Chapter 1

The Past and Present of Human Origins in Southern Asia and Australia

Robin Dennell and Martin Porr

Introduction

Debates about modern human origins remain among the most controversial in the fields of archaeology and anthropology and have generated both specialist literature and a high level of public interest. The debate not only addresses a topic relevant to each individual human being but also deals with possibly the greatest intellectual challenge altogether, trying to understand what makes us human and how humans became what they are today. Over the past decades, the scientific examination of these questions has developed into a remarkable interdisciplinary endeavour involving several fields, such as developmental psychology, socio-cultural anthropology, palaeoanthropology, molecular biology and palaeolithic archaeology – to mention just a few. Thorough discussion of the integration of these types of evidence with their respective strengths and weaknesses is beyond the scope of this volume. While information from human fossil remains as well as ancient and recent genetic material continues to have a large impact on the reconstruction of the history of *Homo sapiens*, this volume – edited by two palaeolithic archaeologists – concentrates on the role of archaeological evidence during the Upper Pleistocene (ca. 125–10 ka) in the vast geographical region that lies east of Africa. As with the editors, most of the contributors are palaeolithic archaeologists, and the volume is aimed primarily at the palaeolithic community. Two chapters have been included that provide links to two disciplines that are deeply involved in researching modern human origins: one by Oppenheimer (Chapter 18) on the genetic evidence from living populations, and one by Dennell (Chapter 4) that summarises the human skeletal evidence between Arabia and Australia from 125 to 30 ka. Given the inevitable constraints of an edited volume, we have had to choose between coherence and diversity: whether to include several chapters from one discipline or a few papers from many. In order to produce a coherent volume, we opted for the former.

Large parts of discussions about modern human origins and how they might be detectable through material culture are framed in rhetorics emphasising centres of origins and subsequent dispersals. The reasons for this are complex and have as much to do with the nature of the evidence as with the politics, intellectual history and foundation of Palaeolithic archaeology and palaeoanthropology (see, e.g., Gamble & Gittins 2004; Landau 1993). The past hundred years

have seen the supposed centre of modern human origins shifting from Europe to Asia and, most recently, to Africa (Dennell 2001 and Chapter 2, this volume). During this time, an increasing emphasis on cognitive abilities that are detectable through either changes in the sophistication of material culture or the presence of symbolism has occurred, which leads to a conceptual decoupling of the supposed development of anatomical and behavioural modern features in human evolution. Most authors probably support a view that both developments originated in Africa, as seen by recent evidence for artistic behaviours at Blombos Cave in South Africa (Henshilwood et al. 2011) and the earliest anatomically modern humans from Herto and Omo Kibish, Ethiopia (White et al. 2003; McDougall et al. 2005). These discoveries are clearly important pieces of evidence for understanding the global history of *H. sapiens*, but it needs to be stressed that it is far from clear how these finds are related to the cognitive, anatomical and behavioural foundations of all past and present human beings – if such shared foundations indeed exist. Consequently, all questions dealing with so-called modern human origins also relate to the conceptual treatment of the causes and character of human variability, in both morphology and behaviour. These issues naturally become more relevant if more evidence of greater spatio-temporal depth and extent is included.

Issues and Challenges East of Africa

This collection of papers attempts to redress an imbalance in discussions about the early history of our species outside Africa by focusing on the southern rim of Asia, from the Arabian Peninsula through India to Southeast Asia and then onwards to the Australian landmass that includes New Guinea and Tasmania. As most readers are aware, there is a mountain of literature in journals, research monographs and popular accounts of the evidence from the Levant, which contains the earliest evidence yet found of our species outside Africa as well as evidence of Neanderthals, and an even bigger mountain of literature from Europe, where *H. sapiens* displaced or replaced Neanderthals between 30 and 40 ka. As this was accompanied by the replacement of Middle Palaeolithic, Mousterian industries of the Neanderthals by Upper Palaeolithic ones marked by blade assemblages and shaped tools of bone, antler and ivory, great emphasis has been placed on the significance of this Upper Palaeolithic revolution (see, e.g., Mellars & Stringer 1989).

