fred is all things to all people – a pillar of the Geology Department and also a pillar of the bar. When asked to describe him, most people hesitate and probably eventually come down to, “Oh, an ordinary sort of bloke – not the sort you’d notice – not very bright, but an excellent chap.” In truth Fred is a shy, retiring individual, not given to expounding on his considerable achievements, and eluding the attempts made by friendly individuals to get to know him. For all those who ask, “Who is F.J. Crynge?” and also for his friends, this then is the drama of Fred’s life at the University, starting at registration day, 1961.

Fred had wanted to do physics, maths and chemistry, but since by some strange mischance he had failed to satisfy the examiners in physics and maths (they weren’t awfully happy about his chemistry either), the people at the desks suggested, “Why don’t you go and talk to the gentleman with glasses sitting over there?” And so Fred became a geologist.

He enquired about the possibilities of studying mealie-growing for a third subject, being a practical, down-to-earth sort of man, but was told this was not possible. The authorities suggested basket-making or domestic science as alternatives, but Fred scorned these as unsuitable for a man of action, and so a deadlock was reached.

The merry year passed, with coffee in Swinton and evenings at the George (Hotel) breaking the monotony of rock-breaking, and it was only when exams came that the men at the top noticed that Fred still had no third subject. He failed chemistry and geology anyway, but managed to confuse the authorities by arguing that it might have been different if he had had three subjects like everyone else, and that they had led him astray by not providing him with a third. By hammering on his theme that , “Practice makes perfect” he tried to persuade them that next time would be different, and when they appeared skeptical, suggested that as a logical alternative he should be promoted to second year, then the problems of the third subject wouldn’t arise. An so, in 1962, Fred Jurassic Crynge entered second year geology and chemistry, and embarked on the first of a series of historic pilgrimages to Gokwe, to carve his name on the slab of rock which every second year geology student knows. His second year was even more action packed than his first, and Fred was voted amongst other things, the Union’s Most Devoted Barfly, the Most Uncritical Coffee Drinker (by residents of Swinton) and the Man Most Likely to be Booted Out at the End of the Year. In fact when results came out, Fred was amazed to discover that he had failed again. For the first time his self-confidence began to desert him. He began to have doubts about himself. In an anguish of indecision he applied for Gwebi [Agricultural College]. He was rejected, but he’d lost his enthusiasm for growing mealies by this time, so he didn’t mind too much. He wrote the police entrance examination, and failed. There was no alternative. He applied to repeat second year, and was accepted.

1963 passed in much the same way as 1962 and 1961. Always a delicate lad, Fred decided it would be worth his while to join the student health scheme. He went dutifully along to be X-rayed, and shortly afterwards received a note from the medical officer suggesting a consultation. Fearing the worst, Fred ignored the note. It seemed more practical to start writing his will, leaving his geological hammer to be used on second year field trips, and to Mr J. Morgan [Chief Technician] the mineral specimens which he had stolen from the First Year Geology Lab. He never did find out whether he had T.B. or whether, as some ugly rumour had it, the X-ray had detected a large question mark where his lungs should rightly have been. Shortly after this he became afflicted with pains, which troubled him grievously three times a day. A careful study convinced him that the periods of suffering occurred after meals. Filled with trepidation, Fred went for a checkup. His doctor hid his concern at the symptoms, and later wrote asking Fred to come for a further observation. Once again, however, Fred couldn’t face the dreadful truth, and resisted all attempts to nail him for further examination. He failed at the end of the year and was permitted to repeat on the grounds of ill-health.

After this he continued to write his second year exams diligently at the end of every year, but nobody took much notice after the first three times. In fact, the authorities conspired to ignore his existence, even to the extent of crossing his name off lists and registers. But his greatness did not go unrecognized. In 1965 the F.J.C. Syndicate was formed, honouring one of the giants of geology. (The company advertised in *Detritus* for a few years, but the adverts wee dropped when payments fell three years behind).

