Foreword

The great rifts of Africa are huge pull-apart or tensional zones whose numerous normal faults often drop their central parts thousands of meters below their margins. The Eastern Rift forms a natural hydraulic catchment almost everywhere it is exposed terrestrially. This dynamic system of horsts, grabens, accommodation faults, and uneven land surfaces complexly overlays the rift's axis. Shallow and ephemeral lakes form in the broken terrain, and rivers fill the lakes with sediment. Continued tectonic activity exposes these sediments and their contents to erosion—and to paleoanthropological research.

With nutrient-rich lakes, stream margins, gallery forests, and grassy sumplands, these geological systems provided ecological circumstances attractive to early hominids. Here the forerunners of humans lived and died. Some were entombed in sediments that possessed the right chemical array to fossilize their bones. The Middle Awash study area in the Afar Depression of eastern Ethiopia is a place where conditions were especially conducive to these processes.

Over the last 25 years the Middle Awash study area has proven to be one of the richest fossil areas in eastern Africa. It comprises the longest single record of human evolution on earth, with hominid fossils ranging in age from nearly six million years to around fifty thousand years. Middle Awash sediments regularly interred mammalian remains and archaeological traces, and subsequent erosion has exposed scores of vantages into the deep past. Through these portals we see our ancestors across geological time, from small-brained, ape-like *Ardipithecus*, through the development of tool use, to the first of our species, *Homo sapiens*.

I have had the good fortune of working in the Middle Awash on several occasions. In the months I have spent there, I joined and observed a large group of staff, students, and researchers working under extreme conditions. I never once heard a complaint. Local Afar pastoralists and world-renowned scientists worked side-by-side, digging wells, gathering firewood, cutting roads, surveying, excavating, sieving, and performing the countless other tasks that are required to bring fossils from where they occur naturally to a state that allows their presentation in volumes like this one.

One of my fondest memories is of the late Desmond Clark. By the early 1990s, I had known and admired him for over 30 years. Work was intensifying at Bouri, and

Desmond—then in his late seventies—with dimming eyesight but a brightly shimmering passion for paleoanthropology—loaded his gear into the vehicle early in the morning. He and his crew unloaded at a Daka archaeology site, sent the car on its way, put up a large canvas tarpaulin over the excavation, and commenced working. I was dropped nearby, and began surveying Bouri sediments, making interpretations, and looking for good volcanic samples. In so doing, I came across a site with numerous hippo fossils and five basalt hand axes.

The nearest basalt flow was over two kilometers away, and the hominids that made them, Daka Member hominids, had transported the raw tool material over this distance to the site. When I went to tell Desmond of this, I suggested that we have a look when the landcruiser returned. He objected—he couldn't wait to see the site. So we walked the sun-baked kilometer from his excavation to the handaxes I had found, excitedly discussing the potential vindication for his hypothesis that Acheulean tools were occasionally made at the site of butchery.

"This is proof," he said upon arrival. I asked, "Do you think they killed the hippo or were they exploiting an already-dead carcass?" He responded quickly, "Oh, I think they killed it." Clearly he had thought about it before and did not perceive *Homo erectus* as a stupid brute. Later, an excellent Ar/Ar date was derived from a tuff overlying the site. It was close to one million years old. Within 500 meters of this fossilized carcass were several other such localities variously preserving associations of fossils, Acheulean tools, and debitage, all within chronologically-controlled contexts.

Exploration of the human past at Bouri and other Middle Awash locales will continue for centuries to come. The initial archaeological background of the Daka Member discoveries has already been presented by Jean de Heinzelin, Desmond Clark, and others (de Heinzelin et al. 2000a). The pages that follow in the current volume represent the second major published component of Daka-related research. They document the paleontology, revise the stratigraphy, characterize the paleoenvironment, and present Daka *Homo erectus* fossils in the comprehensive manner that Desmond anticipated.

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