

Inland Geological Society

May 2014

Newsletter of the Inland Geological Society

Volume 30 No. 5

This Meeting:
Thursday,
May 1st

Time:
Social: 6:00pm
Dinner: 7:00pm
Lecture: 7:30pm

Location:
LSA Associates
1500 Iowa Ave
Suite 200
Riverside, CA
92507
(Map on Pg. 4)

Coming to
Dinner?
Please RSVP:
By Friday 4/28
(951) 784-2168
dixie.lass@att.net

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May Speaker:

Ian R. Gilbert

Graduate Student, University of California, Riverside, CA

Microfossils of the Middle Cambrian

Abstract

The Parahio Valley section in the Tethyan Himalaya is the type section for the Cambrian for that region. Age determinations by trilobites noted such characteristically late Cambrian age trilobites, such as *Olenus & dikellocephalus* (Hayden 1904, Reed 1910). The notion of late Cambrian rocks immediately below an unconformity with Ordovician rocks has endured based on late Cambrian trilobite biostratigraphy (Pasco 1959, Parcher 1986, 1988). This determination has been supported by the report of conodonts in the same rock (Bhatt & Kumar 1980). However, revision of the original trilobite type material by Jell & Hughes (1997) re-evaluated the systematic affinities of the specimens and concluded that the entire Parahio Formation was early or middle Cambrian in age. The revised age estimate makes the report of conodonts from these rocks curious. To assess this age disparity, we have employed two approaches. Firstly, the original material of Bhatt and Kumar was inspected. Of those illustrated specimens still surviving, none are definitively conodonts. Rather, the best specimens are apparently acrotretid brachiopods with a laterally compressed and highly conical pedicle valve. Secondly, the new fossil-bearing carbonate samples recovered from Parahio and Zanskar sections (including horizons sampled by Bhatt and Kumar (1980), were processed using acid dissolution. Of the processed material,

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Brachiopoda specimens were identified by Leonid Popov at the National Museum of Wales, reaffirming the assessment of original material by Hughes. In addition, recovered microfossils were imaged using scanning electron microscopy, thus allowing descriptions and taxonomic assessments of the microfossils co-occurrent with the trilobites that were used to establish the new biozonation. Several microfossil taxa were recovered, including representatives of the following groups: Chancelloriidea (genera *Chancelloria* and *Archiasterella* are both represented), Helcionelloida, Hyolitha, and hexactinellid sponge spicules. However, no conodont or paraconodont specimens were recovered. The new microfossil and Brachiopoda determinations support the middle Cambrian age estimate for these formations as proposed using the new trilobite biostratigraphy and refute the late Cambrian age suggested by earlier works. Additionally, abundant chancelloriid specimens of the genus *Archiasterella* have been found within one horizon from Zanskar, warranting further assessment of morphological variability within this form. This is the first study to describe and assess Chancelloriidea within the Cambrian of the Tethyan Himalaya, and these data, along with the trilobite type material, may be important for future biostratigraphic analysis of this poorly-sampled region.

Biography:

Mr. Ian R. Gilbert is a graduate student studying invertebrate paleontology at the University of California, Riverside (UCR) in Riverside, CA. Prior to his graduate studies, Mr. Gilbert received an Associate of Science degree in Math and Sciences (2010) from the Santa Barbara City College in San Barbara, CA and a Bachelor of Science in Geology (2012) from the UCR. While at UCR, Mr. Gilbert received various honors including the CNAS Dean's Fellow Summer Undergraduate Research Internship (2011), Undergraduate Research Grant (2011), Science Circle Student Award in Excellence (2012), George Lapin Award (2012), Award for Academic Excellence in Geology (2012) and the Dean's Distinguished Graduate Fellowship (2013).

Riverside, Inyo, Mono and San Bernardino Counties **(RIMS) Science and Engineering Fair**

Ms. Emily Hughes, a student at Riverside Poly High School, will present her RIMS Science and Engineering project at the May IGS meeting on Thursday, May 1st. She is involved in various school clubs including the Society of Animal Appreciators, Interact Club, Poetry Club, French Honors Society and the Photography Club.

