

Ancient reef found outback

“Could be the earliest examples of primitive animal life discovered”

In what is a major international discovery, three University of Melbourne scientists have located the upturned remnants of what was once a giant underwater reef – with an escarpment ten times higher than

the Great Barrier Reef – in the Northern Flinders Ranges in outback South Australia.

The reef is about 650 million years old and is the only known reef complex of this age anywhere in the world.

The next closest aged series of reefs found to-date are around 800 million years old and located in Arctic Canada.

And while they are yet to confirm it scientifically, the scientists – Jonathan Giddings, Associate Professor Malcolm Wallace and Estee Woon from the School of Earth Sciences at the University of Melbourne – believe that peculiar fossils of possible multi-cellular organisms found in the reef, could be the earliest examples of primitive animal life discovered to-date.



Aiding nutrition

Researchers from Monash have designed a nano-sized “trojan horse” particle to ensure healing antioxidants can be better absorbed by the human body.

Dr Ken Ng and Dr Ian Larson from the University’s Faculty of Pharmacy and Pharmaceutical Sciences, have designed a nanoparticle, one thousandth the thickness of

a human hair, that protects antioxidants from being destroyed in the gut and ensures a better chance of them being absorbed in the digestive tract.

Antioxidants are known to neutralise the harmful effect of free radicals and other reactive chemical species that are constantly generated by our body and are thought to promote better health.



Obesity link to killer carbs

A Monash scientist has discovered key appetite control cells in the human brain degenerate over time, causing increased hunger and potentially weight-gain as we age.

The reduction in the appetite-suppressing cells could be one explanation for the complex condition of adult-onset obesity.

Dr Zane Andrews, a neuroendocrinologist with Monash University’s

Department of Physiology, has found that appetite-suppressing cells are attacked by free radicals after eating, with the degeneration more significant following meals rich in carbohydrates and sugars.

“The more carbs and sugars you eat, the more your appetite-control cells are damaged, and potentially you consume more,” Andrews said.

Predicting premature birth

The University of Melbourne, the University of Newcastle and Symbion Pathology are combining expertise in medical research, engineering and pathology to develop a computer program to predict women at risk of a premature birth.

About 17,000 pre-term births occur in Australia each year. Premature birth is responsible for 70 per cent of new born baby deaths and 50 per cent of cerebral palsy cases.

According to Professor Roger Smith from the University of Newcastle, identifying patterns in hormone levels could be the key to determining high risk pregnancies.



Measuring the Universe

Using a Nobel Prize winning laser technique, an international team of researchers has vastly improved the precision of astronomy – it will even allow them to measure a star moving as slowly as a tortoise.

In an article published in *Science*, the researchers demonstrated how a ‘laser frequency comb’ could be used to calibrate an astronomical telescope. This will enable astronomers to measure the spectral features

of distant stars and galaxies with extreme precision.

Swinburne’s Dr Michael Murphy, also on the team, likens the frequency comb’s teeth to the markers on a metre-long ruler.

“Previously, astronomers would have had a marker about every ten centimeters. And we didn’t even know the exact position of those markers, so our measurements were a bit uncertain.”