Fred had never missed a Mennell Society or a second year field trip. He signs his name diligently in rest camps, on mine indemnity forms and at tsetse control gates, and his signature is still seen in guest books on the Copperbelt, Mazowe, Muriel, Mhangura, Turk, Kamativi, Dorowa, Zisco, Dalny, Globe & Phoenix, Shurugwi, Shabani, Empress, Bikita and Alaska mines, and on a slab of concrete 4.35km from Dete, to name but a few. In this connection there is an incident worth recording. The management of Sternblick Quarry became quite heated on the occasion of a second year field trip when apparently 13 people went into the quarry and only 12 returned, the missing person apparently being Fred. They were aghast at the seemingly callous indifference of his classmates, who of course knew that Fred was well able to take care of himself.

On another occasion Fred was absent from a teach-in at Chingola, and the explanation given was that one of Fred’s subjects was theology and that he was attending church. It

seems to us more likely that loyal mates were covering up for M Crynge, who was probably still reposing at the bottom of his sleeping bag, the hour being an indecent 10am.

Nor is Fred only interested in geology. He is a keen sailor, member of the Exploration Society and he excels at tiddlywinks, altogether a great all-rounder. *Detritus*, *Unicorn* and *The Herald* all have literary gems from Fred on their files, and we hope to have another article from him in the next issue of *Detritus*.

This then is the Fred Jurassic Crynge whom we have known and loved for the past ten years. It seems probable that he will remain in our midst, a hope and comfort to those who fail Mid-Sessionals and receive Academic Warnings, for many years to come.

Anonymous

Acknowledgements

Professor G. Bond for his loyal support of Fred in the face of overwhelming odds; the DA Gokwe for Fred's rock and nine idyllic field trips; the staff of the Geological Survey for their nostalgic reminiscences; Dr R. Cosser in the Chemistry Department, who knows more than he should; the University X-Ray Service; the Student Health Scheme; the bottle in Prof's lamp-box, which has been an inspiration to us all; and finally to Mr F.J. Crynge (personal communication).



MIDLANDS STATE UNIVERSITY
FACULTY OF ENGINEERING & GEOSCIENCES
ZVISHAVANE CAMPUS

Updates from the Faculty of Engineering & Geosciences

The Midlands State University (MSU), like all higher learning institutions in Zimbabwe, the region and abroad, has had significant aspects of its teaching and learning migrated to online platforms. In compliance with Zimbabwe's Statutory Instrument 83/2020 (Covid-19 National Lockdown) and related regulations/pronouncements, MSU and the Faculty of Engineering & Geosciences implemented a phased-reopening for Graduating, Returning and First Year classes.

During the Covid-19 pandemic, the Faculty has experienced some staff movements out of the Faculty. One lecturer and one technician resigned from the university to join the local mining industry while one other lecturer left to join a university outside Zimbabwe. A recruitment drive to replace these critical staff is already underway.

Our Faculty, as guided by MSU, is part of global efforts in the fight against the Covid-19 pandemic. During the initial phases of the pandemic, collaborative aspects of our research, teaching and learning (including conferences and meetings) had either halted or were conducted entirely online. This new-normal is expected to continue even post-Covid-19, but we hope that a mixed-mode to accommodate the old-norm of physical meetings/conferences will gradually re-establish itself.

Submitted by Dr Antony Mamuse, Executive Dean
antony.mamuse@graduate.curtin.edu.au



NUST – DEPARTMENT OF APPLIED PHYSICS **EARTH SCIENCES PROGRAM**

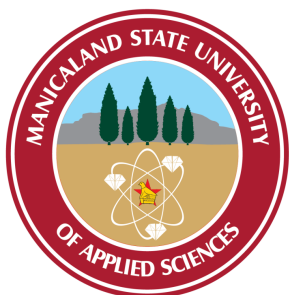
Contact person: Robin.T. Mashingaidze
robin.mashingaidze@nust.ac.zw

ZIMBABWE SCHOOL OF MINES

Serving the SADC mining industry



Fyrence Ndebele reports that due to consequences related to the current lockdown very little activity is taking place at the School of Mines and unfortunately there is no worthwhile news to report.



MANICALAND STATE UNIVERSITY OF APPLIED SCIENCES

**Stair Guthrie Road
Mutare
Zimbabwe**

**P. Bag 7001
Mutare
Tel: +263(20)2067572**

Department of Mining and Mineral Processing

Amicable Hove, our contact person in the Department has since left their employment and we are in the process of establishing further contact in order to bring you periodic news from the Department. The disruption to teaching caused by the prevailing pandemic has not helped as little that is newsworthy has taken place.

