Archaeological Space and Time along the Lower Orange River and Coast: Narratives of Gudrun Corvinus

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Introduction

Archaeologists, paleontologists, geologists and other geo-scientists often collaborate.[1] A better interpretation of the archaeological record arises from the combination of their individual training and methodologies.[2] In addition to their shared focus on patterns of sedimentation, geological and geomorphological formations, excavations and dating, amongst others, is their common perception of the scale of time and space. Time for these researchers may encompass several hundred thousand years, but can extend into *deep time*, for instance, relating to the formation of the planet Earth. Their measure of geological space begins at the earth's surface but can reach depths far beyond it. Sharing the same theoretical bases, commercial mines apply data from transdisciplinary geo-scientific projects to guide their search for minerals and precious metals more precisely. Few archaeologists combine training of several geo-sciences. A rare exception is Gudrun Corvinus (1931–2006). An ideal candidate to undertake archaeological and palaeontological dating in a mine setting, she became employed by the Consolidated Diamond Mines of South West Africa (CDM) in the southern Namib Desert in 1976.

Mining in Africa is, of course, extremely exploitative, environmentally destructive and – being a commercial industry – profit-bound. This situation has been somewhat alleviated by the introduction of protective environmental legislation and the emergence of a corporate moral responsibility towards the surrounding communities impacted by mining activities. Paradoxically, though, much archaeological and palaeontological material would have remained buried, had it not been for the use of over-sized mining machinery. Mining operations uncover more metres of deposit than any archaeologist, with even unlimited financial and practical support, could ever do in many lifetimes.

1 Acknowledgements: For the late nights and all the answers to the many questions, IT and otherwise, Robert, thanks a million. Isis, for your comments and enthusiasm, merci. BAB for letting me present Gudrun's work and life, I appreciate it. And all the others who I am not mentioning by name: thank you for your support!

2 Vujičić, Vasiljević et al. 2018: 333–343; Cohen 1998: 84–92.

Gudrun Corvinus' research, during less than four years, resulted in a wealth of invaluable finds. Based in Oranjemund and working in the Sperrgebiet, she discovered palaeontological sites dating from the mid-Miocene and numerous locations of hominin habitation from the early to mid-Pleistocene and younger.[3] The present paper engages with these finds historiographically, considering how they inform space along the Lower Orange River at the time. [4] Discussing academic concerns relating to her material, I argue that despite these, its role as a singular contribution to Namibian heritage warrants re-engagement.

Final CDM reports are omitted as sources due to access issues. Used here, are the academic publications of her finds, drafts or working copies of quarterly mine reports, private diaries and personal letters.[5] As part of her estate, these private recordings help fill in gaps for the present discussion. Additionally, they lend a personal tone, that makes this more of a narrative on space and time, rather than a solely academic analysis.

The first section of the paper comments on the spatial distribution of human habitation sites and their cartographic presentation. As her site recording provides certain challenges, a transfer into the present is suggested. This is followed by a consideration of three sites on which Corvinus and her team worked, contrasting the difference in location and age. With her excavation of *Arrisdrift*, Gudrun Corvinus illustrates the faunal diversity at the mouth of the ancient Orange River some 12 million years ago (12mya).[6] From stone material collected at *Gemsbok*, she documents the Acheulian Earlier Stone Age (ESA)[7] and increasingly younger industries at the coast.[8] *Obib* intrigues her for questions it raises regarding its repeated use from ESA into the present. Here, she ponders the behaviour of early hominins who left evidence of their presence at the site, and reflects the mobility of groups over the ages, long before any commercial demarcations had been set.

Most excavated finds presently discussed are much older than 2,000 years. Younger material has often been manipulated by scientists to promote pro-Western philosophies and by politicians to support their pro-colonial agenda. Thankfully, much of the present archaeological and palaeontological material reaches so far back in time, rendering ethno-centric Western interpretations invalid. The Lower Orange River as a location

3 Miocene: 23.03-5.33mya; the Pleistocene: 2.58mya-11,700ya; Holocene: 117,000ya until present.

4 I am using the English version of 'Orange River', instead of the Afrikaans *Gariep* or the original Khoekhoegowab !*Garib*. The second version prefers one southern African language above another, while the third version might seem visually difficult for the average reader.

