

A fifty years commemoration: fossil vertebrates and stone tools in the Walanae valley, South Sulawesi, Indonesia.

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*Wenn du von allem dem, was diese Blätter füllt,
Mein Leser, nichts des Dankes wert gefunden,
So sei mir wenigstens für das verbunden,
Was ich zurück behielt.*

Lessing

Introduction

In 1947, fossil remains of vertebrates and stone implements were found along the middle course of the Walanae river in southern Sulawesi, the former Celebes. In 1977, I devoted a short article in *QUARTÄR* to this fossil fauna and lithic industry in which I went against an accepted view by stating that there was a great difference in age between the fossils and the artifacts. In my opinion, the fossils are Upper Pliocene and the artifacts Upper Pleistocene.

Now, in 1997, in celebration of a fiftieth anniversary, and also in the light of the current resurgence of historiographic interest, it seems justified to write another article in these pages, this time about the history of the original finds. Thus, centre stage can be given in a somewhat informal way to the people who brought this unique material from Sulawesi into the open at the end of the Forties: Hendrik Robert van Heekeren (1902-1974) and Dirk Albert Hooijer (1919-1993). These men, true men of science, should not be forgotten (Fig. 1-2).

Where this is appropriate, the text shall go briefly into new insights and developments. In the last few years especially, much fieldwork has taken place in the Walanae valley, and the picture of the fossil fauna and lithic industry has become decidedly clearer. As far as I am concerned the *adagium* of non-contemporaneity of fossils and artifacts still stands (Bartstra et al. 1991; Bartstra and Hooijer 1992; Bartstra et al. 1994; Keates and Bartstra 1994; Hooijer and Bartstra 1995).

Van Heekeren in Beru

On the 15th of August 1945 Japan capitulated and World War Two was factually over. Among the large numbers of POW's who returned from the camps in the Far East was Hendrik Robert van Heekeren. Before the war he had been a tobacco planter in the Dutch East Indies. In his free time he had



Fig. 1. Young Hooijer behind his desk in the museum at Leiden in 1959.



Fig. 2. An old photograph of Van Heekeren roaming the fields around Beru in the closing months of 1947. It appears that the printing facilities were not that good in southern Sulawesi in those days.

made a name for himself as an amateur archaeologist on several digs in East Java and South Sulawesi, and he had published some of the results¹. This will undoubtedly have been one of the reasons why he was appointed Government Prehistorian for southern Sulawesi in August 1946². He went to live in the coastal town of Watampone³ (Fig. 3).

The first thing he did was to re-establish contact with some of the leading prehistorians and anthropologists he had corresponded with before the war. Among them were Robert Heine-Geldern and Hallam L. Movius Jr. Van Heekeren informed them that he had survived the ordeal of the war and he asked them for advice and supplies (photographic equipment). For the time being he could expect very little from the head office of the Archaeological Service in Batavia (now Jakarta). The Dutch East Indies were in turmoil, there was fighting in many places, and the Indonesians wanted the Dutch to leave. These

¹ A first publication, concerning megalithic remains in the region of Besuki, East Java, dates from 1931; Van Heekeren's last pre-war paper, concerning the Palaeolithic of Java, appeared in 1941 (Java was overrun by the Japanese in 1942). He had also published some papers on the prehistoric remains in the caves of South Sulawesi before the war. All of these were written in Dutch. See References.

² For an account of Van Heekeren's wanderings between August 1945 and August 1946, when he was in fact still in military service, see his biography (published in Dutch) „De onderste steen boven“, p. 60 ff.

³ Depending on whether the old colonial spelling, the modern Indonesian spelling, or the local Buginese spelling is used, we find: Wattampone, Watampone, or Watangpone.

were not the best circumstances for Van Heekeren to begin his fieldwork. Nevertheless he continued with his plans and on trips which he considered to be particularly dangerous he travelled with a grenade in his pocket.

In the first half of 1947 Van Heekeren (1949a and b) was busy investigating tumuli and caves⁴ in the Watampone region. At the time not too much was known about the prehistory of southern Sulawesi, and everything that could be garnered from a systematic excavation was of value. As he was particularly looking for traces of Pleistocene man, Van Heekeren paid special attention to the investigation of caves. To a certain extent he was continuing his pre-war searches for the so-called „Toalian“. This name applies to artifact assemblages in caves which had already been found by the Sarasins⁵, the well-known Swiss naturalists, on their journeys of discovery through Sulawesi. They had given a name to these artifact assemblages derived from the Toale or wood men, a seemingly „primitive race“ that still lived in caves in South Sulawesi at the beginning of the twentieth century. The Sarasins regarded these cave dwellers as the descendants of the original inhabitants of Sulawesi, a theory which could later be disproved⁶. There had always been much speculation as to the origin and date of this Toalian (e. g. Sarasin and Sarasin 1903; Heine-Geldern 1927, 1945; Van Stein Callenfels 1938; Van Heekeren 1939, 1941 a; Franssen 1949; Otley Beyer 1952; etc.).

The hope of finding traces of Pleistocene man was also the reason why Van Heekeren extended his investigations to the remnants of raised beaches along the coasts of southern Sulawesi, and the person who encouraged him the most in this respect in many letters from America was that old stager Hallam L. Movius Jr. In the end it did not turn out to be the coastal terraces which yielded archaic lithic implements but the river terraces along the Walanae, a large inland stream flowing northwards from the deeply scarred cone of the extinct Lompobatang volcano, nearly 3000 m high. The river Walanae flows into Lake Tempe and then eastwards as the Cenrana river into the Gulf of Bone (Fig. 3)⁷.

On the 2nd of August 1947, Van Heekeren was in the town of Soppeng. At the local hotel that evening, he met J.C. Olivier, a Government Controller of land rent obligations who because of his job travelled a lot in the interior. On that day Olivier, who was interested in archaeology, had been to the village of Beru⁸, a few kilometres east of Soppeng, and had come across a few patinated and artificially worked stone flakes. He had found them on the surface, but they had presumably come from a cemented conglomeratic sandstone which outcropped in the tobacco and maize fields just south of Beru. He showed his treasures to Van Heekeren, who was so enthusiastic that he wanted to go into the fields with Olivier immediately. It was already dark, however, and in those days it was not safe to roam around in the fields in the middle of the night. The expedition was therefore adjourned until the 3rd of August.

In a later letter Van Heekeren acknowledges that it was Olivier who set him on the trail of Pleistocene man in South Sulawesi⁹. Van Heekeren didn't for a moment doubt that the flakes from the fields around

⁴ Tumuli near Lampokko and the Bola Batu cave (formerly: Batoe). See References.

⁵ See References.

⁶ According to a letter from Movius to Van Heekeren, dated 14 November 1949, the material that the Sarasins had collected, which included the original Toalian from the region to the east of Maros (Lamoncong, in the central part of South Sulawesi (F. Sarasin 1905)), was to be found in the „Museum für Völkerkunde“ in Basel. Bandi (1951) has devoted some attention to the artifacts. Paul and Fritz Sarasin (1905) travelled through Sulawesi in 1893-1896 and again in 1902-1903. Nowadays, our knowledge of the prehistoric occupation of the caves in southern Sulawesi is very substantial, mainly as a result of several first-rate excavations, for example that of Ian Glover in the Leang Burung 2 (= Burung cave). See References. This excavation also provided some surprisingly early¹⁴ C dates, between 30,000 and 17,000 years ago.

⁷ See Note 3. Walanae is also written as Wallanae or WallanaE; Tempe as Tempeh; and Cenrana as Tjenrana.

⁸ Idem. Beru is (was) written as: Berru, Beroe, etc.

⁹ Letter dated 9 January 1970, written by Van Heekeren in Jakarta to Olivier on the eve of the Joint Indonesian-Dutch Sulawesi Prehistoric Expedition.