While the evidence from the Levant and Europe understandably attracts so much attention, it inevitably detracts from the intrinsic interest and significance of other less well-researched regions. Many of these lie across the southern rim of Asia, between Arabia and Australia. As an example, the Arabian Peninsula is as large as Western Europe and lies immediately opposite north-east Africa across the Red Sea. Although it is an obvious dispersal route to areas further east, it has no Pleistocene human skeletal data, and only the barest outlines of a dated Palaeolithic sequence. Groucutt and Petraglia summarise what is currently known in their contribution and show why Arabia should be an essential component of the story of our species outside Africa. Given its size, it should have a complex Palaeolithic record in its own right, and not just one showing the footprints of those who crossed it from Africa. Hopefully we shall soon know much more from their current, ongoing research. India is another region that should have far greater prominence in human evolutionary studies: it is larger and more diverse than the European Union but is treated as little more than a corridor between the Levant and Australia. Blinkhorn and Petraglia discuss various theories over when and how *H. sapiens* first appeared in South Asia, and highlight two major recent discoveries. The first is that the stone tools before the Toba eruption of 74 ka may be similar to later ones that were probably made by *H. sapiens,* which raises the possibility that it was present before 74 ka, long before the common estimated date of arrival (derived from genetic studies of extant populations) of circa 60 ka. The second is the recent discovery of microliths dated to 35 ka in Central India. This discovery raises a central argument over whether such innovations have to be African-derived (see Mellars 2006b) or could instead be indigenous developments (see Clarkson et al. 2009).

Moving further east towards mainland and island Southeast Asia, we cannot escape two realities: one is that their Palaeolithic record is extremely poor, particularly before 40 ka, and the other is the long shadow cast by the pronouncements of Hallam Movius (1948) more than 60 years ago that the Palaeolithic inhabitants of Southeast Asia were primitive, backward and conservative. Such negative views also helped denigrate perceptions of Australian aborigines, as these were likely derived from populations in Southeast Asia. Two papers explore the history of research in Southeast Asia and Australia. Dennell discusses Western perceptions of Asia as ancient, exotic but backward and argues that Movius helped reinforce such prejudices on the basis of poorly dated surface assemblages of stone artefacts, and Bowdler shows how negatively Aborigines have been portrayed. As both argue, it is time to move on to a less prejudiced perspective.

The greater part of the volume is taken up with considerations of Sunda – the great landmass of Southeast Asia that during interglacials (as now) becomes an archipelago of more than 7,000 islands – and Sahul, the continental landmass that at times of low sea level unites Australia with New Guinea and Tasmania. Sunda and Sahul are fascinating for a number of reasons. One is that despite the distance of Australia from East Africa, humans arrived here long before they entered Western Europe between 30 and 40 ka. Although the first definite evidence in Sunda for our species dates from circa 35 and 37 ^{14}C ka (40 and 44 cal ka BP) at Niah Cave, Borneo (see Hunt and Barker, this volume), humans were already venturing into the highlands of New Guinea circa 49 ka BP (see Summerhayes and Ford, this volume), and (depending upon which dates are preferred) were in Australia between 45 and 60 ka ago. The second source of fascination is that the colonisers of Sahul could have arrived only by using watercraft that were navigable by paddle or sail, as the sea currents rule out the chances of arrival by accidental drifting (see Morwood, this volume). To place this evidence in wider perspective, by 30 ka humans in Southeast Asia were routinely making round trips across 100 km or more of open sea to islands not visible from the coast; in Europe, there is no similar evidence until the Holocene. Thirdly, the Pleistocene inhabitants of Sunda and Sahul were simultaneously using a remarkably simple lithic technology (by European standards) to exploit extremely complex environments, some of which (in the case of Australia and New Guinea) were ones that had never been occupied before. As Habgood and Franklin (2008) have already pointed out, the first Australians did not arrive with an "African package" of "modern" traits such as blades, ground stone and stylised artefacts but developed these piecemeal over several millennia according to local circumstance in a "revolution that wasn't". These themes are explored by several contributors: Davidson, and Balme and O'Connor examine seafaring and speed of colonization as evidence for complex behaviours with simple technologies, and different forms of evidence of complex behaviours – such as maritime technologies, organic technologies, movement of plant and animal species, burial practices, detoxification, pelagic fishing and hafting – are examined in the contributions by Hunt and Barker for Borneo, Summerhayes and Ford for New Guinea, Piper and Rabett for Island Southeast Asia, and Pawlik et al. for the Philippines. For Sahul, Habgood and Franklin show in Chapter 12 how the appearance and development of art and symbolism in Aboriginal Australia should be seen as part of a set of responses of environmental instability and demographic pressure. They further suggest these factors could be usefully explored in studies of the appearance of symbolic behaviour in Middle Stone Age sub-Saharan Africa and the Middle to Upper Palaeolithic transition in Europe. A rather different approach to the Australian evidence is taken by Langley (Chapter 16), who examines the importance of taphonomic factors when considering evidence for the early manifestations of art and symbolism in Africa, Europe and Australia. She rejects comparisons between Australia and Eurasia, and argues instead that the Australian evidence shows the remarkable adaptability and flexibility of the Pleistocene colonists of Sahul.