5 The collection of her Namibian excavated material is divided between the Iziko Museum, Cape Town and the National Museum of Namibia, Windhoek, with some remnants in the Geological Surveys, also in Windhoek and the University of Cologne. The documentation of her finds is in the form of mine reports, held in protected storage. The lithic material in Windhoek was partially organised by the author in 2018/2019 and analysed by Dr. Isis Mesfin. Most photographic material and many private notes have been donated to the Basler Afrika Bibliographien. This process is ongoing.

6 Corvinus and Hendey 1978

7 Early, Middle and Late Stone Age (ESA, MSA and LSA) describe stages of increasing technological complexity of stone artefacts. The regionally variable range of technologies consist of giant cores and large flakes to ever smaller, more complex and multifaceted tools. See list of abbreviations in Appendix for Corvinus' assigning of dates to each stone industry.

8 Schneider 2011: pp. 6–8

plays an important role in the attempt to establish a continuum of human presence over time. Considering these finds within narrow theoretical and local political confines, instead of within a world-wide context, does a serious injustice to this valuable heritage that should be ethically and scientifically preserved.

The diamond mine, CDM, and Gudrun Corvinus

Diamonds were formed under processes of extreme temperature and pressure over 2.5 billion years ago (bya). This ancient time is called the Archean Age, when continents were only beginning to form. Spatially, diamonds are lodged below archaic cratons – the first parts of the earth's crust that stabilised. Diamonds are rarely transported to the earth's surface by Kimberlite dykes from depths of some 200km inside the earth's interior mantle. When they do, they reach the earth's surface together with other debris. Once on the earth's surface, they are eroded away and re-deposited.

The Kaapvaal Craton, more than 2.5 billion years old (by) and expanding over much of the sub-continent east of Namibia, originally held Namibia's alluvial diamonds. Having surfaced in today's provinces of the Northern Cape and the Gauteng, they were transported westward by ancient river systems, one of which being the Orange River system. Over the course of millions of years, diamonds were deposited along the way, or together with other river sediment material, accumulated at the river mouth. The largest and hardest finally reached the Atlantic Ocean. Captured by ocean currents and carried northwest along the coast, they continued to be re-deposited and eroded in a continuous cycle. [9] As climate and tectonic changes took place, the location of the diamondiferous layers shifted. Six distinct terraces of differing ages are presently recognised, Beaches A to F.[10]

Diamonds were first discovered in the then central Transvaal in 1866, with the famous Hopetown find.[11] It took 42 years for them to be stumbled up on 1,000km further westwards and downstream in southern Namibia (then German South West Africa). In April 1908, Peter Zacharias Lewala's find set off a diamond rush to the desert around the main coastal town of Lüderitzbucht. The German colonial government quickly reacted to this surprising source of wealth in its colony that it had until then considered 'a worthless sandpit.'[12] It sent its colonial envoy, Dr. Berhard Dernberg, to verify the claims. He subsequently declared 26,000km^2 a restricted area on 22 September 1908. Henceforth, the area has been known by its name: the *Sperrgebiet*.[13]

9 Schneider 2011: pp. 6–8

10 Corvinus 1983: p. 4

11 See Janse 1995: p. 231ff for controversies surrounding the find.

12 Schneider 2011: p. 12

13 Schneider and Walmsley 2004 pp: 23–32; This virtual monopolistic commercial ownership of the Sperrgebiet continues since 1908, despite it having been declared a national park in 2004, 14 years after Namibian independence. It raises the question as to whether this reflects outdated principles of colonial entitlement, running contrary to contemporary debates on decolonisation and repatriation.