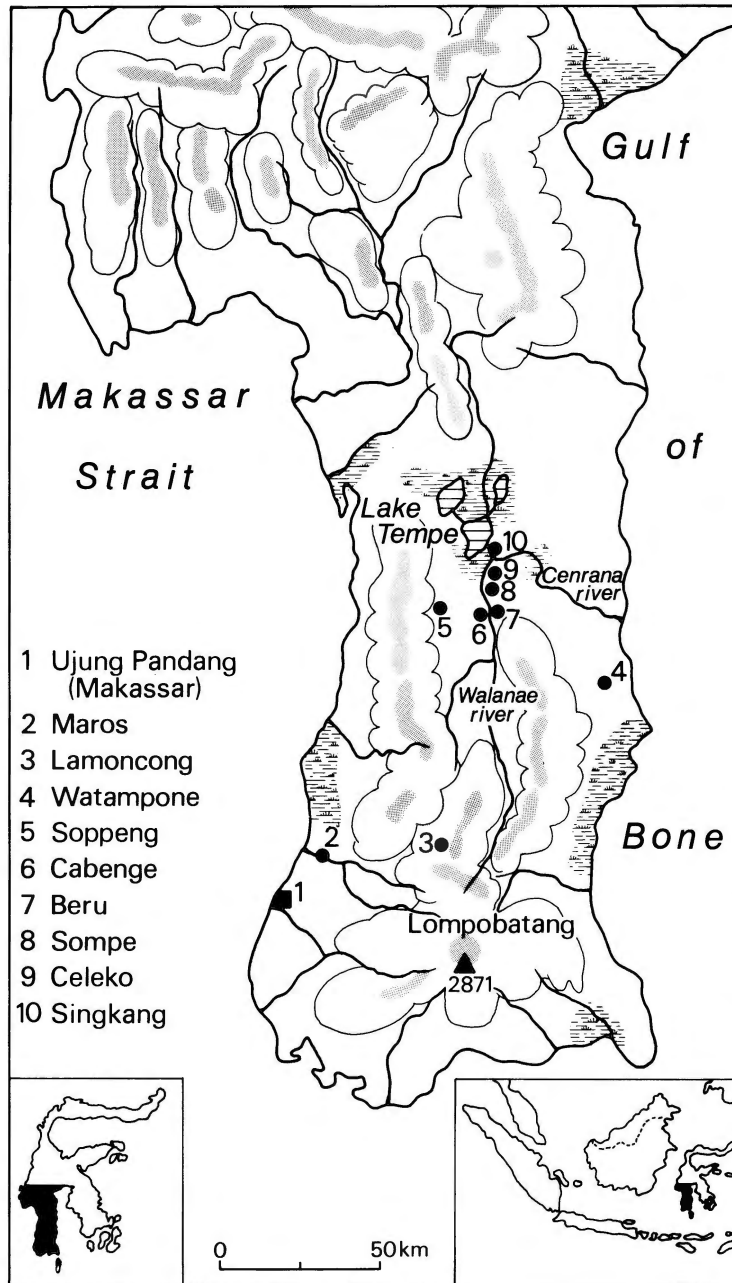


Fig. 3. Map of southern Sulawesi, showing fossil localities, artifact sites and other relevant places mentioned in the text. The hills of Kecce and Paroto, where large core implements have been found since 1970, are situated a few kilometres south of Beru.

Beru were truly Palaeolithic. To begin with there was the noticeably heavy patination; and then there was the cemented conglomerate from which the flakes appeared to come. Above all, in Van Heekeren's view the flakes were identical to those from the Upper Pleistocene Notopuro layers in Sangiran, Java¹⁰; and with this he introduced a kind of dating 'using implements as zone fossils' (Oakley 1964, p. 137). But the most important argument in favour of a Pleistocene date appeared to be the pieces of fossilized vertebrate bones and teeth which Van Heekeren found in the same fields around Beru. A few weeks after the discovery of the flakes he found a molar of what appeared to him to be a proboscidean (Fig. 1). Other bones followed, and these too seemed to have been eroded out of the conglomeratic sandstone. The tools of Pleistocene man and his prey together: ostensibly Van Heekeren had hit the jackpot. In the meantime Olivier had moved on. The two men never met again¹¹.

On 8 August Van Heekeren wrote to Hallam L. Movius Jr. about the finds near Beru, and a second letter followed on 16 September. The first letter told of the flakes, the second of the fossils. At that time Movius was the recognized specialist in the field of the Old Stone Age in the Far East¹², and he held a position at the Peabody Museum in Cambridge (Mass.). He was on holiday when Van Heekeren's letters arrived, but he excitedly replied on 2 October. In a further letter he wrote: „I wish I could take a plane and come out and have a look at it“. But he was also worried, asking: „How do you know that this material is Late Pleistocene?“ It seems that Van Heekeren's answer did not set Movius's mind at rest, because in a letter dated 19 February 1948 he expresses the hope „to hear later on whether or not you are able to obtain positive evidence that the material is of Late Pleistocene age“.

The dating of the lithic industry and the vertebrate fossils was to remain vague for the time being. Halfway through January 1948, Van Heekeren, who had in the meantime moved from Watampone to Makassar (the capital of Sulawesi, now called Ujung Pandang), sent a typed report of his activities since August 1946 as Government Prehistorian for South Sulawesi to the head office in Jakarta. This account would later be (partly) published (Van Heekeren 1949c). In it Van Heekeren says that he has found flakes mainly of chalcedony, often with dorsal working, and a recognizable striking platform (talon) and positive bulb: that distinct portion of the cone of percussion that betrays purposeful manufacturing. The artifacts are all surface finds, lying together with mineralized bones and teeth. Van Heekeren still only mentions one site, Beru¹³, but talks of two facies where the material appears to have come from. He adheres to a date of (Late) Pleistocene. According to him, the remains of fossil man could be expected at any moment.

In March 1948 Movius received the first photographs of the vertebrate remains. He immediately showed them to the vertebrate palaeontologist Edwin H. Colbert (of the American Museum of Natural History), and informed Van Heekeren of Colbert's enthusiastic reply¹⁴. In the same letter he advised Van

¹⁰ Sangiran in Central Java, situated a few kilometres to the north of the town of Surakarta (Solo), is at present the most important locality of fossil hominids in Southeast Asia. The first finds of *Homo erectus* remains there date to the Thirties. There is an extensive literature on the stratigraphy of Sangiran (e.g. Itihara et al. 1985). The term Notopuro layers was introduced by Duyfjes in 1936 for the coarser fluvial top part of the Sangiran section. In 1934 Von Koenigswald found humanly worked flakes in this top part (e.g. Von Koenigswald and Ghosh 1973), but there is some doubt about whether these flakes occur in the Notopuro layers proper or in some younger unit (e.g. Bartstra 1985). We can shortly expect more details about this top part due to ongoing excavations (e.g. Sémah et al. 1992, etc.).

¹¹ J.C. Olivier was transferred to the island of Lombok at the beginning of 1948, and left from there for the Netherlands for good in 1950. Pers. comm.

¹² Before the Second World War, in 1937-1938, Movius took part in the American Southeast Asiatic Expedition, which took him to Burma and also to Java. Publications: see References.

¹³ In fact Van Heekeren is referring to the fields to the south of the village of Beru.

¹⁴ In a letter dated 21 April 1948.

Heekeren to contact Dirk Albert Hooijer at the then Museum of Natural History in Leiden, the Netherlands. Hooijer was a budding young palaeontologist working on the Dubois Collection¹⁵, and thus well acquainted with fossil material from eastern Asia. Another scientist who according to Movius should certainly be informed about the Sulawesi fossils was G.H.R. („Ralph“) von Koenigswald, who had done pioneering work on Pleistocene man and the associated vertebrate faunas in Java before the war¹⁶. Movius in his letter of reply particularly emphasized contacting Von Koenigswald in addition to Hooijer, but in the end Van Heekeren chose to forward the first batch of fossils to Hooijer in Leiden, thus alienating Von Koenigswald who had just taken up tenure at the University of Utrecht in the Netherlands. What Van Heekeren probably did not realize was that Hooijer and Von Koenigswald were at that time involved in a serious disagreement about the assessment and dating of the fossil vertebrate faunas of Java¹⁷. Von Koenigswald regarded Hooijer as an irritating brat, who did not know what he was talking about. Van Heekeren would meet both men in person, however, for at the end of May 1948 he left for the Netherlands on leave.