For Europeans, the fascination of the evidence from Sunda and Sahul must surely be that it inverts so many perceptions of how modern behaviour might be recognised. Here, Australia reverts to type, as it seemed an inverted world to European observers in the1830s. As J. Martin complained in the 1830s, "trees retained their leaves and shed their bark instead, the swans were

black, the eagles white, the bees were stingless, some mammals had pockets, others laid eggs, it was warmest on the hills and coolest in the valleys, [and] even the blackberries were red" (cited by Dunlap 1997). In Palaeolithic terms, the indigenous inhabitants of Sahul routinely navigated across open seas and survived in complex and often harsh environments with an astonishingly simple technology and without an Upper Palaeolithic revolution. Nonetheless, the inhabitants clearly had the potential to act in an Upper Palaeolithic manner if it was in their interests. This is borne out in Gilligan's fascinating study of Tasmania, which on contact with Europeans was inhabited by people with the simplest technology then recorded. He shows that they had developed in the late Pleistocene some hallmarks of the European Upper Palaeolithic – sewing needles – but later discarded them and relates that to the need for sewn clothing in the severest parts of the Pleistocene. In milder times, sewn clothing was seen as unnecessary and needles were thus discarded – so they entered, and left, the "advanced" Palaeolithic depending on ambient temperature. To develop this further, the emphasis in the European Upper Palaeolithic on scrapers and needles may simply reflect the need for sewn clothing and, by extension, the need to emphasise social status by adornment of clothing with beads and jewellery rather than through using the body for colouring, tattoos or scarification – none of which would of course be preserved.

Three Major Debates about *Homo Sapiens* and the Southern Rim of Asia

Synthetic discussions about the first appearance and subsequent development of *Homo sapiens* in southern Asia tend to focus on three inter-related themes: When did our species first appear between Arabia and Australia? Did it appear through local evolution or through dispersal from Africa? When can it be regarded as modern?

When Did Homo sapiens First Appear between Africa and Australia?

