

December 2015 News Notes

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Alumni Change Lives

Connor Gallagher is an undergraduate student working with Prof Audrey Sawyer. Here, he tells how Friends of Orton Hall helped further his studies.

Headwater streams in eastern Kentucky, a part of Appalachia, are frequently buried by mountaintop removal and valley-fill coal mining practices. At Guy Cove (KY), a stream restoration experiment was conducted in 2008 to test whether new headwater streams can successfully be reconstructed on top of valley fill. For my senior thesis, I am using heat as a tracer to measure stream-groundwater interactions along the newly constructed stream. Under the supervision of Dr. Audrey Sawyer, I deployed temperature sensors in the streambed and collected temperature data this past summer. I am using this data to estimate rates of stream water infiltration into the valley fill or groundwater exfiltration into the stream. The direction and rate of flow between the stream and aquifer is important for maintaining flow during dry periods and supporting a healthy stream ecosystem. I will be returning to Guy Cove in November to collect more data, which will allow me to determine whether exchange rates between the stream and aquifer vary over seasons. Funding from

Friends of Orton Hall allowed me to rent a truck to access my field sites, where terrain grades can surpass thirty percent. Funding will also cover replacement costs for equipment where local elk took an interest. Finally, Friends of Orton Hall will allow me to present my work at the North-Central GSA Meeting this coming May.



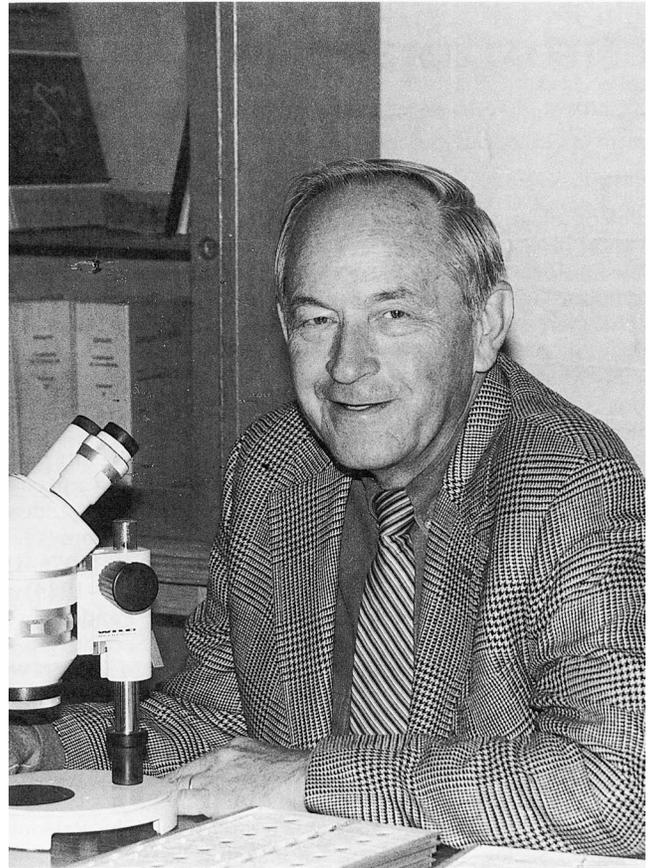
Remembering Walter C. Sweet

Written by Profs Emeritus Stig Bergstrom and Bill Ausich.

One of the internationally most widely known individuals in the School of Earth Sciences, Professor Emeritus Walter C. Sweet, passed away on December 4, 2015. He had suffered a heart attack a couple of weeks earlier and undergone a by-pass heart operation from which he never recovered.

Professor Sweet started his long career at OSU as an instructor in 1954, was promoted to Assistant Professor in 1957, became Associate Professor in 1961, and Professor in 1966. He retired and became an Emeritus Professor in 1988. In retirement he lived in Columbus but spent parts of each year in Tucson, Arizona. In 2014 he permanently moved to Tucson, where he spent the last portion of his life.

During his many years at OSU, Professor Sweet was a very successful educator who taught a wide variety of geology courses. He received the Distinguished Teaching Award twice (1971, 1982). He co-authored a textbook on Introductory Geology, which was published in two editions (1966, 1973) and used not only at OSU but also at several other universities. He also translated from German, and used, Pokorny's 'Grundzüge der geologischen Micropaläontologie' but this translation was never published. His courses were comprehensive and challenging and returning alumni have praised his courses as among the most important for their careers. He attracted numerous students and served as thesis advisor for approximately 40 students, several of whom, such as T. J. M. Schopf and Anita Epstein (Harris), later became internationally prominent paleontologists.