Hooijer in Leiden

The analysis of the new vertebrate fauna from Sulawesi gave Hooijer a chance to do pioneering scientific work and he grabbed it with both hands. He received the material in the spring of 1948; by autumn he already had three articles on it in press: *Celebochoerus beekereni* nov.gen.nov.spec; *Testudo margae* nov. spec.; and *Anoa depressicornis* (Smith) subsp. and *Babyrousa babyrussa beruensis* nov.subspec¹⁸. Hooijer eagerly asked Van Heekeren (who had arrived in the Netherlands in mid 1948) for more material. Hooijer, too, was hunting for Pleistocene man.

The first fossil material from the Walanae valley contained many remains of rather large pigs or hogs, notably their canines. Because it appeared to be a new genus and species, *Celebochoerus beekereni*, Hooijer, with his well-known sense of humour (but certainly after having asked the permission of the person in question¹⁹), used the name of Van Heekeren for the species designation. This was partly a joke and partly a sincere tribute to the discoverer of these wonderful new fossils. Van Heekeren and Hooijer developed a close friendship in subsequent years.

Celebochoerus beekereni was an impressive and giant suid. An analysis of the fossil remains reveals a large and massive skeleton. The very distinctive canines have a roughly triangular cross-section. The lower canines appear to be smaller than the upper ones. The latter are truly gigantic, sometimes with a length of more than 20 cm, so that one might speak of upper tusks. The ends of the upper canines extend beyond the lower ones and are turned sideways. Sometimes there is still enamel on the fossil remains of the upper

¹⁵ Eugène Dubois (1894) found the fossilized remains of *Pithecanthropus erectus* (now *Homo erectus erectus*) during extensive excavations near Trinil in Central Java. Many animal bones of a Pleistocene fauna were also unearthed, and these, together with material from other localities, were shipped to the Netherlands and stored in the Leiden Museum, where they became known as the Dubois Collection (e.g. Brongersma 1941).

¹⁶ Von Koenigswald arrived in Java in 1931, where he was to work as a vertebrate palaeontologist with the Geological Survey of the then Dutch East Indies. Von Koenigswald achieved his greatest triumphs in the field in the Thirties, and his name is inextricably connected with the first discoveries of the remains of fossil man in Sangiran and Mojokerto. Von Koenigswald died in 1982 (e.g. Franzen 1983).

¹⁷ Culminating in true polemics in subsequent years. Both Von Koenigswald and Hooijer were very affable people when met separately, but together they cultivated this wicked feud.

¹⁸ In addition, seven other papers by Hooijer were published in 1948. He had a truly extraordinary work rate, which also had its downside, however: Hooijer sometimes became rather overwrought.

¹⁹ Letter from Hooijer to Van Heekeren, dated 5 July 1948.

canines, but this is always restricted to a strip on the lower (ventral) surface. Hooijer was able to devote a lot of attention to these *Celebochoerus* canines because much of the fossil material that was sent from Sulawesi consisted of (parts of) canines (by the beginning of the Fifties he had already examined more than 160). The examination of the rest of the dentition, and particularly of the skeleton, took place later, when more sites with outcropping fossil horizons from which larger pieces could be collected (complete skulls or mandibles) became known.

What Hooijer thought to be a new kind of tortoise also turned out to be gigantic: *Testudo margae*. This fossil Sulawesi land tortoise must have been at least a meter long; some examples even approached two meters. Nowadays such gigantic tortoises only appear on a few scattered islands around the world (e. g. the Seychelles and the Galapagos). In his 1948 paper on *Testudo margae* (which is based on the description of a right scapula from Beru and comparisons with scapulae from museum collections) Hooijer makes the casual remark that the giant land tortoises, once widely spread over the world, had probably been exterminated by man. This is an interesting remark in view of the contemporaneity assumed by Van Heekeren between the fossils and artifacts based on the discoveries around Beru. Hooijer, however, did not develop his comment. The name *Testudo margae*, by the way, is not used any more in recent literature, because Hooijer (e. g. 1971, 1982) later categorized his land tortoise under *Geochelone atlas*, which had a wide distribution in the Plio-Pleistocene of South and East Asia.

A few of the teeth from the first collections from the Walanae valley turned out to belong to the pygmy buffalo or buffalo deer *Anoa depressicornis*. This animal is no longer extant in the region, but still lives in the wild in a few remote and inaccessible places elsewhere in Sulawesi. This anoa is represented in the (sub) fossil cave faunas of southern Sulawesi²⁰, which are younger than the fossil fauna from Beru. The remarkable babirusa no longer exists in the heavily populated Walanae valley either, but can be found in the cave faunas and, as Hooijer originally thought, in the fauna from Beru. Later on he withdrew this idea and categorized all of the rare babirusa-like remains in his collection as *Celebochoerus* (Hooijer 1954a). The molars of the babirusa and *Celebochoerus* are very similar, but the canines are different: those of the babirusa are thinner and more oval in cross-section.

In his early publications Hooijer mentions two fossil localities: Beru and Sompe²¹. This latter site was discovered by Van Heekeren in the spring of 1948. It is situated roughly ten kilometres north of Beru (Fig. 3), and yields no tools, but lots of fossils.

Hooijer in his various texts confines himself to the palaeontological analysis and gives no geological details. He would hardly have been able to distil any such from Van Heekeren's incipient meagre information; but anyway, although he had studied geology, Hooijer did not feel at ease with it²². It must be understood, though, that the general geology of southern Sulawesi was fairly well known by 1948. On the basis of the existing geological literature alone, both Hooijer and Van Heekeren could have evaluated the cemented conglomeratic sandstone sediments which outcropped in the fields where fossils and artifacts lay strewn. Such sediments in the Walanae valley have been mentioned in the literature since the end of the previous century²³, and later on the name Walanae or Bone Formation was given to them ("T

²⁰ In the caves near Maros (Leang Saripa, Burung, Pattae, etc.), but also for example in the Bola Batu near Watampone (Hooijer 1950a). Incidentally, there are two still living *Anoa* species in Sulawesi: the small *Anoa quarlesi* Ouwens and the larger *Anoa depressicornis* (Smith) (Hooijer 1950a, 1955b; see also Clason 1989).

²¹ This can also be written: Sompo or Sompoh.

²² As he wrote in a letter to Van Heekeren dated 28 May 1949: This (namely geology) is a question of practice in the field which I was not able to get because I studied mainly during the war.

²³ In fact from as early as 1890 when Wichmann (see References) recorded outcrops of sandstone to the east of Singkang (Fig. 3), and published a tentative cross-section of southern Sulawesi. Sloping Neogene strata can clearly be distinguished in a north-south orientated anticline. See also Wichmann 1893.

Hoen and Ziegler 1917, Rutten 1927, etc.). The problem, of course, was that these sediments were described as Tertiary and of a mainly marine facies, which didn't really mesh with Van Heekeren's remark that fossils of land animals and stone age artifacts both appeared to erode from the sandstone and had to be contemporary. But the literature of the time could have been an enticing incentive for the investigation of such claims in the field, especially since the first descriptions of the outcrops of the Walanae Formation register the occurrence of strata with a terrestrial facies ("T Hoen and Ziegler 1917")²⁴. The lack of proper geological information at the beginning of Van Heekeren and Hooijer's research led in subsequent years to wrong conclusions about the fossils and the artifacts, conclusions which were unfortunately readily repeated in magazines and textbooks.

It is now assumed that the greater part of the vertebrate fossils from the Walanae valley does indeed originate from this Walanae Formation, in fact from the upper part which can be referred to as the Beru member, and which is Pliocene (possibly partly Basal Pleistocene; Bartstra 1977; Sartono 1979; Bartstra et al. 1994). The discussions about the top part of the local stratigraphic section and their fossil content are still going on (Van den Bergh et al. 1994).

Hooijer did give analyses of the sandstone varieties in which the fossils he had received were embedded. In a letter to Van Heekeren dated July 1948, he mentions two distinct sandstones (an observation later officially published in Hooijer 1949 b). These two appear at first sight to agree with the two facies mentioned by Van Heekeren in his report of January 1948. Later remarks make it clear, however, that when Van Heekeren (1950 b) speaks of two facies he means two river terraces (one at 50 m and one at 75 m), which form part of a rather complex (three river terraces and four sea terraces) and eroded terrace system he believed he was able to discern on the right bank of the Walanae near Beru. Van Heekeren developed his first ideas about this terrace system during the fieldwork of 1947 and 1948, undoubtedly stimulated by the flood of literature produced in the aftermath of Davisian geomorphological thought on the so-called river drift Palaeolithic, in which terraces of all sorts and kinds tend to play a role, and of which Van Heekeren was an avid reader. According to him, both the 50 m terrace and the 75 m terrace were implementiferous and fossiliferous. The worn condition of some of the artifacts and fossils could be explained by their having been eroded from these river terraces. The outcropping conglomeratic sandstones, in his opinion, are part of the terrace sediments. It should be mentioned that Van Heekeren never wavered from these standpoints and their implications right up to his death in 1974. He continued to hope for skeletal remains of early man, next to the remains of the giant suid and tortoise.