As is well-known, the first unambiguous skeletal evidence for our species outside Africa dates from circa 125 ka and comes from the cave of Skhūl in northern Israel. Slightly later evidence comes from the cave of Qafzeh, also in Israel, and dated to circa 100–80 ka. After this date, *H. sapiens* appears to become extinct in the Levant and was replaced by Neanderthals between circa 70 and 50 ka, after which they in turn were replaced by *H. sapiens*. Some researchers (e.g., Shea 2008) regard this sequence as representing a failed dispersal event by *H. sapiens*, as it did not persist, nor did it appear to have ventured beyond the Levant. Opinions vary enormously over when our species dispersed across southern Asia and entered Australia. One argument is that as the Arabian Peninsula is much closer to East Africa – seen by many as the most likely place where our species originated – *H. sapiens* could have entered it as early as in the Levant (i.e., during MIS5 or late MIS6), and then dispersed eastwards (see, e.g., Dennell & Petraglia 2012). Most researchers prefer a later date: Field and Lahr (2006) suggest that it spread eastwards during MIS 4 (ca. 80–70 ka); Petraglia et al. (2007) and Clarkson et al. (2012) have argued on the basis of similarities in stone core reduction that *H. sapiens* was already in India before the super-eruption of the Toba volcano in Sumatra circa 74 ka; Oppenheimer (2009; 2012a; this volume) and the majority of researchers who infer population histories from genetic studies of modern populations prefer a dispersal date of < 70 ka, and likely only circa 60 ka (but see Scally & Durbin 2012); Mellars (2006c) argues on archaeological as well as genetic grounds for a dispersal date of circa 60 ka, and Klein (2009) favours a later dispersal date of circa 40–60 ka.

The crucial evidence here of course is skeletal, as that alone can indicate when *H. sapiens* is first evidenced in Arabia, South and mainland Southeast Asia, and Sunda, as well as the identity of its predecessors in those regions, and the date of their extinction. Unfortunately, as Dennell shows in Chapter 2, this is currently impossible, because the only clear landmark in southern Asia east of

the Levant and East Africa is the cranium from Niah Cave, Borneo, dated to circa 40–44 cal ka BP. There is no relevant skeletal evidence older than 30 ka from South Asia, or the Holocene in the Arabian Peninsula. Although there are hints that *H. sapiens* is present in Sunda and South China by 100 ka, these claims are beset by uncertainties of dating, stratigraphic context, or identification as unambiguously *H. sapiens*. Nevertheless, one of the most unexpected recent surprises has been the discovery of a human metatarsal at Callao Cave, Luzon, in the Central Philippines dated to 67 ka, as described by Pawlik et al. in this volume. Although the metatarsal has been described as similar to that of *H. habilis, H. floresiensis* and *H. sapiens*, the last-mentioned seems the most likely as Luzon could have been reached only by boat (and *H. habilis* can surely be discounted as a potential coloniser!). While the evidence from Callao Cave might therefore also be indicative of further so-far-undetected hominin species in island Southeast Asia, it certainly raises the possibility that the colonisation of Australia was part of a wider process of maritime colonisation in Southeast Asia in the early Upper Pleistocene – when Neanderthals still inhabited the Levant. If so, the timing of dispersal of *H. sapiens* from Africa may have been seriously underestimated, as well as its capability.

Because the current human skeletal record from Arabia, South and Southeast Asia, and Sunda is so inadequate, we are forced to rely on proxy indicators, notably genetic studies of regional population histories derived from modern populations, and archaeological studies of lithic assemblages. There is no doubt that population geneticists have made enormous progress in elucidating population histories across Asia for the past 60 ka, and this may well show that successful dispersals – in the sense of having extant descendants – across Asia occurred only after 60 ka. However, this leaves open the possibility of earlier dispersals that left no surviving genetic legacy in extant populations. As example, the earliest populations of *H. sapiens* in the Levant date from 125 ka and have left no genetic imprint on the present. Lithic evidence is also highly problematic as a source of evidence about when *H. sapiens* first appears in Southern Asia. In the Levant, both the earliest groups of *H. sapiens* and the Neanderthals who replaced them used the same type of Middle Palaeolithic assemblage, and in East Africa, the earliest groups of *H. sapiens* continued to use a Middle Stone Age technology. Conversely, changes in lithic technology need not indicate a change of the species that used it. As an example, Mellars (2006c) has argued the similarities between microliths 35 ka old in India and older ones in the Howiesons Poort industry of southern Asia are such that it is an "impossible coincidence" that the Indian ones were developed indigenously. Yet microliths developed indigenously in Australia and are (to date) absent from the Arabian Peninsula until the terminal Pleistocene. These issues are also addressed by Clarkson in Chapter 7, who examines the composition of artefact assemblages across southern Asia, argues that these undergo a reduction in diversity with distance from Africa and develops an argument for "for a non-microlithic dispersal of anatomically modern humans before 60 kya". As he notes, better (and, in particular, skeletal) evidence is needed to confirm or refute these proposals, but much could still be learnt by focusing archaeological attention upon southern Asia between 50 and 60 ka.