Contact details

Name	Position	E-mail address	Phone No.
Mr Nyamagudza	Chairperson	tatenda.nyamagudza@staff.msuas.ac.zw	+263 2063456 Ext. 3027
Mr M. Toga	Lecturer	mainford2002@gmail.com	+263 775606542
Mr E. Chipfupi	Lecturer	echipfupi@gmail.com	+263 77211611
Dr L. Chipise	Lecturer	chipisel@gmail.com	
Mr Chewu	Lecturer	chewuxy@yahoo.com	+263 776460899
Mr P. Munemo	Assistant Lecturer	munemoprosper@gmail.com	+263 773966036
Mr T.F.K. Ngoroyemoto	Lecturer	tapiwa.ngoroyemoto@staff.msuas.ac.zw	+263 715197260

Other Members include: Dr Mamuse, Mr Mutizhe and Mr Dzimunya



Geological Survey Department

Vimbai Takawira

takawiravimbai@gmail.com

The department continues to suffer from staff depletion, and the Covid-19 lockdown. Only a few sections are functional to ensure service provision.

Staffing matters

We start on a sad note by announcing the passing on of **Frank Muzanenhemo** on 24th August 2020. Frank joined the Geological Survey as a geologist, and rose to become a Chief Geologist before being promoted to be the substantive position of Deputy Director for Manicaland Mining Province.

Robert Tapera Sithole, Chief Cartographer, retired on 8th August 2020 after 37 years of service in the department. We wish him the best in his retirement. He still feels young and capable of assisting anyone with draughting assignments.

Vimbai Takawira, geologist, resigned with effect from 1st October 2020, leaving for greener pastures after 5 years of service in the department.

Mangwiro Sibanda, geologist, was transferred from Mashonaland Central Mining Province office to the department in mid June.

The department has one UZ Geology student on attachment, **Karen Y. Mushayi**, who joined in March 2020. The second attachee, **Audrey Shamu**, completed her attachment in August 2020 whilst the third attachee, **Gerald Kupeta** who had been seconded to the ZCDC, also completed his attachment in August 2020.

ROBERT TAPER A SITHOLE (Chief Cartographer 1983-2020)

Photo: Lucy Broderick

Robert joined the Geological Survey Department on 1st July 1983 having worked with Jan Beirling and Keith Duguid at Shell Development Zimbabwe, mostly relating to the Save, Western Areas and Lusulu coal localities. He retired after 37 years of service to the ZGS on 8th August 2020, his Birthday. Robert joined the Department as a Cartographer, being promoted to Assistant Chief Cartographer in 1988 and, following the retirement of Arthur Barrie, he became Chief Cartographer in 1991.

Robert was responsible for the compilation and drawing of two published geological maps – that for Short Report 50 around Mutandahwe and that by Claudius Makuni and Robert Simango accompanying Short Report 52 around Norton.

He then played an integral role in the support teams for several important projects that included:

British aid projects under Dr John Baldock between 1983 and 1986 that resulted in production of comprehensive bulletins covering Harare, Bulawayo and Rushinga to Nyamapanda, followed by Campbell and Pitfield's *magnum opus* on the structural controls of gold mineralization in Zimbabwe, which culminated in the publication of Bulletin 101 in 1994.

The French Technical Aid programme resulted in publication of the Centenary and Mount Darwin maps and later printing of Short Report 53 and included a component in the cartographic training of technicians.

Support was availed to the Australian team led by Peter Fey (Chewore West) with Ben Goscombe mapping Chewore East and Richard Flint who remapped the Bubi area. At the same time Peter Fey supervised the mapping south of the Chewore Inliers by Zizhou and Lunga, now published as Short Report 55.

Robert also assisted in the German projects under the auspices of the BGR, which was led latterly by Lothar Hahn and resulted in production of B96 (Gurube West) and of SR49 (Matamve) by Max Resch.

Dave Bartholomew produced SR54 north of Doma, publication of which was supported through German (CIM) assistance.