A wonderful team

Both Van Heekeren and Hooijer loved to philosophize about land bridges, possible former connections between Sulawesi and neighbouring regions, along which vertebrates could have reached the Walanae area. The question of an overseas dispersal of, for example, *Geochelone (Testudo)* was touched on by Hooijer (1948 b), but remained controversial, and would later lead to vigorous debates with, for example, Sondaar (1981; Hooijer 1982). The question of land bridges is important, however, given the extraordinary geographical position of the island Sulawesi.

²⁴ Van Heekeren had made plans to take a geologist or a soil specialist (Ir. W.F. van Beers) with him into the field. Unfortunately, nothing came of this, as can be read in various letters, and also in the „Oudheidkundig Verslag 1949“ (Bandung, 1950), p. 17.

In 1869 the two-volume work about the Malay archipelago by the British naturalist Alfred Russel Wallace appeared, a work which even today is still well worth reading²⁵. In it one can trace many direct and indirect references to what Wallace considered to be a zoogeographic barrier right through island Southeast Asia (explained for the first time in a paper in 1860), namely between Bali and Lombok, and continuing north between Sulawesi and Kalimantan (Borneo). This barrier is known in the biological literature as Wallace's Line: to the west of it should be a region with an Asiatic or oriental fauna, to the east of it a region with an Australian fauna with nonplacental mammals such as marsupials and monotremes. At least one nineteenth century scientist became so excited by Wallace's ideas that according to him, once one passed the Lombok Strait one passed from the present to the Mesozoic²⁶. The Line turned out to be too rigorously drawn, however: the Sarasins (1905), for example, had already distanced themselves from Wallace's proposition by remarking that the present day fauna of Sulawesi is a mixed fauna with Asiatic and Australian elements in which the former even outnumber the latter²⁷. Therefore, other Lines have been drawn which place the border between the Asiatic and the Australian faunas further to the east (e. g. Slater's Line, Lydekker's Line, etc.; see e. g. Mayr 1945, Simpson 1977). What they all have in common is that they place Sulawesi in the oriental fauna region, or else in a transitional region, often called Wallacea, which lies between former Sunda and Sahulland (Bellwood 1985, fig. opp. p.1). Fossil oriental vertebrates are then not an enigma in Sulawesi.

How did the fossil fauna of Beru and Sompe reach southern Sulawesi? Long-lost land bridges might be postulated: *Celebochoerus*, for example, is surely the product of a long and independent development. In this view southern Sulawesi has been an island for a long time, where vertebrate species, without significant competitors and predators, were able to develop in isolation (endemic fauna). One of the most spectacular, but here not yet mentioned fossils found by Van Heekeren at Beru and Sompe would fit perfectly into this picture: *Archidiskodon celebensis* (now called: *Elephas celebensis*). This proboscidean species was presented by Hooijer in a paper in the spring of 1949, based on molar fragments and portions of limb bones. It appeared to be a pygmy elephant with a height of over one and a half to two meters, with (as later finds would show) a few archaic features such as occasional mandibular tusks, functional premolars, and ante-orbital foramina. Hooijer (1949a) regarded *Elephas celebensis* as a stranded descendant of *Elephas planifrons*, which had a wide distribution in eastern Asia in the Lower Pleistocene. (Later, Hooijer (1955a) would change his mind and hypothesize on an as yet unknown mastodontoid elephant as ancestor; however, after what he called „the epoch-making studies of Maglio“ (1973), Hooijer (1975, p. 38) returned to his original idea and regarded *Elephas celebensis* as a fifty percent scale reduction and a direct descendant of *Elephas planifrons*, the primitive aspects of the former being the result of paedomorphosis (dwarfing).

Accepting that a former land bridge became essential as an explanation for the existence of the fossil fauna of Beru and Sompe (which in the literature slowly became known as the *Archidiskodon-Celebochoerus* fauna), Hooijer (1949a) suggested that *Elephas planifrons* must have come from the Asiatic mainland via

²⁵ The volumes were dedicated to Charles Darwin who had published his famous *Origin of Species* ten years before, in 1859. As Wallace wrote: „... not only as a token of personal esteem and friendship but also to express my deep admiration for his genius and his works.“ It is well known that Wallace nearly beat Darwin to the publication of a theory of evolution; Wallace is now regarded as the „co-discoverer of the Darwinian evolution“.

²⁶ Quotation from Ernst Haeckel in his Introduction to Semon's „Zoologische Forschungsreisen in Australien und dem Malayischen Archipel“, 1893.

²⁷ It should be remarked, though, that Wallace's original ideas (1860) were rather rigidly interpreted by Thomas Huxley (1868). It was in fact Huxley who invented the term Wallace's Line.

the Philippines to southern Sulawesi²⁸. In a later insular environment it then developed (with a marked diminution in size) into *Elephas celebensis*. According to Van Bemmelen (1949) as well, who consulted with Hooijer, a Philippine land bridge was the only possible one: sea lanes prevented the migration of large land vertebrates from Java directly to Sulawesi in the Pliocene and Pleistocene. Therefore, Hooijer was looking for the remains of *Elephas planifrons* among the batches of fossils which Van Heekeren sent him. He wanted to bolster his theory. But the larger elephant apparently eluded Hooijer²⁹.

What he did find, however, were some fragmentary remains of another proboscidean, a stegodont; for the time being described as *Stegodon* spec. (Hooijer 1953). Stegodonts are rather numerous in the fossil faunas of eastern Asia; they are evident well into the Upper Pleistocene (and they have relevance for archaeologists: Allen 1991). It was much later before Hooijer (1964, 1972) succeeded in splitting up the fossil stegodont material from the Walanae valley into a pygmy form, *Stegodon sompoensis*³⁰, and a normal sized *Stegodon* cf. *trigonocephalus*. Here, too, Hooijer took it for granted that the former had developed from the latter; a theory which could not be tested for the time being because stratigraphic control on the specimens was lacking.

Hooijer's preference for land bridges later culminated in his Stegoland concept, which he developed together with Audley-Charles in 1973 (Hooijer 1975, 1982; the name Stegoland actually came from Tom Harrisson, the well-known excavator of the Niah caves on the island of Borneo). Hooijer assumed that sometime in the Pleistocene, the islands of Sulawesi, Flores and Timor, where fossil stegodonts have been found, had been connected to each other, together forming Stegoland, so that for example *Stegodon sompoensis*, „the smallest and highest-crowned *Stegodon* ever“, formed „one interbreeding population“ on the three islands (Hooijer 1975, p. 43). The Stegoland concept was not taken very seriously in palaeontological circles, however. It revived reminiscences of the old Flores land bridge suggested by the Sarasins, which was later refuted by the geologists (e. g. by Van Bemmelen 1949). The Stegoland concept failed to explain the absence of *Celebochoerus* on Flores and Timor in a convincing way. In the last years of his life Hooijer showed himself ready to listen to alternative hypotheses to his land bridge ideas. He pondered the possibility of an overseas dispersal of the poor, endemic fossil fauna from the Walanae, as advocated by, for example, Sondaar *c.s.* (most recently in Van den Bergh *et al.*, 1994). For Hooijer it all centred on the question of how far an elephant or stegodont could swim and thus was able to traverse the erstwhile sea straits.

In the early years, while he was busy putting together a picture of the *Archidiskodon-Celebochoerus* fauna from southern Sulawesi, Hooijer, seated at his quiet desk in Leiden, and far from the madding field, had no difficulty with Van Heekeren's pronouncement that the fossils and the artifacts had eroded from one

²⁸ Hooijer was still toying with this idea in 1975, p. 40. See References. Different ideas were then voiced by Groves (1976, 1985).