Multi-Regional Evolution or Replacement?

Arguably the longest-running debate in studies of human origins is whether our species originated in one "centre" or whether it arose indigenously from local populations. At risk of generalisation, most researchers currently favour the former model, and envisage *H. sapiens* as originating in Africa and then dispersing initially to the Levant, and then later throughout Eurasia and ultimately to Australia, the Pacific and the Americas. For those favouring a multi-regional model, China and Southeast Asia have often been put forward as the regions with the most compelling evidence outside Africa for the local evolution of our species from an indigenous background.

If one relies solely on human skeletal evidence, neither model can at present be completely discounted. As concluded in Chapter 4, those favouring a replacement model for the appearance

of *H. sapiens* between Arabia and Australia cannot yet satisfactorily demonstrate when it first appeared, how often it may have dispersed or whom it replaced. Multi-regionalists face three major problems: first, in Sunda, it is not currently possible to demonstrate population continuity between the population from Ngandong – now re-dated to the Middle Pleistocene – and that at Niah Cave which is at least 100 ka younger. Secondly, the multi-regional model depends upon the existence of genetic networks across Asia, for which there is currently no indication in mainland Southeast Asia between the late Middle Pleistocene (ca. 150 ka) and the Upper Pleistocene. Additionally, as Lahr (1996) has pointed out, it is very hard to demonstrate anatomical traits that are unique to the hominin sample from China, Southeast Asia and Australia. Finally, the fossil record from South China has so many problems over dating, stratigraphic context and identification that it impedes any firm conclusions about ancestor-descendant lineages. Clearly, we need not only more fossil evidence – particularly from Arabia, India and mainland Southeast Asia – but more evidence that is not dogged by issues over its age, context or identification to species level.

How Ancient Is "Modern"?

An integral but often ill-fitting part of discussions over when *Homo sapiens* first appeared in the regions between East Africa and Australia is the issue of modernity: at what point did the archaic populations of *H. sapiens* evidenced in the Levant and East Africa before 100 ka become "modern" in the sense of having the same cognitive and behavioural capabilities as ourselves? As these capabilities are regarded as cultural or behavioural and not skeletal, identification of modern humans thus shifts from the physical anthropologist to the archaeologist. The complex issues involved in these discussions are explored by Porr in the final chapter of this volume. Despite some considerable advances in the past few decades, current discussions continue to reflect issues that Darwin and Wallace struggled with in the 19th century. These involved "the higher faculties" of human thinking for which the former assumed a gradual development and perfection during human evolution and history, while the latter favoured revolutionary origins (as a product of divine intervention) (see, e.g., Porr 2010; Ingold 2004). To a certain extent, these differences are contained in recent discussions about which traits might be used to identify modernity. For example, McBrearty and Brooks (2000) argue that the origins of "modern" behaviour were acquired incrementally and have roots deep in the African Middle Stone Age; at the other extreme, Klein (2008) argues that the shift to modernity occurred circa 50 ka and involved a small but critical number of genetic changes, akin to switching on a light, that resulted in modern capabilities in language, abstract thought and symbolism. While both approaches continue to use the European Upper Palaeolithic record as a benchmark to measure behavioural complexity, they each would answer the question differently if certain material expressions, such as evidence for symbolism (e.g., ochre, shell beads and ornaments) or behavioural flexibility (Shea 2008) can be regarded as critical indicators for modernity. Both approaches consequently provide different answers to the question whether particular expressions are unique to *H. sapiens* or might be found in other hominin species; put another way, would evidence of art, symbolism or behavioural flexibility in Arabia, India or Sunda necessarily indicate the presence of *H. sapiens*? As yet, there are no traits that can be regarded as universal but exclusive to *Homo sapiens*. One solution to this dilemma is to invoke the evidence from Australia, which we know was colonised only by *H. sapiens*. As these colonists had the ability to build navigable watercraft, navigate open seas and colonise an environment wholly different from those west of the Wallace Line, we can reasonably assume that they were "modern", and presumably acquired or developed that modernity by the time that they appeared in Southeast Asia. Australia thus provides, as Davidson points out in this volume, a baseline for when modern behaviour can be safely assumed. In a comparable manner, Cosgrove, Pike-Tay and Roeboeks discuss the claimed contrasts between "archaic" and "modern" behaviour by reference to the Tasmanian evidence. European writers such as Sollas (1911) depicted the