Phillip Oesterlen produced B98 (Dande West) and summarised EPO reports in B102 as well as being closely involved with Mineral Resources Series No. 27 on industrial minerals. It was he who sourced funds for the ZGS to print 6 outstanding

publications and he also initiated the conversion of the Drawing Office from hand-drawn to digital cartography in 2000 through GTZ and BGR assistance. Robert was intimately involved in these processes as he was in the support of Houda Bouammar's Mataga and Ali Ait Kasi's (Gokwe North) mapping projects between 1996 – 2002. This was the time when a compilation for the new 1:1 Million Geological Map of Zimbabwe was established.

Robert was there when the old line camera, set on rails, was replaced by the German-funded Klimsch Camera through a giant hole punched through the wall of Maufe Building. As the Klimsch too became obsolete, and digital technology has taken over, he supervised a re-opening of the hole in the wall and its replacement with state of the art equipment. Unfortunately his retirement came before full application of this technology could be applied.

R.T. Sithole became increasingly embroiled in administration, notably that relating to the regular updating of the EPO map and latterly he played a key role in the implementation team of the African Development Bank project, which *inter alia* funded cartographic equipment, the editing and printing of outstanding publications and maps and the training of cartographers, a programme that came to a head in 2018. We wish Robert all the very best in his retirement.



Join the Geological Society of Zimbabwe Facebook Group

MINING INDUSTRY COMMENTARY

Forbes Mugumbate
fmugumbate@gmail.com

Mineral Exploration in National Parks banned

A news item that was captured in many parts of the world was the announcement that the Government of Zimbabwe had banned mining activity within the country's National Parks. This followed an outcry by environmentalists and Non-Governmental Organizations when a Chinese company attempted to start drilling in their special grant in an area projected as a westward extension with potential for development of the Hwange coal seams. Minister of Information and Publicity, Monica Mutsvangwa, made the announcement for an immediate ban of mining activities following a Cabinet meeting. She indicated this would be followed by cancellation of the mining titles.

Although this gesture might have been taken favourably by some sections of the community as being sensitive to environmental issues, some sections will obviously see the move as being unfair given that the companies had acquired the titles legally, and that there are environmental instruments to safeguard various concerns. The questions that arise include how the cancellation is going to be effected when no offence has been committed, and compensation to the miners who would have already spent substantially in mobilising equipment and other resources.

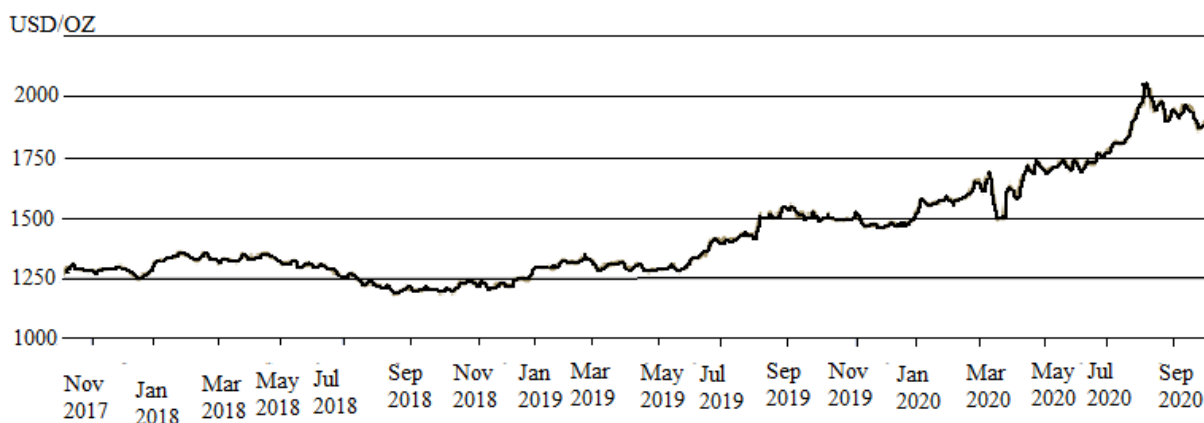
Similarly, alluvial mining along rivers has been banned. What makes this interesting is the apparent frequent change in policies. Alluvial mining was banned in 2014, which resulted in closure of a thriving mining concern at Penhalonga. In 2018, the Government lifted the ban, which resulted in many companies going back to the rivers. Another ban has been imposed on all rivers except Angwa and Save. Again the question is about whether the miners will be compensated.