Abstract

Gastropods are the most diverse clade in the modern ocean, and as a clade, they have survived the second largest extinction in the history of life on Earth: the End-Ordovician extinction. This project is an examination of what it is that allows gastropods to survive mass extinctions and become so diverse. I focused on two different species of gastropods, *Murchisonia* and *Clathospira*, who both lived in shallow carbonate lagoons with varying salinity and temperature. My goal was to see if either of the species survived, and if so, due to what factor, be it ecology, morphology, eating-habits, etc. I also compared the two species to a modern species called the Periwinkle snail, to see if they shared the same life mode with the fossilized species. I hypothesized that both species *Murchinsonia* and *Clathospira* would survive, because both were adapted for extreme environments. This was proved incorrect; however, through my research, because only *Murchinsonia* survived. But, the life mode of that species has many similarities with the life mode of modern periwinkles, showing that traits of surviving species are passed to future ones.

Upcoming Meetings/Events

Rock & Gem Shows—Various locations

Various rock and mineral shows will be throughout So. California. To find one near you, visit www.rockngem.com/showdates.asp

AEG—So. California Chapter Meeting



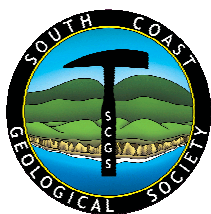
The meeting details for the next meeting for the AEG-Southern California Chapter is to be announced. For more info., visit the So. California Chapter at www.aegsc.org/calendar/.

AEG—Inland Empire Section



AEG—Inland Empire Section is offering a Short Course (topic to be determined) on **Saturday, May 31, 2014**. For more information, visit www.aegsc.org/chapters/inlandempire/index.php.

South Coast Geological Society Meeting



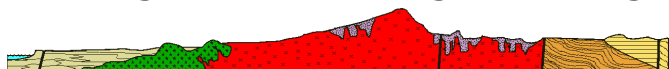
South Coast Geological Society generally holds their meetings on the first Monday of the month at the DoubleTree Club Hotel in Santa Ana, CA. For more info., visit them on Facebook and/or www.southcoastgeo.org.

Los Angeles Basin Geological Society



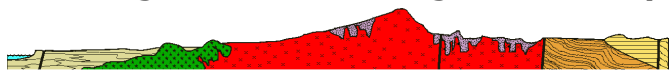
The LABGS will not have a meeting in April. Mr. Glenn Sharman will speak about "Zircon Indications for Offset of the San Andreas Fault" at the next meeting on **May 22, 2014** at The Grand at Willow Street Conference Center in Long Beach, CA. Visit their website for the future meetings (www.labgs.org).

San Diego Assoc. of Geologists Meeting



Mile Pallamary will be presenting a talk on "Historical Maps and SoCal Mapping Mysteries" on **Wednesday, May 21, 2014**. For more info, visit www.sandiegogeologists.org

San Diego Assoc. of Geologists Field Trip



SDAG will be having a field trip focused on "Traversing A Transform Boundary: Regional Tectonics, San Diego Through the Salton Trough" on **October 10-12, 2014**. For more info, visit www.sandiegogeologists.org

GRA 14th Biennial Symposium on Managed Aquifer Recharge

Groundwater Resources Association of California will be holding their 14th Biennial Symposium on Managed Aquifer Recharge on **July 31 and August 1, 2014** at the Doubletree Hotel in Orange, CA. For more info, visit www.grac.org/bsarc14.asp

IGS Meeting Schedule

June 4, 2014 (Wednesday)

Bob Reynolds, Retired

San Timoteo Canyon—Huge Bonanza and the Geologic Implications

July 8, 9, or 10, 2014 (TBD)

TBD

August 7, 2014 (Thursday)

Thomas Deane, Deane Consulting, Inc.

Effects of Debris Flow and Superposition of Seasonal Spring Flow on Multi-Year Variable Spring Base Flow Conditions at Ruby Springs, OMYA Inc.'s White Knob Mine, Lucerne, CA

IGS MEETING LOCATION:

LSA Associates, Inc.
1500 Iowa Ave, Suite 200
Riverside, CA 92507

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