indigenous inhabitants of Tasmania as comparable to Neanderthals, even though they were clearly humans like ourselves. They argue that "models used to describe human groups as either 'archaic' or 'modern' are faulty and are clearly unhelpful in explaining issues such as the Middle to Upper Palaeolithic transition in Europe": instead, they suggest, we need to understand cultural variability in terms of responses to solving social and environmental problems.

Conclusion

We regard this volume as a work in progress: we are far from understanding how and when *Homo sapiens* first appeared and subsequently developed between Arabia and Australia – and offer no definite set of conclusions on these topics. There are inevitably regrettable omissions. In Arabia, Anne Delagnes and her group have conducted exemplary fieldwork in Yemen, and thankfully their work at Shi'bat Dihya is now published (Delagnes et al. in press). Sri Lanka is another unfortunate omission and the recent publication of Perera et al. (2011) shows the rich occupation record dating back to 36 ka in that island. Nevertheless, we hope this volume shows the extraordinary diversity and complexity of the evidence so far obtained on the Pleistocene inhabitants of Sunda and Sahul and the potential richness of poorly documented regions such as Arabia and India. The southern rim of Asia, from Arabia to Australia, deserves to be treated as more than simply a corridor that humans had to traverse on their way to Australia, and as potentially every bit as fascinating in its own right as Europe or the Levant.

Chapter 2

East Asia and Human Evolution
From Cradle of Mankind to Cul-De-Sac

Robin Dennell

Introduction

Our thinking about the Early Palaeolithic of the "Far East" – the region containing China, Korea, Japan and Southeast Asia – is still framed in terms of the "Movius Line", whereby the Early Palaeolithic inhabitants of East and Southeast Asia supposedly retained a simple, Mode 1 flake and core lithic technology until the Late Pleistocene and in some regions, even the Early Holocene. In contrast, those hominins west of the Movius Line, in Africa, most of Europe, Southwest Asia and India, developed an Acheulean Mode 2 lithic industry in which handaxes were prominent, along with cleavers in Africa, Southwest Asia and India (Movius 1948). Thereafter, these same inhabitants later developed prepared-core Middle Palaeolithic or Middle Stone Age (Mode 3) assemblages, and later still, Upper Palaeolithic or Late Stone Age (Mode 4) blade-based assemblages. Because of these differences, early Palaeolithic societies west of the Movius Line have often been portrayed as "dynamic", unlike those to the east, which have been envisaged as unchanging in their technology and deeply conservative. Since Movius published his synthesis of the Old World early Palaeolithic in 1948, a substantial literature has accumulated on the Movius Line. Some authors have argued that the presence of (a few) bifaces in China and Korea invalidate the concept entirely (Yi & Clark 1983; Gamble & Marshall 2001); others have argued that their occasional presence in East Asia indicates the need to envisage a "Movius Line sensu lato" (Lycett & Bae 2010; Norton et al. 2006), and several have proposed reasons why a bifacial, Acheulean technology was rarely utilised in East Asia (Pope & Keates 1994). Suggestions have ranged from a reliance on bamboo (Pope 1989; Watanabe 1985) to demographic factors (Schick 1994; Lycett & Norton 2010). It is hard to name any other paper that has been discussed and cited so frequently in Palaeolithic archaeology more than 60 years after publication as Movius's paper of 1948. Likewise, probably no figure has been reproduced in textbooks and articles on Asian palaeoanthropology as often as Movius's (1948) map showing the demarcation of bifaces and non-biface assemblages in the Lower Palaeolithic (Figure 2.1).