²⁹ For this reason reports such as the one on p. 17 of the „Oudheidkundig Verslag 1949“ which speaks of the discovery of an *Elephas* in southern Sulawesi, which must be a great deal larger than *Elephas celebensis*, appear to be incorrect. This announcement is probably the result of a letter from Hooijer to Van Heekeren, dated 1 November 1949, in which he says that he has found the fossil remains of an elephant larger than *Elephas celebensis* (in those days still called *Archidiskodon celebensis*) in the shipments from Sulawesi. However, he also says that the material is exceptionally difficult to interpret because it is so fragmentary. At any rate Hooijer has never published anything about large true elephants (not to be confused with stegodonts!) from southern Sulawesi. At present the problem is again receiving attention because of a paper by Van den Bergh *et al.* (1994) which reports the find of a molar fragment from a larger elephant from the Tanrung area, east of Beru. It is an area which Van Heekeren never investigated, and from where Hooijer never saw any fossils (with the exception of the enigmatic cranial portion of *Sus celebensis*; Hooijer 1969). The Tanrung area might well yield Upper Pleistocene vertebrate fossils (see also Bartstra *et al.* 1994).

³⁰ After the fossil locality of Sompe. See Note 21.

and the same conglomeratic sandstone unit, and that the artifacts had probably to be dated to the Upper Middle or Lower Upper Pleistocene. After all, if the original fauna had reached southern Sulawesi sometime in the Basal Pleistocene, then time was needed to develop into an endemic and impoverished insular fauna with giant tortoises and pygmy elephants, the picture of which slowly began to emerge from the fossil collections of Beru and Sompe.

Noteworthy is the contrast in these early years between the profusion of details from Hooijer about the fossils, and the scanty descriptions of the artifacts from Van Heekeren. In his regular correspondence with Van Heekeren (begun in the autumn of 1948, when Van Heekeren came back to Sulawesi after his leave in the Netherlands), in which Hooijer enthusiastically tells of his own progress, we often find him asking how the analysis of the artifacts is coming along³¹. However, except for a few lines about patinated yellow chalcedony and red jasper flakes in Clacton style (with an obtuse (high) flaking angle and a non-faceted striking platform: so-called plain flakes³²), only some drawings of these flakes exist in the official literature (Fig. 4), as well as some photographs, as if the writer did not know what to do with the material and therefore left it to the reader to form his own opinion (e. g. Van Heekeren 1949c and d, 1950a (with photographs: 24-26) etc., up to Van Heekeren 1972).

This imbalance in the attention paid to the fossils on the one hand and the artifacts on the other, can be explained by the different personalities of Van Heekeren and Hooijer. Van Heekeren was a typical field worker: he was not particularly fond of writing. In addition there were the different professions they were in, each with its own code of conduct, the different educations they had had (the one a learned amateur, the other an academic professional), and the different positions they had over the years: the one roaming through unknown (and dangerous) fields, the other behind a desk. But there was more to it than that. Van Heekeren was a typical exponent of a lineage of western prehistorians working in Southeast Asia who, as Bowdler (1992), for example, has remarked, were hampered by results somewhat below standards achieved elsewhere and by a hesitation to publish these results. Others have levelled similar criticism at Southeast Asian prehistorians (Klein 1992). Pope and Keates (1994) also delve into this, and they imply that part of the problem is psychological and illustrates the confusion felt by the researcher educated in Europe who is confronted with the unique and hard to interpret geological contexts of the puzzling, informal and scarce Palaeolithic assemblages of the East, to which modern analytical (statistical) methods will probably never be applicable. Pope and Keates (p. 558), with regard to the Palaeolithic in Southeast Asia, remain, therefore, decidedly in favour of „anecdotal information“, which according to them continues to be of value³³. Despite the non-quantitative information, colleagues at the end of the Forties could indeed work out very well what Van Heekeren meant with his Cabenge industry³⁴ from the Walanae valley of South Sulawesi.

³¹ Sometimes with veiled hints taken from letters from foreign researchers. In a letter to Van Heekeren dated 8 February 1949, Hooijer quotes Movius: „... it will be interesting when Van Heekeren writes up his report on the stone artifacts...“. But Movius also wrote to Van Heekeren directly: „Hooijer has sent me all the reprints of his reports on your new fauna, and now I will be looking forward to receiving one from you dealing with the archaeological material“ (Letter dated 28 March 1949).

³² Van Heekeren (e. g. 1972) does mention some flakes with a faceted striking platform (talon), but according to him these are non-Levalloisian.

³³ I agree with Pope and Keates, and must add that their view reflects a decidedly post-modernistic attitude! One should realise, however, that research on early man in island Southeast Asia has now taken a definite, quantitative turn, a process which in fact began with Itihara et al. 1985. If I may indulge in a little self-reflection, then I am probably the last of the anecdotal era.

³⁴ Formerly written as Tjabenge or Tjabengè industry.

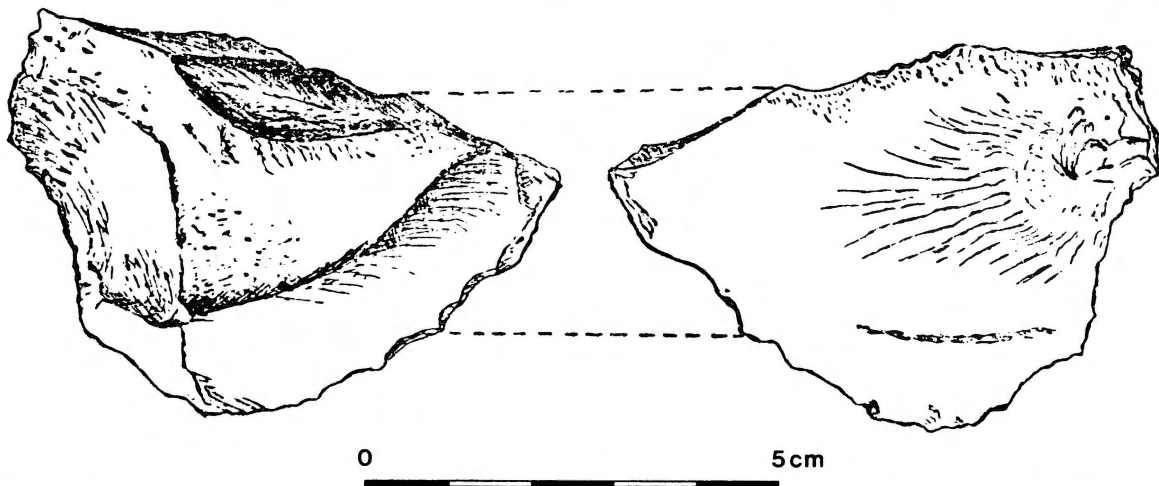


Fig. 4. One of the first artificially worked flakes from Beru to be depicted in the literature and described as a retouched scraper (Van Heekeren 1949c).

What is very interesting is the continual emphasis on the part of Van Heekeren on flakes. One is always being explicitly told that no cores had been discovered. Van Heekeren, therefore, preferred to speak about the Cabenge flake industry. In fact, however, there are a lot of cores and core tools at the various sites around Beru; it is only the places where Van Heekeren originally looked for them that yield virtually no cores. Nowadays, this intriguing distribution is being explained by the variation in former activities: the great core sites such as Kecce (Fig. 5-6) and Paroto, situated in the Pleistocene flood plain area of the Walanae, are to be understood as ateliers for the fabrication of implements (Keates and Bartstra 1994).

Accumulating evidence

Van Heekeren's correspondence contains a letter from Von Koenigswald dated 3 June 1948, inviting him to a meal. What is ominous is the complete lack of any further correspondence between the two in subsequent years. Von Koenigswald was angry and sad at having been so wilfully excluded from the fossil discoveries in Sulawesi, as his wife explained when relating the period several years later³⁵. The contacts between Van Heekeren and Hooijer, on the other hand, were steadily increasing: first verbally, while Van Heekeren was in the Netherlands during his leave, then in written form, after Van Heekeren's return to Indonesia, ending up as almost a regular fortnightly correspondence. Van Heekeren left the Netherlands in October 1948, but first went to East Africa for a short stay where he took part in the British East African Miocene Expedition. He met Louis Leakey, and was proud to have been permitted to hold the

³⁵ Pers. comm.; before the summer of 1948 the messages from Von Koenigswald to Van Heekeren were friendly enough, as appears from the first post-war letter, written at the American Museum of Natural History, New York, where Von Koenigswald was temporarily based, and in which he tells Van Heekeren about his war experiences (Letter dated 18 January, 1947).

newly discovered skull of *Proconsul africanus*. At the end of November 1948 he was back in Makassar (Ujung Pandang).

