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Oldest Crayfish Fossils Discovered In Antarctica

by Cary Lee Hanes, NSF Public Affairs

Fossils discovered on an NSF-funded expedition in Antarctica last December show new evidence that freshwater crayfish evolved at least 65 million years earlier than previously thought. Researchers in the Shackleton Glacier area discovered crayfish burrows in 240-million-year-old deposits of the Triassic Period, and identified a fossil claw of the Late Carboniferous-Early Permian Age (285-million-years-old).

The newly found crayfish claw is the oldest known evidence of decapod crustaceans from freshwater deposits anywhere on earth. Crayfish are important components of freshwater ecosystems because they are large and abundant omnivores. Their presence in these very old deposits suggests that freshwater ecosystems resembling those of today developed much earlier than was thought. The breakage pattern on the claw, which appears to have been caused by a predator or scavenger, supports this theory by suggesting the presence of a community of species.

Scientists have long speculated that decapod crustaceans invaded freshwater stream and lake systems before the end of the Paleozoic Era, but had no direct evidence until now.

"This forces us to rethink how and where they evolved," said Dr. John Isbell of the University of Wisconsin-Milwaukee, who took part in the expedition with Dr. Molly Miller of Vanderbilt University. "We're pretty excited -- we're starting to believe that Antarctica was not a dead, barren world during the late Paleozoic age."

Researcher Medevaced to Punta Arenas

by JOC(AW) Jacqueline Kiel

A researcher was medevaced from Palmer Station on Monday, Nov. 11, when she suddenly became ill while on board the Polar Duke, according to Don Ferris, Antarctic Support Associates Senior Area Manager, at Palmer Station.

Fortunately, the Polar Duke was making a regular port call at Palmer Station. The woman, Alison Parker, a graduate student, visited the Palmer Station physician, Dr. Ralph S. Bovard, at the station medical clinic complaining of abdominal pain. Bovard's diagnosis was acute appendicitis.

Palmer Station staff considered various methods of transporting the patient to the nearest hospital, located at Punta Arenas, Chile, according to Ferris.

Since the British Antarctic Survey (BAS) at Rothera Base could provide air transportation, their assistance was requested.

At approximately 6:45 p.m., a BAS Twin Otter carried Parker to Rothera Base where she was put on board another Twin Otter. bound for Chile.

The patient arrived at Punta Arenas at 3:30 a.m., Nov. 12, and was then transported to Clinica De Magallanes where she underwent surgery later that day.

The surgery was successful and Parker was released from the hospital on Thursday, Nov. 14, Ferris said.

According to AGUNSA (the contract agent in Punta Arenas), Parker is doing fine. As of Nov. 16, she was still in Punta Arenas recuperating and awaiting the return of the Polar Duke.

Viruses bad for Computer's Health

by JOC(AW) Jacqueline Kiel

Just as viruses invade the human body and create havoc, as is evident by the McMurdo "crud," a computer virus will create the same havoc in a computer, and sometimes much worse.

Every year new viruses appear and there's a resurrection of old viruses, according to Jim Johnson, assistant manager for Data Systems, a division of Information Systems.

"The viruses generally come down to us via the internet, from people downloading certain program files," Johnson said, "but it also comes from the university environment that the grantees come from.

The newest virus to invade McMurdo is "Wazzu." The problem with this virus is that it is a macro virus that affects Microsoft Word documents. Additionally, it can be sent as e-mail attachments.

Wazzu was discovered at Crary Science and Engineering Center and was passed around because it was on a phone list. "Anybody who received that document and called it up was infected," Johnson said.

Even saving an attachment infects documents, Johnson said. Additionally, any file that is listed under the "File" portion of the MS Word program, such as any files that have recently been opened, also become infected. It scrambles words in documents.

Johnson is concerned because the problem seems to be on the increase. "I lost two man-weeks so far this season just dealing with virus corruption," he said. "I may have to hire a guy full- time just to deal with viruses if it gets any worse, and this macro virus has got the potential to be worse," he added.

Other viruses found at McMurdo Station include "Ripper," "Monkey," Form-A and Form-B, some of which are boot sector viruses and can be far more destructive.