At the risk of generalisation, most who have written on the "Movius Line" have tended to regard it as a concept that is basically sound, and then attempted to explain or modify it. Here, I suggest it is useful to examine the origins of the concept, and assess whether the ideas underlying

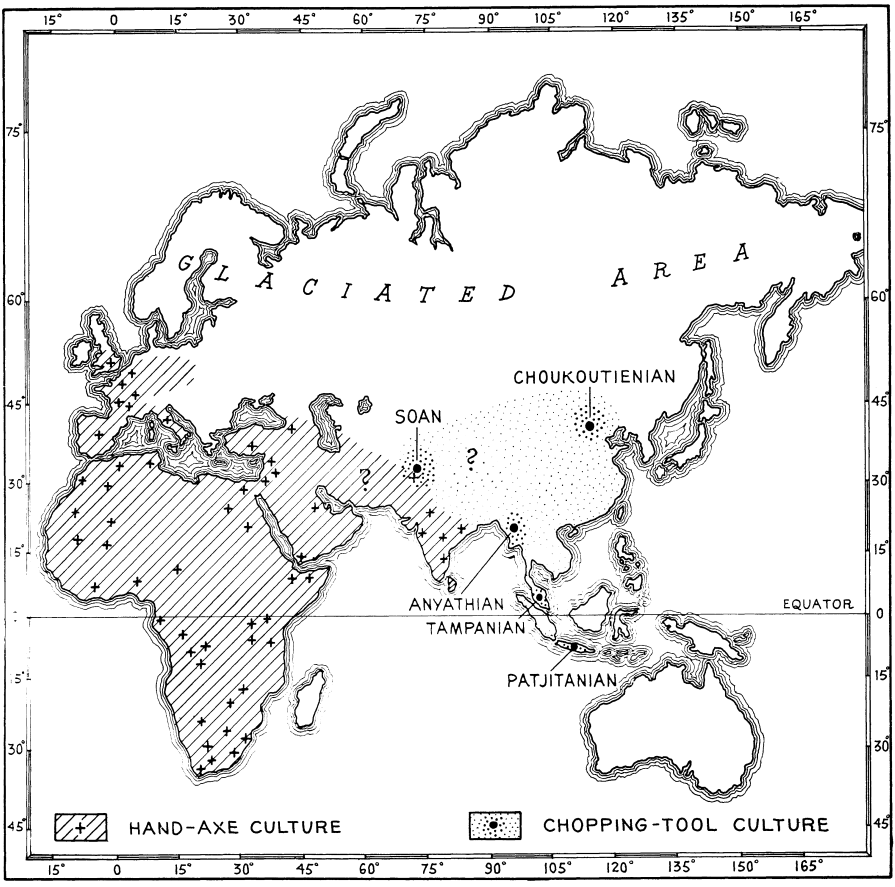

Figure 2.1. Movius's interpretation of the early Palaeolithic world (Movius 1948, map 4; reproduced with kind permission from the American Philosophical Society).

it can be regarded as valid. In order to do this, we need to examine three basic ideas: that humanity in the "Far East" was very ancient, that it was thereafter very conservative, and that it was "primitive" relative to contemporaneous developments further west. I suggest it is also useful to assess the origins of the Movius Line in relation to wider perceptions of the "Far East" by Western investigators prior to World War II.