Caledonia Mining seals a deal with Government

Caledonia Mining Corporation has signed a memorandum of understanding (MoU) with the Government ostensibly to assist in boosting investment and production. In the MoU, presided by President E.D. Mnangagwa, Caledonia declared and affirmed its intention to increase gold production several fold. So far company production in the 9 months to September 2020 stands at 1.33 tonnes, 12% more than the 1.12 tonnes produced in the same period in 2019. The company is targeting a comparative production of 2.5 tonnes by 2022. Caledonia, which has installed impressive infrastructure including a solar power plant, described Zimbabwe as one of the remaining gold frontiers.

Questions will always arise when the generality of people do not have details of the contents of the MoU. An MoU of this nature gives the impression that this is a contract tailor-made to meet specific requirements relating to the two parties, yet there are laws and fiscal incentives currently in play. This approach might cause other companies to request special treatment by way of a MoU as they seek to maintain a level playing field.

Gold glimmer



Debate about the future of gold is ongoing following the breaching of the London Bullion Market Association's all-time record gold price of \$1940.90/oz on 28th July this year. The discussion is around what drivers will most likely spur new growth, and which are likely to sustain growth. According the World Gold Council (WGC), although gold has been on a generally positive trend for the past few years, the onset of the Covid-19 pandemic has made gold's relevance as a hedge even more apparent and accelerated its price performance.

On the other hand, Global Market Intelligence says major economically mineable gold reserves have declined globally over the last decade owing to a lack of new discoveries.

Why then are Zimbabwean geologists not taking advantage of these parameters to attract investors to develop one of several idle gold deposits! Caledonia has described Zimbabwe as the last frontier for significant gold deposits. Is it not time to start thinking about participating in future developments in the gold mining sector?

Glittering diamonds

Anjin Investments, a China-Zimbabwe diamond mining joint venture, re-launched its mining activities recently. Anjin is one of the companies that were evicted from Chiadzwa by the previous government in a failed attempt to bring all diamond-mining companies operating under one roof. The seriousness of Anjin in this business can only be inferred from the fact that they invited the highest office in the country to preside over the re-launch ceremony. President Mnangagwa expressed confidence that Anjin will contribute to the revitalization of Zimbabwe's diamond mining industry due to its experience and expertise.

Meanwhile the Zimbabwe Consolidated Diamond Company (ZCDC) has announced the appointment of **Mark Mabhudhu** as CEO. The company has not had a substantive CEO since the removal of Morris Mpofu in 2019. Roberto De Pretto, who was acting CEO, had his contract terminated in early September 2020. Mark Mabhudhu, who leaves his directorship at Vast Resources, is in fact returning to the role he left in 2016 under unclear circumstances. This was hardly a few months into the top job. We can only wish him the best this time around.

RioZim who took the strategic decision to halt their diamond sales amid slumping gem prices caused by the Covid-19 pandemic, which had caused jewellery stores to close, cutters and polishers to stay at home, and which effectively ground the diamond industry to a halt over

the past six months, is now optimistic that consumer demand for polished stones is recovering. Stone production from Murowa was being stockpiled. Encouraged by the rapid recovery of the diamond industry, RioZim is now contemplating a two-phase expansion programme at Murowa that will result in them more than doubling their diamond output. A first phase costing \$52 million would extend the life of the mine by four years from the current 14 months while a second \$400-million phase would see the construction of Zimbabwe's largest underground diamond mine, which would increase production to 2.5-million carats.

Meanwhile, Tongai Muzenda, the Minerals Marketing Corporation of Zimbabwe (MMCZ) General Manager, has indicated that his organization is responding to the fact that potential buyers of Zimbabwe diamonds from around the globe have not been able to come into the country for auction sales due to imposed travel restrictions. The MMCZ is resorting to conducting private diamond sales. They are also using the digital platform by sending prospective buyers photographs of diamonds on sale.