The year 1949 brought him a flurry of activities in the field. The start of these were complicated by a lack of transport. Buses to the interior were problematical and slow, and Van Heekeren often tried to travel with government officials on their business journeys. Only in April did he get the use of his own jeep, and he took immediate advantage of it by spending the whole of May doing surveys on the right bank of the Walanae between Beru and Sompe. He was trying to get to know more about the terrace system of the Walanae. As has been said, he thought that he was able to discern a succession of three river terraces and four sea terraces, which he also designated as two low terraces and five high terraces, and sometimes by using their relative heights, for example 25 m, 50 m, 75 m, etc. terraces. He differentiated the terraces on the basis of geomorphological features in the field: for example, a stepped slope in the road which led eastwards from Beru, and a summit level (as a former terrace level) of what he called „kopjes“ (hill tops) at the highest point. Van Heekeren did not go into his ideas about these terraces in great detail in his correspondence and articles in the first years of his research, so it is difficult to work out whether he had a series of pure bedrock terraces in mind (erosion terraces with a certain amount of fill on the lower levels), or whether with regard to the lowest surfaces he was also thinking of alluvial terraces, given the size of the Walanae river and the width of the present valley floor. It was only much later, apparently for the first time in an unpublished report from 1970(?), that Van Heekeren spoke emphatically about levels of aggradation terraces, but that was after the great Walanae expedition of the same year. What is certain is that he continued to view the outcrops of sandstone in the area as terrace sediment, and as the parent unit for fossils and artifacts.

One interesting result of the research along the Walanae river in the last two decades is that the importance of terrace sediments in the local stratigraphic section has steadily decreased. Although it is going too far to completely deny that there are older terrace fills in the area (Van den Bergh et al. 1994), such sediments are in fact only recognizable in unconsolidated gravel sheets on either side of the Walanae, with no traceable fixed heights. The sandstones mentioned by Van Heekeren in the original reports and letters have nothing to do with terrace sediments: they are much older, outcropping Walanae Formation layers. The vertebrate fossils erode from this Walanae Formation; the artifacts, on the other hand, come from the loose terrace gravels. The details of this stratigraphy are explained elsewhere (Bartstra et al. 1994).

The harvest of artifacts remained limited in the Forties, when compared to that of the fossils. This was not only because Van Heekeren, encouraged by Hooijer's enthusiasm, and looking for the bones of early man, paid more attention to the fossil localities. Small excavations in the so-called 50 m and 75 m terraces resulted in hardly any lithic implements; it was also impossible to conclude whether the artifacts, besides on the surface, were embedded in situ in the terrace fill. In other words, Van Heekeren could not produce any evidence to show that the artifacts did indeed come from the terrace deposits, of which the cemented sandstones were supposed to form part. Hallam Movius, with whom he was still fervently corresponding, continued to have difficulty with the stratigraphy and dating of the Cabenge industry. It is interesting that Movius (1949b), in a renowned publication, doesn't say a word about the finds from southern Sulawesi³⁶. In a letter to Van Heekeren³⁷, Movius laments „too bad that you have only found fifty artifacts to date“, and he continues mournfully that it would probably only ever be flakes, and that

³⁶ On the other hand, Movius was working on a German version of this publication (according to a letter from Hooijer to Van Heekeren dated 4 August 1950) in which the Sulawesi finds were going to be mentioned. Movius also mentions the Cabenge industry in his World History paper of 1955 (p. 529 ff.)

³⁷ Dated 20 October 1949.

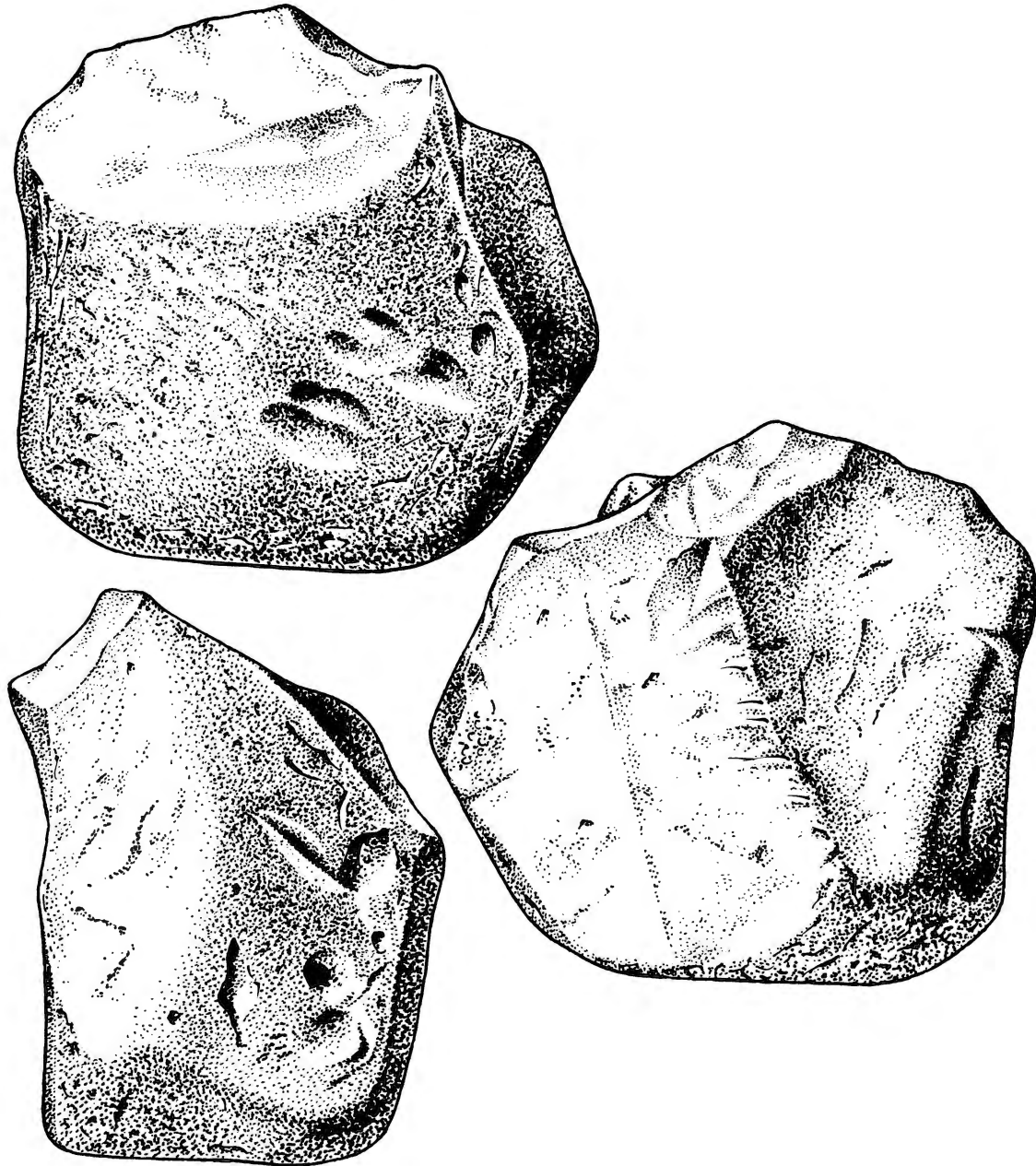
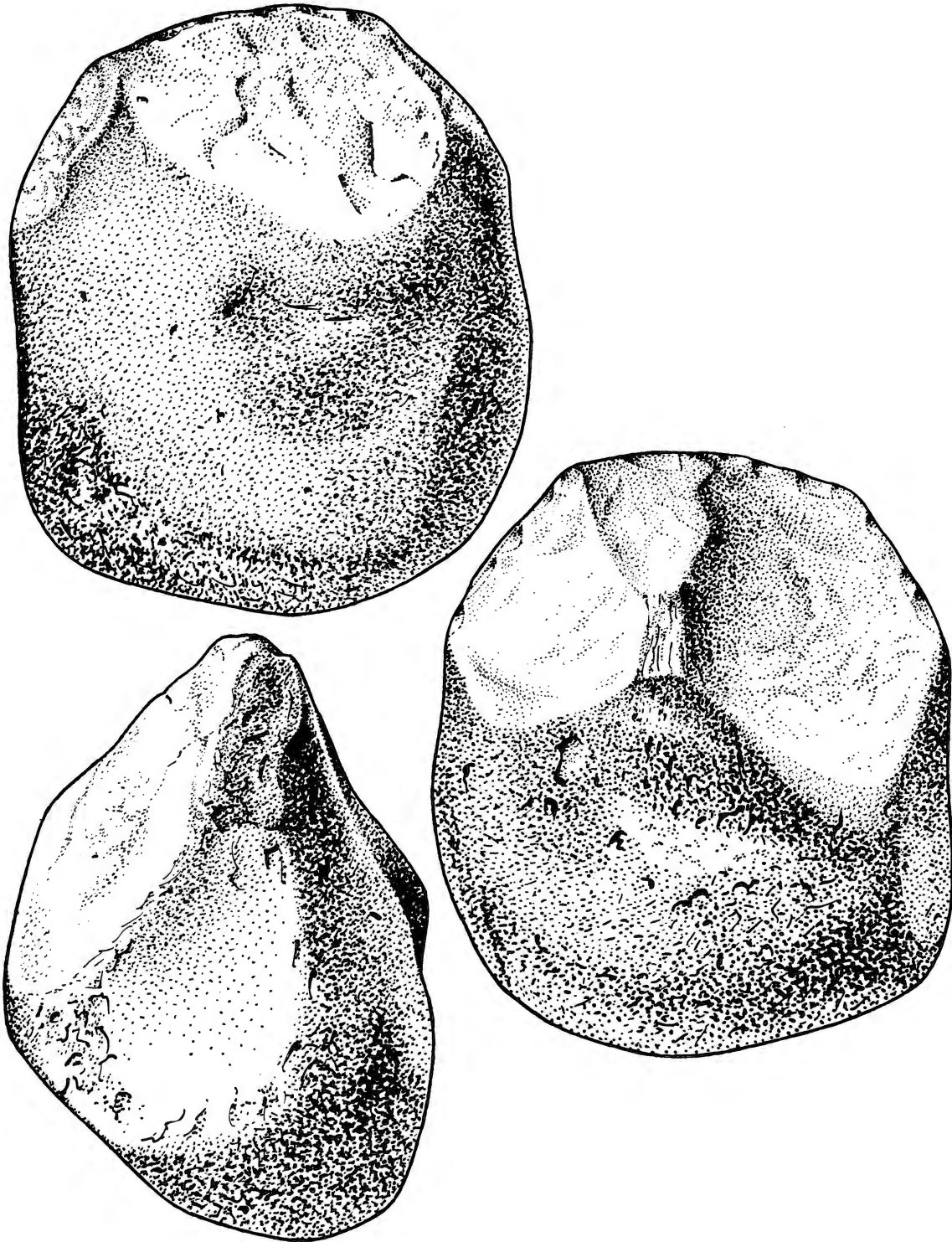