The East as Ancient

Although Darwin (1871) tentatively suggested that humans originated in Africa, most physical anthropologists by the end of the 1930s thought East Asia was a more likely place of origin. This was because almost all the relevant fossil hominin specimens came from Asia: from Trinil (found in 1891), Modjokerto (1935) and Sangiran (1937–1941) in Java, and in China, Choukoutien (now Zhoukoudian), where numerous fossils attributed to *Sinanthropus pekinensis* (now *H. erectus*) and artefacts were found from 1925 to 1937. Other important specimens came from the European peninsula in western Eurasia, notably Mauer (1907) and Steinheim (1933) in Germany, and in

Britain, Piltdown (1912), which was not unmasked as a hoax until 1953, and Swanscombe (1935–1936). Africa in 1939 had no fossil evidence for the earliest phases of human evolution, with the obvious exceptions of Dart's discovery of *Australopithecus africanus* in South Africa in 1925, and Broom's discoveries of *A. transvaalensis* at Sterkfontein (1936–1939) and *Paranthropus robustus* at Kromdraii (1938); at the time, most researchers (particularly in Britain) regarded these as ape-like, and not directly or even remotely relevant to human evolution. The remains from Broken Hill (Kabwe), found in 1921, were regarded as an African Neanderthal or early *H. sapiens*, and Leakey's discovery of hominin specimens at Kanam and Kanjera (Kenya) in 1932 elicited a damning degree of scepticism over their age and provenance (Boswell 1935; Kent 1942). A second point favouring an Asian origin for humanity was the strong appeal of biogeography, particularly as developed by Matthew (1915) and Black (1925), who argued that the cradle of mammalian and human evolution lay in the invigorating realm of East Asia because of the uplift of the Tibetan Plateau: as it became higher, drier, less forested and more seasonal, primitive forms of animals either became extinct or dispersed to marginal areas in Southeast Asia and Africa, and more successful types took their place. Finally, racial prejudice played its part in favouring Asia over Africa, as eminent British palaeoanthropologists such as Sir Arthur Keith and Sir Eliot Grafton Smith refused to countenance the idea of a black ancestry for Europeans and preferred instead a Eurasian one (see Dennell 2001).

Despite the overwhelming amount of fossil skeletal evidence favouring an Asian origin for humankind prior to 1939, some argued on archaeological grounds that humanity was more ancient in Africa than Asia. According to the chronological frameworks of the time, which were based on correlations of geological deposits to four major glaciations in Europe and a similar parallel sequence of pluvials in Africa, the oldest artefacts were thought to be the Kafuan industry from Uganda. This was considered to be older than the earliest Oldowan industry, which was then dated to a warm period before the first Alpine (Günz) glaciation, along with the oldest "pre-Chellean" artefacts from Europe and those from Choukoutien, China (see, e.g., Leakey 1934, 126). However, the evidence that the Kafuan was earlier than the Oldowan was weak, and in 1939 it was still possible to argue that tool making was no older in Africa than in Europe or Asia. (The Kafuan industry was effectively shown to be an assemblage of geofacts by Desmond Clark [1958], by which time the primacy of Africa was well established.)

The East as Conservative

The notion that the Palaeolithic inhabitants of the "Far East" were ancient but thereafter extremely conservative in their lithic technology (and perhaps other aspects of their behaviour) stems primarily from the shared fieldwork experiences of four researchers in Java in the summer of 1938. These were the German American geologist Helmut de Terra (1900–1981), the French palaeontologist and Jesuit Teilhard de Chardin (1881–1955), the palaeontologist G. H. R. von Koenigswald (1902–1982) and the American archaeologist Hallam Movius (1907–1987). All four met in Java following the expedition of Terra, Chardin and Movius to the Upper Irrawaddy Valley in autumn 1937 and spring 1938. Between them that summer, they shaped discussion and debate about the early Palaeolithic of East Asia for the following 70 years. In terms of its intellectual influence on subsequent generations, the fieldwork in Burma was the most significant piece of Palaeolithic research in East Asia before World War II. The role of each should be briefly summarised.

Helmut de Terra

Helmut de Terra was one of the giants of Pleistocene studies of Asia in the 1930s. In 1927–1928, he had been on an expedition to Central Asia and later studied the geology of Chinese Turkestan (now Xinjiang), Tibet and the eastern Himalayas. He surveyed in Kashmir in 1932 with the