Taung Heritage Site- Second Year Report to SAHRA (2010-2012)

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Introduction

The type-site for *Australopithecus africanus*, Taung is one of the oldest active palaeontology sites in South Africa. Although the only hominin to ever come from Taung, the Taung Child, was discovered in 1924, years of subsequent work have yielded numerous other faunal specimens. To date the mode of accumulation is still highly contested, as is the provenience of the Taung Child itself. The fact that the demarcated world heritage site has 17 distinct fossil deposits suggests that there is a wide array of research that can and should be conducted at the site. Almost nothing is known about the 15 'other' fossil deposits aside from very small samples taken in the late 80's and early 90's. There has been little effort to determine dates, geology, mode of accumulation; nothing of significance for the 'other' 15 deposits has been accomplished to date.

The political situation at Taung is tenuous at best. During the 2010 field season intimidation and threats from the local population were routine, as was the continuous demands to attend meetings. Leaving the site with the geological samples was hindered. In addition, when I visited the site in November of 2011 I found the roads to be closed, and in particular I found the road around the two pinnacles has had high curbs erected along the road between the road and the sites themselves, thus hindering access to the site for future excavations. This will become an issue this year when we intend to resume fieldwork and will need to get heavy equipment onto the site.

Fieldwork

In 2010 and small international team spent a week taking samples from the Dart and HirdličkaPinnacles for dating, palaeomagnetic studies, and isotope work. Three papers from the 2010 fieldwork are currently under review. In August of 2012 a two week field season is scheduled to conduct more work at the Pinnacles, which will include the drilling of four (4) cores, doing geological mapping and using ground penetrating radar to get an idea of potential fossil deposits. In addition the 2012 field season will extend to Equus Cave. We will run an exploratory excavation at Equus in

order to determine the geological context of the site as well as obtain material that will aid in dating the site.

Summary of Research

An initial result from the 2010 field season indicates that some of the interpretations with regard to the fossil deposits are erroneous. While the 'red breccia' does indeed appear to be a cave infill formed during the formation of the tufa, our preliminary results indicate that the 'pink breccia', the breccia most associated with the Taung child, is actually an older palaeosol. The suspected palaeosol was laid down prior to the tufa forming thus giving a completely different interpretation of the site and in particular the site in relation to the Taung child. Palaeomagnetic reversals between the red and pink breccias support the new hypothesis.

Future Research

As mentioned above, August of 2012 will see another field season at Taung to finish the geological work at both the Dart and Hirdlička Pinnacles, plus possibly put in a test pit if the geological work warrants it. Also at this time we will expand our work to a test excavation at Equus Cave to determine the stratigraphic context of the site and hopefully obtain materials to accurately date the site. Beyond 2012 the potential and hope is to systematically go through the remaining fossil deposits in order to obtain dates and context and from that determine long term goals. The problem is funding, to date the 2010 and 2012 field seasons have been funded via National Geographic grants obtained by my collaborator at Birkbeck College. Attempts to raise money through the NSF have met with rejection after rejection. In theory, the combined sites could give one of the widest ranges of dates found within the expanded Cradle of Humankind. Just getting dates and running isotopic studies we could get a holistic picture of the palaeoclimate and palaeoenvironment along the fringe of the Kalahari going back to 2-3 millions years.

Collaborators

Collaborators to date have included:

*Professor Andy I.R. Herries, La Trobe University, Victoria, Australia

*Dr. Philip Hopley, Birkbeck College, University College London, U.K.

*Dr. Colin Menter, University of Johannesburg, South Africa

Professor Francis Thackeray, University of the Witwatersrand, South Africa

Professor Lee Berger, University of the Witwatersrand, South Africa

* Involved in all field seasons, including the upcoming 2012 season.

Student Training

The 2010 season included three students from the University of the Witwatersrand, two MSc students in Palaeontology and one PhD student in Archaeology.

The 2012 season will include an MSc student in palaeontology as well as a PhD student in Archaeology from WITS. In addition there will be two MSc students in palaeo-anthropology plus one PhD student in geology from University College London as well as an MSc student in archaeology from La Trobe University in Australia.