One reason for seasonal virus outbreaks is use of old floppy disks. Usually, a new disk, fresh out of the box is fine. Very few cases of new disks with viruses have occurred. The problem arises when people need a disk and reach for a used one. Many of these disks contain the old, previously eradicated viruses.

A simple solution is to run the disk through a detection and cleansing program before using it. Using the Virus scan on the LAN will work. Simply choose selection number four from the main menu and follow directions.

It is also possible to complete a scan using G:\Common\pctech\antivirs\mcafee. This is the most up-to-date virus

scan/cleaner available at McMurdo. If it is used every time, much of the problem can be eliminated.

"The word is don't put any floppys in your machine without scanning them, especially if you don't know where its been, Johnson said. "If you think you've got a virus, call the PC techs, call the Help desk and get the work order in to have the techs come over to kill it for you," he added.

Data Systems personnel will drop everything to respond to a virus. "It's a very high priority for us," Johnson said.

SCIENCE PROJECT UPDATE

by JOC(AW) Jacqueline Kiel

A Study of Very High Latitude Geomagnetic Phenomena (S- 105)

The study is a joint U.S.-Russian project which will investigate the structure of electric polar-cap currents produced because of the interaction between the solar wind and Earth's magnetic field.

Dr. Vladimir O. Papitashvili, the project's principle investigator, and field-team member Vladimir Solyanik will be using magnetometers to observe the integrated effect of theses currents. Two unattended magnetometers are located between Mirney and Vostok Stations, both Russian research stations. Another two attended magnetometers are located at each station.

Mount Erebus Volcano Observatory (S-081)

Mount Erebus is the most active volcano in Antarctica. The Mount Erebus Volcano Observatory is responsible for conducting year- round observations of the volcano. Eight seismic stations located on Mount Erebus and one at McMurdo Station provide year- round observation capability.

Plans for this season include maintenance and component replacement for the seismic stations, deployment of four portable temporary stations around the summit and flanks of the volcano, and installation of a portable broadband seismometer at the Lower Erebus Hut. Additionally, Dr. Philip Kyle and his field team will obtain samples of the volcano's plume and measure gas emissions.

AROUND USAP

by JOC(AW) Jacqueline Kiel

McMurdo Station - On Wednesday a science team was dropped off at Griffin Nunatak, located 240 miles northwest of McMurdo Station. The team will spend two months in the field looking for meteorites in the dry valleys, Meteorite Hills and Griffin Nunatak.

For the last two weeks Fleet Operations; Safety, Environment and Health; and Facility Maintenance Center personnel have been working together to tear down the last remaining buildings that were once a permanent part of William's Field. These buildings are being dug out of the ice and brought back to McMurdo Station, for demolition. The materials will then be shipped back to the United States.

Fleet Operations personnel have been resurfacing the ice pier. Dirt is spread onto the pier to keep the ice from melting and provide a non-slippery surface for driving.

The New York Air National Guard arrived last Sunday with two LC- 130 ski-equipped "Hercules" aircraft. They will conduct operations augmenting Antarctic Development Squadron SIX for approximately four weeks.

South Pole - Approximately 20,000 gallons of fuel was delivered to the South Pole last week. The focus for this week is to continue fueling operations. The intent is to get as much of the needed fuel as possible to the Pole

before the ice runway at McMurdo Station closes. William's Field skiway requires lighter aircraft, so fuel loads are reduced.

R/V Nathaniel B. Palmer - The ship is continuing its cruise in support of the U.S. Joint Global Ocean Flux Study. The ship is currently in the process of deploying moorings.

These moorings hold sediment traps to collect samples at various depths, and current meters to indicate velocity and direction of the water flow.

Moorings are kept in place with railroad wheels for weight and floats to keep the cable extended and the traps in place.

Some of the research is looking at the production of particulate material and how it may or may not be deposited.

R/V Polar Duke - The ship headed south into the Powell Basin area of the Western Weddell Sea where researchers began deploying acoustic moorings. Instruments on the moorings will monitor animal abundances, distributions and movements in the upper 100 meters of water. Researchers have already successfully measured the daily vertical migration of animals in the water column.