A monopoly was hereby established, making the *Deutsche Kolonial Gesellschaft* (and its corporate financial backing in the motherland) the main diamond producer. Initially, surface finds were small,[14] but ever bigger, gem-quality diamonds have since been very profitably mined, by increasingly deeper and ever more extensive exploration after World War 1.[15]

After the war, CDM was created for the purpose of unifying the various individual and corporate claims in the Sperrgebiet under one corporate flag. Harry Oppenheimer was to play a central role in this. He had previously founded his own company: Anglo American Company of South Africa. By 1920, CDM was in place and bought 21% shares in Anglo-American.[16] Once Harry Oppenheimer became chairperson of CDM, as well as chairperson of the former Cecil John Rhodes-owned De Beers, it became possible for him to combine the companies in a manner most profitable. De Beers bought CDM from his own Anglo-American in 1930. From this point onwards, De Beers/CDM combined would solely control diamond mining in Namibia for the next 60 years. Following Namibian independence in March 1990, the new government negotiated a 50% share from De Beers, with an agreement signed on 24 November 1994.[17] In the years between 1977 and 1985 – while Gudrun Corvinus worked there – somewhat of a decline in production occurred, dropping from 2 million carats annually to 1 million.[18]

Gudrun Corvinus was recruited by CDM, from Paris, in 1974. Trained in geology, palaeontology and archaeology, she finally arrived at Oranjemund in 1976 at the age of 45 – both experienced and professional. She held a PhD (*cum laude*) from the Geology Department of Tübingen University in Germany (1957)[19] and had worked in the south of France, India and in eastern Ethiopia in the Afar region, famous for its prehistoric finds. She was also extremely well- and widely connected to prominent archaeologists and palaeontologists in Europe, India and Africa. Additionally, she had previously toured Namibia and knew of its Early Stone Age legacy.

Until her arrival, CDM had concentrated exploitation within a thin strip of coastline of only 3km in length to 1km in width, just north of Oranjemund, the very sand and gravel masses re-deposited by tidal action during the Pleistocene. Projecting that this coastal strip would soon be depleted,[20] new sources had to be found, hence the aim to explore the river terraces – the other location of diamonds deposits. While the age of origin of the diamonds themselves were known, the period of their deposition downriver was not. Corvinus was employed to date the river terraces by means of archaeological finds, then

14 Janse 1995: p. 243

15 Between 1908 and 1913 production amounted to 5 million carats, valued at 165 million *Reichsmark* at the time (approximately 993€ million in present-day value). Schneider 2011: p. 121.

16 Scheider 2011: p. 122ff

17 Schneider 2011: p. 258; Janse 1995: p. 244

18 Schneider 2011: p. 253

19 Her PhD explored 'The Biostratigraphy of the Upper Jurassic (Kimmeridge) at Mt. Crussol, Ardeche, France, in comparison with the Upper Jurassic of southern Germany' (her translation from German).

20 Mining areas northwards from the coast are given the names *Gemsbok*, *Uubvlei*, *Mittag*, *Kerbehoek*, *Affenrücken*, *Tafelberge*, *Chamais*, *Buntveldschuh*, *Bogenfels*, *Grillental*, *Pomona* and *Elisabethbucht*, before *Lüderitzbucht*.

correlate their age to the better researched raised beaches at the coast. While she succeeded in extending the dating of some raised beaches, by the time she left in 1980, she had not yet been able to date the river terraces.

An additional condition of her employment was the recording of every archaeological site encountered anywhere in the Sperrgebiet. The purpose of this instruction is not clear. It might have been related to the fact that in 1976, Namibia fell under the National Monuments Act 28 of 1969 (Section 12 / Subsection 3) of the Republic of South Africa and Namibia combined. The act states that any archaeological finds made during mining, engineering or agricultural activities should be immediately reported to the heritage authorities. Being an archaeologist, Corvinus took the latter instruction, possibly seeing it as a form of rescue archaeology, more seriously than the mine did[21]. While this approach might have led to the end of her career at CDM, it was beneficial for Namibian archaeology.[22]