Small-scale mining

Small-scale miners, currently the country's leading producers of gold having delivered over 60% of the country's gold in 2019, are reeling under a plethora of challenges that certainly threaten the country's vision for producing 100 tonnes of gold by 2023. Chief among the challenges are shortages of cash and fuel, and the plethora of accidents. Gold deliveries to Fidelity Printers and Refiners (FPR) between January and July this year amounted to 12.018 tonnes, about 22% down on the same period in 2019. Gold production by small-scale miners plunged to 0.748 tonnes in July 2020 from 1.813 tonnes recorded in January suggesting a bleak future. The FPR is unable to pay for the gold delivered in a timely fashion. For instance, it takes 2 to 3 weeks for miners to receive their cash following gold delivery. This tends to promote the illegal selling of gold to parallel markets. The FPR has attributed the delays in payment settlement for gold deliveries to the shortage of foreign currency following the outbreak of the Covid-19 pandemic, which has seen restrictions on the international flights that transport the hard currency into the country.

Small-scale mining is also affected by delays by the Ministry of Mines and Mining Development in processing applications for mining title. Mines Ministry provincial offices have huge backlogs in applications for the registration of claims that date back in some instances, to more than five years. Some miners have commenced mining without their approved papers. Such miners cannot sell their gold to FPR as they would be engaged in illegal mining activity.

Accidents remain frequent in small-scale mining, mostly due to bad mining practices. The Ministry is unable to enforce compliance with mining and safety regulations. For instance one wonders where the mines inspectors were when hundreds of shafts were crudely developed within a few metres of each other at a registered mine near Chegutu where five miners perished recently when a shaft collapsed on them. Government has since ordered a cessation of the search after 30 days of fruitless efforts to find survivors.

The sparkle of platinum in Zimbabwe

The Russian-Zimbabwean platinum venture, Great Dyke Investments (GDI) is on the verge of developing what could be Zimbabwe's largest platinum mine. The company reports that the African Export-Import Bank has completed a due diligence study

allowing it to proceed with a \$500 million funding programme for the Darwendale project's first phase. The JV, which plans to start mining platinum ore in 2021, has already spent \$100 million to date on geological exploration, construction of two mine portals and that of surface infrastructure. When development is complete, the mine is expected to produce 860 000 ounces of platinum-group metals and gold a year.

Another platinum miner, Anglo American's Unki, is acknowledged for contributing to the fight against Covid-19 by donating a newly equipped ten-bed intensive care unit (ICU) to Gweru provincial hospital. The donation includes ventilators, ICU beds, oxygen equipment, personal protective equipment, multiparameter monitors and other medical equipment.

Meanwhile Zimplats' revenue for the financial year ended 30th June increased by 38% year-on-year to \$868.9-million, mainly owing to an increase in the average prices of rhodium, palladium, gold and nickel. However, in view of the economic uncertainty posed by the Covid-19 pandemic, Zimplats decided not to declare a dividend for the financial year as a measure to guard against unforeseen consequences of the pandemic.

On-Line Talks

As reported by *Houda Bouammar*

The Geological Society of Zimbabwe has introduced a programme of on-line talks during the prevailing Covid-19 pandemic using the *Zoom* platform.

The talks are free, and for those members who could not participate, a recording of the presentation is made available on the Society's website.

Through this approach we have proven that we are able to organise and deliver more talks than have previously been possible. The flexibility also allows inclusion of international speakers and participants complement our locally based speakers and members.

To date, the following talks have been presented and have each been viewed by approximately 30 participants.

Friday 17 July 2020

The Importance of Quality

by Mark Burnett of AMC Consultants (UK) Limited

Friday 24 July 2020

Mineral Exploration using modern Airborne EM systems and ground follow-up with state of the art SQUID sensor. Case Study: Jacomynspan Ni-Cu deposit, South Africa.

by Mhaka Ushendibaba, Consultant Geophysicist with Geospace

Friday 14 August 2020

Alluvial Gold – Exploration and Investment Policies – an interplay

by F. Bornwell Mupaya

25 September 2020

Coal and the Zimbabwe Economy

by Oliver Maponga

Friday 9 October 2020

A Reassessment of the Geodynamic Evolution of the Zimbabwe Craton

by Hielke Jelsma

Friday 16 October 2020

Geochemical constraints on the origin of the Main Sulfide Zone in the Unki Mine area, Shurugwi Subchamber of the Great Dyke, Zimbabwe

by Jeff B. Chaumba

Friday 23 October 2020

Botswana kimberlite exploration and geomorphology

By Andy Moore



SEG Timothy Nutt 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.