Christchurch - Naval Antarctic Support Unit (NASU) sponsored an auction which benefitted "Toys for Tots" on Friday. NASU regularly raises funds for the charity. Items auctioned off included the right to completely destroy an old car with a sledgehammer, an Italian dinner, a ride on a Harley Davidson and home cooked lumpia.

Hunting the sounds of Antarctica

by Samantha Tisdal

Douglas Quin preys upon the sounds of nature. Armed with state-of-the-art recording equipment, he has stalked elephants through the African savannah, eavesdropped on walrus choruses near Alaska's craggy shores, and born witness to the riotous birdsong of the Amazon.

"My specialty is sitting long enough to get the sound," Quin explained. "It takes a heightened sensory awareness, a delicacy of approach. I try not to alarm or scare an animal; the key is to put yourself in a position of receivership."

Now, thanks to a grant from the NSF Artist and Writers Program, Quin is discovering the unique voice of Antarctica. The veteran composer/bioacoustician/field recorder admits surprise and awe at the richness of that voice.

Most often, Quin explained, his work takes him to the tropics, where a vast number of different species are all competing for niches of "talking space," and have thus worked out a complex inter-species tapestry of rhythm and sound.

"Antarctica's harsh environment lacks such diversity," Quin said, "but within each species are mind-boggling numbers. Since there is no cross-species competition for sound space, each species is free to inhabit a huge range of transmission frequencies."

A recent recording of Weddell seals proves the point. The recording, which Quin made by simply lowering a hydrophone below the sea ice at Big Razorback Island's Weddell colony, reveals an astounding array of vocalizations -- otherworldly howls, bird-like twitterings and whistles, rhythmic guttural gulps, electronic rippling cascades, as well as the almost-human gurgles and cries of seal pups on the ice.

"I always go into these experiences with an open mind as to what sorts of sounds I'll discover, but these guys just blew me away!" Quin exclaimed.

He timed his Antarctic trip to coincide with the Weddells' pupping and mating seasons in October and November,

because this is when the animals are at their most vocal. "In just a few more weeks, everything falls off sharply," he explained. "It's such a short, intense period of vocalization."

Next on Quin's list of "acoustic prey" are the songs of whales and penguins. He is also interested in mechanical phenomenon, such as rockslides, groaning glaciers, calving icebergs, and the tinkling of ice crystals at the lakes in the Dry Valleys. He even has plans to construct a "wind harp" designed to vibrate in a symphony of frequencies during Antarctic gales.

Quin is the first "sound" artist to be funded by the NSF Artist and Writers grant. This grant was conceived as a way to utilize the artist's voice to help portray Antarctica to the public.

But ironically, aside from a brief slot on National Public Radio's "All Things Considered" and a sound-scape for an exhibit about the Ice Age at a museum in Connecticut, Quin's work will not reach very many Americans.

"Our culture is very visually oriented," Quin lamented. "Commerce has become the arbiter of our values, and the media of sound is not highly valued unless there is also the guarantee that it will be commercially successful."

Most of his Antarctic recordings are destined for European audiences. Public radio stations in France and Germany have scheduled lengthy broadcasts of Quin's Antarctic work to air next year.

But anyone with access to the Internet can at least get a few tantalizing soundbites of his work by visiting his website at <http://www.wildsanctuary.com>.

Your Mail Will Arrive

by Brian Stone, Antarctic Terminal Operations

Now that the C-141 flights are done for the season, the competition for cargo space on aircraft traveling between Christchurch and McMurdo starts to heat up.

All southbound cargo is prioritized using a system established by the National Science Foundation (NSF). Letter mail has the highest priority for southbound shipment, and it will be shipped south as soon as it arrives in Christchurch.

For South Pole, the same priority applies to letter mail once it arrives in McMurdo -- if letter mail is available it will receive the highest priority for shipment.

The following is the actual priority list:

1. Letter Mail
2. CASREP/EFRT Items (equipment failures)
3. Environmental or Time sensitive cargo
4. Science Cargo
5. Freshies
6. VXE-6/NSFA/ASA/AntNZ (in no particular order)
7. Package Mail.

Package mail has the lowest priority in the USAP, and it will be transported south in accordance with the priorities established by the NSF.