To freely negotiate the vast space of about 26,000km^2 of the Sperrgebiet,[23] Corvinus was granted a special permit and a heavy double-declutch Land Rover. Her diary entries give insight into her time with CDM. On her first trip into the desert, '*Antonius, her assistant, seem(ed) to feel as hesitant as (I) she did*'. Of the handful of men assigned to her as helpers, Antonius can *'speak some German and thus understands (her).*' He is to be her constant companion, mostly for the sake of safety in a foreign vast desert terrain. A diary entry on 8 February, after their initial introduction and presumably a visit to his accommodation, comments on the '*barrenness of (their) dining area.*' Then, writing in the old German script – which served as a form of code for her more controversial thoughts – she notes the over-crowdedness of the living- conditions: *'ten to a room. It is not pleasant, as if one wants to exploit them.'* She privately questions his remuneration: *'if only Antonius now had a driver's licence that would have been of great help. But then they would have to pay him double.'*[24] After these short comments, a reaction to the dire employment conditions of rural Namibians at CDM, she seldom mentions him again – even though several photographs exist of him and the other 'helpers' (Figure 1). The kind of engagement with the local community – evident in her previous work in India, the Afar in Ethiopia and later in Nepal – seems to be lacking during her time at Oranjemund. This might be due to her being an employee at Oranjemund, instead of an employer. Another reason might have been the heavily restricted nature of the mine. However, it is Antonius' company, this possibility of freedom of movement within the mine, along with a special permit and appropriate vehicle, that makes the discovery of her numerous sites possible.

21 Mesfin et al. 2022

22 Ibid.

23 The *Sperrgebiet* comprises 3% of the total of Namibia's surface area of 800,000km^2. Only 5% of the *Sperrgebiet* is actually mined. The remaining 95% functions as a security zone. See also: Schneider 2011: p 29.

24 Corvinus 1976: Diary entry 8 February.

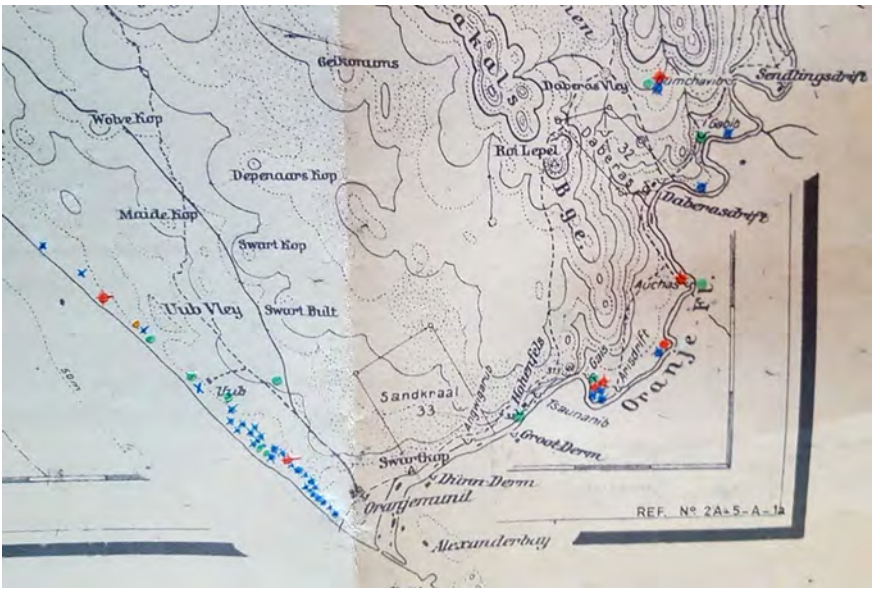
Fig. 1: Gudrun Corvinus and presumably Antonius. No reference was found as to the definite identity of her helper. Based on repeated photographs of the man in figure 1, the assumption is that he is, in fact, her constant helper and companion, Antonius. (Private Collection Ulla Mussngug).