Fig. 5-6. The very first two larger pebble artifacts from the Walanae valley, found at Kecce in 1970. These have been described in more detail in Keates and Bartstra 1994 (as bifacial cobbles K70/1 and K70/2). From left above to right below: ventral and dorsal view; right side view left below. 1:1.



choppers and chopping-tools³⁸ would not be found. As has already been said, this latter remark by Movius did not come true; it does, however, explain Movius's reluctance to categorize the Cabenge industry among the so-called Lower Palaeolithic cultures of the Far East, and his provisional acceptance of Van Heekeren's statement that the Cabenge flakes were similar to the Sangiran flakes. In the same letter Movius also subtly remarks that if one was to extract a statement about the age of the flakes from this, then the Cabenge industry must be Upper Pleistocene and not (upper) Middle Pleistocene, as Van Heekeren often mentioned in his writings. After all, according to Movius, the implementiferous top gravels of western Sangiran are Upper Pleistocene³⁹. A good summary of Van Heekeren's ideas at the time can be found in an article in the monthly magazine *Chronica Naturae*, then published in Batavia (Jakarta) (Van Heekeren 1949e)⁴⁰.

Van Heekeren and Hooijer both desperately hoped that Pleistocene man would be discovered in Sulawesi. Van Heekeren strove to make Cabenge as important as Trinil, and Hooijer's answer to this was that it was a goal worth working for⁴¹. Because Van Heekeren, like Hooijer and Van Bemmelen, considered a former Philippine land bridge to be the most likely, he also had views about what he should be looking for: a modern version of Peking man. But Van Heekeren was also dreaming of the much older *Gigantopithecus*, stimulated by Weidenreich's (1945) book, which he had been able to get hold of. His trips with Leakey in East Africa had put him into the mood to search for fossil hominids along the Walanae and, especially after the May 1949 surveys, he sent dozens of teeth to Hooijer hoping that they would turn out to be important material. They were always the premolars and molars of *Celebochoerus* and *Sus*, however, which on cursory examination are not unlike those of the higher primates, „an example of convergence as an adaptation to an omnivorous diet“, as Colbert (1949, p. 111) used to say. Hooijer subsequently sent letters and drawings to Van Heekeren to focus his attention on the differences between the various teeth which could already be discerned in the field. There were also other useful pieces of advice. Hooijer urged Van Heekeren to send any hominid material directly to him in Leiden, without publishing the news. Because, said Hooijer, if the press forwards reports about the discovery of a fossil man in Sulawesi, then the government will undoubtedly step in and we will be pushed to the sidelines. It would be better to first study such a find thoroughly and scientifically.

At any rate, Van Heekeren's assiduous fossil hunting revealed another locality: Celeko, about eight kilometres north of Sompe (Fig. 3)⁴². Unfortunately, in the second half of 1949 he was unable to spend as much time in the Walanae valley as he would have liked because obligations elsewhere (Sumba and Central Sulawesi (Kalumpang)) kept him busy for months⁴³. This distressed Van Heekeren, because he had planned to carry out excavations in Beru and Sompe which were to be larger than his preliminary terrace test pits.

In the meantime, Hooijer continued to work on the fossil material. According to his letters, in 1949 he was busy with a new analysis of the *Celebochoerus* canines, which still made up a large part of the collections sent to him (a note appeared in 1950 (b)). Further, he was working on shark teeth from Sompe and Beru (1954 b), on shell fragments from small river turtles (1954 c), and on crocodilian remains (1954

³⁸ Terminology by Movius; see his publications from 1944 and 1949.

³⁹ An often debated question, though. Von Koenigswald (e. g. 1940, 1978) has always argued for a Middle Pleistocene date for the Sangiran flakes. See Note 10.

⁴⁰ An example of swift publication: the manuscript was sent to Hooijer for his assessment on 23 March 1949 (Hooijer (1949b) also supplied some additions); it was sent to *Chronica Naturae* on 9 April 1949; it was published in May 1949.

⁴¹ Letter from Van Heekeren to Hooijer dated 1 September 1948 (written in Heemstede, during his leave in the Netherlands), and Hooijer's reply dated 3 September 1948.

⁴² Previously written as Tjeleko or Tjelekoh.

⁴³ Van Heekeren 1950b and Van Heekeren 1950c, respectively.

d). In 1949, too, he came across the aforementioned *Stegodon* fragments (published in 1953), and he said that he was possibly on the trail of a pig which was neither *Celebochoerus* nor *Babyrousa*, nor *Sus celebensis*⁴⁴.

Because he was dealing with surface finds, Hooijer didn't have a problem with the shark teeth. There could be several fossil horizons from which the surface finds originated, confirmed by Hooijer's analysis of two different sandstone varieties. However, if in the end there should turn out to be only fossiliferous river terraces in Beru and Sompe (as was Van Heekeren's opinion) then Hooijer (1954 b) could state that certain types of sea sharks ascend big rivers, as can still be observed in Kalimantan and Irian Jaya today.

