



## A graveyard of titans

**Gerhard Maier. 2003. *African Dinosaurs Unearthed: The Tendaguru Expeditions*. Indiana University Press, Bloomington and Indianapolis, USA. 380 pages (hardcover). EUR 43, USD 49.95.**

Most paleontologists can appreciate the fact that public fascination with dinosaurs brings needed visibility to their discipline. Far fewer, however, have cause to follow—let alone read—the rapidly proliferating number of “specialty” books aimed at one of a dwindling number of unoccupied niches in the existing literature on dinosaurs. Though it does contain much for the dinosaur enthusiast, this is not such a specialty book—which is why I recommend it as a “must read” for anyone interested in the history of paleontology and of science in general.

In *African Dinosaurs Unearthed*, Maier chronicles the discovery, excavation, exhibition, and study of dinosaurs from and around Tendaguru in what is now Tanzania, east Africa. Following discovery of bone at Tendaguru in 1906, teams from the Museum für Naturkunde, Berlin (1907–1913), and the British Museum (Natural History), London (1924–1931) launched a series of collecting expeditions that remain unequalled in scope and ambition. Led by the vision and influence of geologist Wilhelm von Branca, the German expeditions were particularly successful, in large part because the project was taken up as a matter of national ambition (Germany was then a young nation, having been unified by von Bismarck less than 40 years earlier) and enjoyed the benevolence of many wealthy patrons. Eventually, nearly 250 tons of bones, representing an entirely new dinosaur fauna that remains the best understood assemblage from all of former Gondwana, was shipped to Berlin.

The one or two European field operatives sent to direct each expedition faced logistic and other challenges that are almost unfathomable today. The colossal scale of operations called for employment and supervision of up to 500 local men, and field “camp” often swelled to the size of a large village or small town, as workers were joined by their families. At the same time, geological investigations and further prospecting needed to be undertaken, food procured, colonial and local authorities dealt with, specimens stored, documented, and shipped, and so forth. For practical reasons, most specimens (many of which ranged to 2 m or more in length) had to be disassembled in pieces and wrapped in bamboo corsets; all then were hand-transported by armies of bearers to the coast, a five-day journey by foot. Expeditions also had to contend with famine, drought, monsoonal rainfall, withering heat, lions, lack of rock exposures, and a host of diseases, infections, and other serious medical problems. (British expedition leader William Cutler died while in the field in 1925.)

Except for a few contributions that are mainly biographic in nature (e.g., Rainger 1991; Foster 1994; Davidson 1997), historical accounts of paleontology tend to appear in works targeted at and written for popular audiences. This is emphatically not the case for *African Dinosaurs Unearthed*, in which Maier’s scholarly approach is that of an historian, and arguably sets a new standard for a book of this genre. Specialists will find the book to be a rich source of documentation on the field occurrence, association, and restoration of many of the more important specimens and mounted skeletons from Tendaguru, such as the awe-inspiring *Brachiosaurus* at the Museum für Naturkunde. A number of

prominent scientists—or those who would later rise to prominence—participated in the Tendaguru projects, among them Eberhard Fraas, Werner Janensch, Edwin Hennig, Hans Reck, Louis Leakey, and Rex Parrington. Of more general interest, though, is the uniquely long, deep entwining of Tendaguru dinosaurs with 20<sup>th</sup> century geopolitics. Field investigations took place during the colonial period, and their history provides insight into European–native interactions at that time. Within the paleontological realm, the Tendaguru projects were uniquely and dramatically affected by the two world wars. During the first, German operations were abruptly terminated (Hans Reck, in the field at the onset of hostilities, was captured and imprisoned for two years), a large number of fossils lost, and colonial rule was handed over to England—thereby enabling the British Museum to exploit Tendaguru’s fossil beds in following years. With institutional involvement on both sides of the English Channel by the 1930s, ensuing calamity during WWII was a foregone conclusion. The British Museum (Natural History) suffered several direct hits during the Battle of Britain. Top marks for enthusiasm and dedication in persecution of non-military targets, however, go to Allied (particularly American) forces, who managed to hit not only Berlin’s Museum für Naturkunde, but also damaged or destroyed institutions housing Tendaguru fossils in Württemberg, Hamburg, Braunschweig, München, and Göttingen. Rebuilding took years, and continuity in German research programs was severely curtailed by postwar division of the country and the Cold War, which culminated in construction of the Berlin Wall. Happily, that is not the end of the story. Renewed interest has resulted in a number of recent developments. Among these is Tendaguru 2000, a multidisciplinary research program coordinated at Museum für Naturkunde by Wolf-Dieter Heinrich, and aimed at clarifying issues in stratigraphy, geological age, and paleoecology of the Tendaguru beds.

Maier closes with a précis of some of the contributions and major issues addressed by the results of the Tendaguru expeditions. This chapter includes informative, up-to-date summaries of tectonic context, stratigraphy, sedimentation, and depositional environments; and an extensive account of the vertebrate fauna. Center stage here, of course, goes to Dinosauria, for which Maier gives useful accounts of taphonomy, biogeography, and paleobiology, covering such topics as growth rates, body mass, brain size, body posture and locomotion, physiology, and foraging behavior. As one who knows little about dinosaurs but is often called upon to comment on them, I found this section to be very useful. The entire book is well-written, insightful, and a pleasure to read. I recommend it as a fine addition to the paleontologist’s bookshelf and I predict that, like other good books, it will not stay on that shelf for long.

### References

- Davidson, J.P. 1997. *The Bone Sharp: The Life of Edward Drinker Cope*. 237 pp. The Academy of Natural Sciences of Philadelphia, Philadelphia.
- Foster, M. 1994. *Strange Genius: The Life of Ferdinand Vandever Hayden*. 443 pp. Roberts Rinehard Publishers, Niwot, Colorado.
- Rainger, R. 1991. *An Agenda for Antiquity: Henry Fairfield Osborn and Vertebrate Paleontology at the American Museum of Natural History, 1890–1935*. 360 pp. University of Alabama Press, Tuscaloosa.

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