Largely through his efforts, the dormant Micropaleontology program at OSU became well-known internationally during the 1960s, and Orton Hall gained a reputation as a center for the study of microfossils, particularly conodonts. This program attracted not only excellent graduate students but also many post-docs, particularly from Europe (Italy (3), Austria (2), Poland (2), Sweden (6)).

Much of Prof. Sweet's early research was on Ordovician cephalopods. For instance, in his monograph on nautiloids from the Oslo region, Norway, he described more than 20 new species and several years later, he produced extensive chapters on cephalopods in volume R of the standard reference book 'Treatise on Invertebrate Paleontology'. However, a major part of his research from the late 1950s on dealt with conodonts and conodont biostratigraphy, initially in the Ordovician but later in most of the Paleozoic and Triassic. This work resulted in more than 125 publications that made him an internationally leading authority on virtually all aspects of conodonts. He strongly supported multielement taxonomy, that is, the classification of conodonts as whole animals rather than as taxa based on individual skeletal parts. His ideas were summarized in the book 'The Conodonta. Morphology, Taxonomy, Paleoecology, and Evolutionary History of a long-extinct Animal Phylum', which was published in the United Kingdom. This book has become an international classic that is still used world-wide as the best available overall summary of this widespread and important fossil group. Prof. Sweet was also a principal author of the revised conodont part of the 'Treatise on Invertebrate Paleontology'. Several aspects of Prof. Sweet's conodont work were very favorably covered in the 2013 book 'The Great Fossil Enigma.

Remembering Walter C. Sweet (Continued)

The Search for the Conodont Animal' by the British science historian Simon J. Knell. The wide appreciation of his paleontological work is shown also by the fact that international colleagues have named at least three fossil genera (Sweetodus, Sweetina, Sweetocristatus) and several new species (e.g. Cahabagnathus sweeti) for him. Much of his work in the Ordovician and Permian/Triassic was basically of biostratigraphic nature, and he was one of the pioneers in using graphic correlation. Unfortunately, most of the base data employed in his work using this technique remains unpublished, which makes it impossible to expand his investigations.

During his long research career, Prof. Sweet received several major awards, including the Pander Society Medal (1985), the highest award in conodont research, the Society of Sedimentary Geology's Moore Medal (1988) and the Paleontological Society's Medal (1994), the latter two awards being the two most prestigious ones in paleontology-soft rock geology in North America. Only one other person in the world has received these three awards.

Prof. Sweet was also quite active in professional service. For instance, he was Secretary (1976-1982) and later President (1983-1984) of the Paleontological Society and Chief Panderer (=President) of the Pander Society (1975-1985). He was also a Member or Corresponding Member for many years of the Ordovician, Permian, and Triassic Subcommissions of the International Commission of Stratigraphy.

Prof Sweet's broad knowledge, sharp and critical mind, and his ability to think 'outside the box' will be greatly missed by many paleontologists around the world.

Prof Grottoli's work featured on Discovery.com

Prof Andrea Grottoli was interviewed for an article on Discovery.com on December 2, entitled, "Warm El Nino Water Killing Pacific Corals" ([link](#)). From the article:

Hawaii's corals, too, have been hurt by El Nino's [unusually warm] waters, according to Andrea Grottoli, head of the division of water, climate and environment at Ohio State University. "This El Nino is causing bleaching throughout the Hawaiian Islands," Grottoli said in an interview. The 1997-98 El Nino killed 16 percent of corals worldwide, she said. "It's too early to know which corals will recover this time."



Photo: discovery.com

Alumnus Kelly Carol featured on OutsideOutline.com

Alumnus Kelly Carol was featured in outsideonline.com, along with some of his breathtaking photography. From the article:

Rocks tell stories, and so do stars, and it struck me that humans have been looking at the same landscape at Great Basin and the same sky for 13,000 years.

You can read more, and see some great photos, [here](#).



image: outsideonline.com

Prof Thompson's work featured on NSF.gov



images: NSF

Prof Lonnie Thompson's recent ice core drilling work in the Tibetan Plateau was recently featured on NSF.com's Beijing office. From the article:

“Guliya Ice Cap (GIC), in the western Kunlun Mountains, may be the only ice field outside the polar regions that has captured climate signals over the last glacial cycle.... In the fall of 2015, [Prof Thompson and colleagues] led a successful effort at the Guliya summit to drill three ice cores to bedrock. The team, which included scientists and specialists from six countries, camped at the summit for weeks, battling extreme cold and wind at 22,000 feet elevation, after shipping tons of equipment to the site.” More at nsf.com ([link](#)).

Brevium

Some of Dr. Grottoli's Principles of Oceanography students (EARTHSC 2206) participated in a bonus activity of creating oceanography themed mashups. You can see them all on the Courses section of her website at <http://u.osu.edu/grottoli.1/courses/>.