The end of an era

The curtain fell in 1950. Van Heekeren had to give up his hopes of returning to the cherished hunting grounds along the Walanae for seasons to come. At the beginning of the year he wrote a sombre letter to Hooijer from his office in Makassar (Ujung Pandang) telling him of the not very encouraging research prospects in an area with a rapidly worsening political situation. Even the safety of travellers outside the towns could no longer be guaranteed. Beru and Sompe and Celeko were very far away. Van Heekeren had to accept that the surveys he had carried out in May 1949 were likely to be the last for a very long time, and he looked back with resentment on the obligations which had prevented him continuing his fieldwork in the Walanae valley in the autumn of 1949. He was able to organize a few small excavations in caves in the Maros mountains, not too far from Makassar, in the early spring of 1950, though. This was the area where the Toalian had been found, and where Van Heekeren himself had excavated in previous years⁴⁵. In one of these caves (Leang Pattae) Van Heekeren's team discovered rock paintings for the first time, an archaeological success of no small significance⁴⁶. In March, however, the expedition had to be abandoned and the team had to make a dash for Makassar. Fighting had erupted everywhere between the supporters of the new state of Indonesia, groups which wanted to found an Islamic state, followers of the „ancien régime“, and ordinary bandits. Van Heekeren managed to survive in this chaos for another couple of months; in October he left Sulawesi and went to Jakarta.

In the meantime Hooijer had gone to America. He had given notice of his departure⁴⁷: a grant from the Rockefeller Foundation would enable him to spend one or two years studying vertebrate collections in various museums. Van Heekeren's predicament touched Hooijer deeply, though, and it was the latter's energetic actions, combined with efforts from Hallam Movius, which resulted in Van Heekeren being awarded a grant from the Viking Fund which would carry him over the first difficult months in Jakarta, and would give him time to collect data for two volumes on the prehistory of Indonesia („The Stone Age of Indonesia“ (1957) and „The Bronze-Iron Age of Indonesia“ (1958)). Hooijer was delighted to be able to do something for Van Heekeren because, as he later wrote, he owed his international reputation to the

⁴⁴ Letter from Hooijer to Van Heekeren dated 19 October 1949. This is a somewhat enigmatic message, because subsequent letters reveal nothing more about this line of investigation. The same message can be found on p.17 of the „Oudheidkundig Verslag 1949“ (Bandung 1950). It is probable that this mysterious pig suffered the same fate as the babirusa which was pretty soon excluded from the *Archidiskodon-Celebochoerus* fauna (Hooijer 1954a).

⁴⁵ See above, paragraph 2.

⁴⁶ These rock paintings, which included so-called hand-stencils and a contour drawing of a pig, were discovered by Mrs C.H.M. Palm (see Van Heekeren 1952). In the correspondence with Hooijer in subsequent months there was a great deal of speculation about whether the pig depicted was (a descendent of) *Celebochoerus*, or was *Babyrousa* or *Sus*.

⁴⁷ Letter from Hooijer to Van Heekeren dated 8 October 1949.

fossil fauna of Sulawesi and without it he would undoubtedly still have been busy sorting out the Dubois Collection, a profound scientific, but not very exciting task⁴⁸.

The most immediate result of the events of 1950 was a lessening of the correspondence between Hooijer and Van Heekeren. In subsequent years months would go by without a letter. The correspondence would never again achieve the frequency of the years 1948 and 1949. The letters also changed from excited discussions and dreams into reports about the everyday state of affairs. The lack of fieldwork and the absence of any new fossil material from Sulawesi became obvious. Sometimes nostalgia would suddenly erupt, as in a letter from Van Heekeren which he wrote to Hooijer after a trip to Flores in 1952. In it he said that everything was back to the way it had once been and that he had crossed the width of the island with three horses and thirteen bearers, over mountain ridges and through ravines, in sunshine and thunder storms, crossing swollen rivers and sleeping in bamboo huts⁴⁹. It is the nostalgia of the outdoor explorer, unfortunately shut away for the greater part of his time in a stuffy office in Jakarta. Van Heekeren had found a temporary job as curator of the Prehistoric Department of the National Museum.

The two decades after 1950, without the input of new material, were scientifically characterized by a broadening and deepening of the knowledge about the fossils and artifacts which had been able to be brought out from Sulawesi. Also, the wider framework of fauna and industry was reconnoitred. Hooijer, who had returned to the Netherlands at the end of 1951, threw himself with renewed energy into studying the elephants and stegodonts, and of course into that completely new element in the Asiatic fauna: old, trusty *Celebochoerus heekereni*. He was also working on a summary of the Walanae fossils (Hooijer 1955b). Van Heekeren, steadily collecting the material for the books promised to the Viking Fund, prepared a short congress paper about the archaeology of the Walanae valley (Eighth Pacific Science Congress, held in the Philippines in 1953), and produced a guidebook for the prehistoric section of the National Museum in Jakarta (1955). In the end he too had to join the general exodus of Dutch people from Indonesia: in 1956 Van Heekeren left for the Netherlands.

He settled in Haarlem, close to where Hooijer lived in Leiden, and together they laid their plans for a return to the Walanae valley, after the wars in Sulawesi had ended and political tensions between Indonesia and the Netherlands had hopefully eased. But many years were to go by before this opportunity came about: only in 1970 was the important Joint Indonesian-Dutch Sulawesi Prehistoric Expedition able to go ahead, and both Van Heekeren and Hooijer of course took part⁵⁰. The expedition resulted in a host of new data about fossils and artifacts. The details have been described elsewhere (Bartstra *et al.* 1994)⁵¹.

The remains of *Homo erectus* were not found in the Walanae area by the 1970 expedition either. One can now be certain that they will never be found among the vertebrate fragments eroding from the Walane Formation. The vertebrate-bearing top part of this unit dates to the Upper Pliocene, and thus from a time when man had not yet entered the eastern Indonesian archipelago. Man only came to this region in the Upper Pleistocene, and the tools which lie scattered in the hills flanking the Walanae river are witness to

⁴⁸ Idem dated 18 January 1951. See Note 15.

⁴⁹ Letter from Van Heekeren to Hooijer dated 25 June 1952. Van Heekeren's adventures on Flores are described in „De onderste steen boven“, 1969, p. 119 ff.

⁵⁰ In fact, Van Heekeren had already paid a short reconnaissance visit to Beru and Sompe in March 1968.

⁵¹ A third member of this expedition in a leading role was R.P. Soejono, Van Heekeren's erstwhile student, who became head of the Prehistoric Department of the Archaeological Service of Indonesia after Van Heekeren's return to the Netherlands. During the Eighties, Soejono became director of the entire Service. He has now retired.

this occupation. Unfortunately, the loose implementiferous terrace gravels do not contain any autochthonous remains of vertebrates. Yet there may be some hope of finding the bones of Upper Pleistocene man. In recent years some fossils have been located which do not seem to fit into the classic picture of the impoverished, endemic Walanae fauna (Van den Bergh et al. 1994; Bartstra *et al.* 1994)⁵². This could mean that truly Upper Pleistocene beds await discovery, and that not all eventful days lie in the past.

Acknowledgements

The above story could not have been written if I had not had the opportunity to browse through the erstwhile correspondence (in Dutch) between Van Heekeren and Hooijer. I owe this opportunity to Mrs Marga C. Kerkhoven, who also read the first draft of this paper. She is able to comment on this text because she was so closely involved in the exciting events at the end of the Forties: the arrival of the first batches of fossils in Leiden. As Hooijer's wife at the time, Mrs Kerkhoven shared his euphoria about the scientific opportunity which fell to his part. Furthermore, I am indebted to Dr C.H.M. Nooy-Palm, who discovered the rock paintings in the Maros area mentioned above. She often accompanied Van Heekeren on his journeys in southern Sulawesi, and can still vividly remember many details. She, too, commented on the above text. I would also like to thank Dr H. Veenstra and Dr J. Harvey for their suggestions and improvements with regard to the text and the layout. Finally, I wish to mention Drs B. Kallupa of the Archaeological Service in Ujung Pandang, who was a student on the Joint Indonesian-Dutch Sulawesi Prehistoric Expedition, as I was, and who is thus one of the few who remembers Van Heekeren and Hooijer as they were in 1970, when for the first time they were able to explore the hills along the Walanae together, searching for their beloved artifacts and fossils.

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⁵² See Note 29, second part.

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