Strong preference will be given to those applicants who are SEG Student Members.

To become an SEG Student member visit www.segweb.org/join

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 April 30 following the calendar year in which they are awarded / dispersed. .

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.

A 2018 Research Grant application form may be downloaded from

www.segweb.org/StudentResearchGrants

Student Research Grants Committee c/o Assistant for Student Affairs, Society of Economic Geologists Foundation 7811 Shaffer Parkway, Littleton, CO 80127-3732 USA

Phone: +1.720.981.7882/Fax: +1.720.981.7874



GSZ Research and Development Fund

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

Conferences

Geological Society of Zimbabwe

Summer Symposium 2020

The Summer Symposium 2020 and Field Trip to Mistress Pegmatite Mine

21st November 2020

Due to COVID-19 the Summer Symposium this year will be replaced by a field trip to the **Mistress Mine** north of Harare. This will allow social distancing guidelines to be adhered to.

In a poll put to Members many indicated they would not want to risk their health by attending the Symposium, and there were also insufficient offers for presentations.

International participants indicated a reluctance to travel at this stage.

On **Saturday 21st November 2020** we will meet at the **UZ Geology Department** at **8.30am** and proceed to the Mistress Mine from there. You will need to make your own transport arrangements.

After visiting Mistress Mine we will drive to Thetford Estate for a braai overlooking the dam. Thetford has a **US\$5 entrance fee**. Braai fires will be provided but you will need to bring your own food and drink. There are limited chairs available, so please bring a camp chair. Later we will proceed to various view points at Christon Bank that look across the Mazowe Valley to the Iron Mask Range and the surrounding African Landsurface.

You will be able to view excellent cave paintings as well a variety of game on Thetford Estate.

We look forward to seeing you on this trip and to catching up face-to-face.

All precautions as required for COVID-19 will be observed including social distancing and the wearing of masks.

Feedback and participation notification to Andrew du Toit andrewdutoitzim@gmail.com
or Julie Kuhn geol.soc.zimbabwe@gmail.com



So Beware! – Tony's back in Town, and here we are actually looking at a lanner falcon feeding on the ledge below. *Photos: Lucy Broderick*

We look forward to seeing you on the trip!

12th International Kimberlite Conference

30 years of diamonds in Canada

16th – 20th August 2021

Yellowknife, Canada

secretariat@12ikc.ca

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Visit <http://www.geologicalsociety.org.zw/> to see where the adverts can be placed, and choose your spot.

Please contact Andrew du Toit at andrewdutoitzim@gmail.com, or the Administrator at geol.soc.zimbabwe@gmail.com, for more information.

Don't forget - you can also advertise in this Newsletter through these contacts.

GEOLOGICAL SOCIETY OF ZIMBABWE: CONTACT DETAILS OF MEMBERS OF THE EXECUTIVE COMMITTEE FOR 2020		
NAME	PORTFOLIO	EMAIL
Muchemwa, Ellah	Chairperson	ellah.muchemwa@outlook.com
Tirivabaya, Renias	Vice Chairman	rennyt80@gmail.com
Musiwa, Kudzai	Hon. Secretary	kudzimusi@gmail.com
Kuhn, Julie	Administrator	geol.soc.zimbabwe@gmail.com
Mwatahwa, Collins	Hon. Treasurer	collinsm885@gmail.com
Mtetwa, Kennedy	Newsletter	kcmtetwa@yahoo.co.uk
Bouammar, Houda	Talks & Field Events. Phaup Award	houda.bouammar@gmail.com
du Toit, Andrew	Summer Symposium. Phaup Award	andrewdutoitzim@gmail.com
Mugumbate, Forbes	ZGS Representative. Phaup Award	fmugumbate@gmail.com
Chikandiwa, Nevison	Without Portfolio	wchikandiwa@yahoo.co.uk
Duma, Steve	Without Portfolio	duma.steven@gmail.com
Ndebele, Fyrence	Regional Rep., Matabeleland	fndebele@zsm.co.zw
Mamuse, Antony	Regional Rep., Midlands	antony.mamuse@graduate.curtin.edu.au
Hove, Amicable (co-opted)	Regional Rep., Manicaland	amicableh@gmail.com

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