One improvement this year is that package mail is being placed into 50 cube containers to allow it to be palletized with other cargo. Previously mail was moved in USAF pallet increments, which frequently were "bumped" as other higher priority cargo came through the system. Having the mail in smaller containers will hopefully allow it to be more continuously worked into the southbound airlift.

During the holiday season, the NSF has provided assurances that the necessary airlift will be provided to move Christmas mail south. NSF will direct the addition of a flight to the schedule prior to the holiday if needed to clear the backlog of packages.

Please understand, the package mail WILL come through. It will just take longer from now on. Also, please refrain from calling or emailing the terminal operations or mailroom personnel in either McMurdo or Christchurch with complaints. They don't set the priorities -- they just follow them.

Dining Facility Readies Big Feast

by Yvonne Price

As Thanksgiving approaches, the McMurdo dining facility staff prepares for one of the town's largest meals.

It takes a lot of food to make Thanksgiving meal for a population of nearly one thousand people. Food Service Manager Tony Middlebrooks says this year the kitchen will cook 110 turkeys, 250 pounds of potatoes, 500 pounds of dressing and 50 gallons of soup. They will also serve non-traditional Thanksgiving dishes including a vegetarian entree and Antarctic cod fish.

Middlebrooks adds that preparations for a meal of this kind begin days ahead of time. This year, Thanksgiving dinner is scheduled for Saturday, but baking begins as early as Monday.

"Prepping food will start on Wednesday - things such as thawing out the birds and preparing the garnishes," Middlebrooks said. "But most of the things will be prepared the night before."

Preparing all this food also involves a lot of extra work. Approximately 40 volunteers help with preparations the day before, and the day of, the meal. Volunteers come in for an average of three to four hours.

Lead Dining Attendant Suzanne Navarro says that the dining facility greatly depends on the volunteers.

Navarro adds that she doesn't mind working on Thanksgiving. "It's a lot of fun. One of the main reasons why we have so much fun is the volunteers - they make it really nice for us and spirits are really high."

USAP PERSON OF THE WEEK

by JO2 Trevor Poulsen

Berg Field Center (BFC) Field Coordinator Aaron Brillhart says he needs a little more time to decide where to travel next. So, he's going to spend a year in McMurdo before beginning his next adventure.

Brillhart is one of three BFC field coordinators based out of Building 73. Field coordinators ensure the proper delivery and repair of equipment and supplies for field camps.

"We make sure all the little things happen," he said. "We make sure everybody's parkas get fixed, get fuel pumps working, get the Nansen sleds lashed, etc."

Brillhart works with any type of equipment that might be needed at a field camp: mountaineering gear, skis, sleeping bags, tools, sleds, and first aid supplies.

"I enjoy the variety of the job," Brillhart said. "The close contact with the science groups - I have a biology degree - and I enjoy making things work, to function in extreme climates."

Brillhart will continue to work at BFC through next winter when he hopes to have decided where to go next.

Originally from York, Penn., Brillhart has traveled extensively through Europe. He spent a year in Finland as an exchange student and studied Russian in Siberia under a grant program.

An avid outdoorsman, Brillhart has hiked across the Pyrennes of Southern France and climbed the Austrian Alps. He also learned to speak German while working as a baker in Switzerland.

Brillhart says his next adventure will be a cross-country ski trip along the Lappland coast of northern Norway.

"I'm trying to keep my plans to a minimum because I know I'll change them a lot," he adds. "I want to enjoy my time and do a good job here."

NAVY NEWS

DOD Orders Services To Review Sexual Harassment Training

by Master Sgt. Stephen Barrett, American Forces Press Service

WASHINGTON (NWSA) -- Defense Secretary William Perry ordered the Navy and Air Force to examine their service training programs for problems dealing in sexual harassment.

The order came Nov. 12 to Navy Secretary John H. Dalton and Air Force Secretary Sheila F. Widnall as the Army continues its investigation of sexual assaults at Aberdeen Proving Ground, Md.

Pentagon spokesman Ken Bacon told the Baltimore Sun that Perry ordered the training reviews to make sure there is "adequate screening of complaints, and there are adequate efforts to establish, to find out, if there are similar problems" in the Navy and the Air Force.

"We want to make sure the other services take precautionary looks at this," said Bacon. "We don't have any evidence that there are comparable problems in the other services."