Sites and their Recording

On leaving CDM, she writes *'I recorded all primary and secondary sites in the large mining plan of CDM, kept as a separate reference in the Geological Department of CDM in Oranjemund.'* Another copy is *'kept together with the archaeological collection and their catalogue, which is stored at*

the National Museum, Windhoek, Namibia.'[25] Neither of these two documents were accessible at the time of writing. Therefore, an excerpt of a map compiled for the 1979 meeting of the South African Association of Archaeologists at Stellenbosch is used and reproduced here (Figure 2). It reflects only a select number of sites, in line with the content of her presentation. Numerous sites beyond the river valley and the coast are mentioned in her notes but not mapped here. I use her hand-written copy for its historical value, as well as to illustrate her method of recording. From a site distribution point of view, it shows the spatial distribution of Early (ESA), Middle (MSA) and Late Stone Age (LSA), predictably strung along two axes: one along the river; and the other along the coast, possibly reflecting the availability of vital Pleistocene resources or prevailing corridors of movement.

Fig. 2: Excerpt from Corvinus' historical map of 1979 (Private Collection Ulla Mussngug). The extent shown here focuses on mining operations along the coast South of Uub Vley (Gemsbok). Sites along the Orange River in the East are on river terraces. Of particular interest in this text are the sites at Arrisdrift, Gemsbok and those in the Obib Mountains (Northwest of Gabib).



Again, without access to the original maps, it is probable that she used government Geological Survey maps. These were commonly deployed and utilised during the 1970s for any kind of work in the field. Since their normal scale of a 1:500,000 makes cartographic representation cumbersome under any circumstances, she must have had it reduced in the Geological Department at Oranjemund.

The following is an extract from her notes regarding an important site, namely *Auchas* Lower 2, which she referred to as 'the flaking sites.' Here, she plotted and then collected

25 Corvinus 1983: p. 3

1,878 pieces. In a draft of her final mine report of 1978, she writes: *'The plotted area includes the surface of pit1/AL5 and the flat sheetwash plain adjoining pit1/AL5 to the west, gullied by small erosional rills, as well as the cobble-covered slope of the terrace 1, remnant of Au.L 7.'* She justifies her plotting and collecting the material as a labour *'in order to preserve (it) before it may get destroyed by mining.'*[26] However, landmarks such as those used by her as points of reference are relative, while mining trenches are not permanent and are easily removed by heavy equipment or filled up in the process of reclamation.

The location of sites was done during the pre-Global Positioning System (GPS) years of the 1990s. Contemporary methods are more accurate and practical, allowing for immediate digital recording and subsequent mapping. A practical hand-held GPS receiver has an accuracy of up to 5–10m[27] and even less with certain special 'differential GPS' units.[28] Present-day archaeologists are thereby assisted in their surveying of sites, with satellite-based toolsets that not only include GPS receivers, but also various remote sensing capabilities.

Such sites that can still be identified should be recorded using GPS methods to bring her handwritten versions up to date. A first attempt at bridging the gap between 1970s and contemporary geographic software capabilities is made here, by my extrapolation of two areas from her original map (Figure 3 and Figure 4). This is an initial step towards a more scientific location and could be done with all her recorded sites.[29] The ultimate goal would be to have a relational database, coupled with an interactive GIS tool facilitating the recording in a format that allows present and future scientists to access and filter her data. This – being linked to a cartographic system – will allow spatial, temporal and management questions to be visually displayed. Initial examples of this can be seen in Figure 3 and 4. Such capabilities already reside within the Namib Desert Archaeological Survey, which has recorded more than 3,000 new sites.[30] Other institutions, such as the University of Cologne, in cooperation with the National Museum in Windhoek, have similarly set up portals that show the distribution of various features of Namibia.[31] The consolidation of her data under either platform would make it more acceptable and accessible to future scientists. Alternatively, due to quality concerns inherent in her data, a stand-alone database would be an alternative solution.

26 Corvinus 1976: p. 59

27 Deo, Sushama and Joglekar 2008/09; pp. 23–30

28 Hallinan: personal communication. 10 January 2022.

29 QGIS Development Team 2022

30 Kinahan and Kinahan 2010

31 Universität Köln 2003

Fig. 3: Detail from the current iteration of digitisation. Focus is on the Arrisdrift site Northeast of Oranjemund. Map by the author.

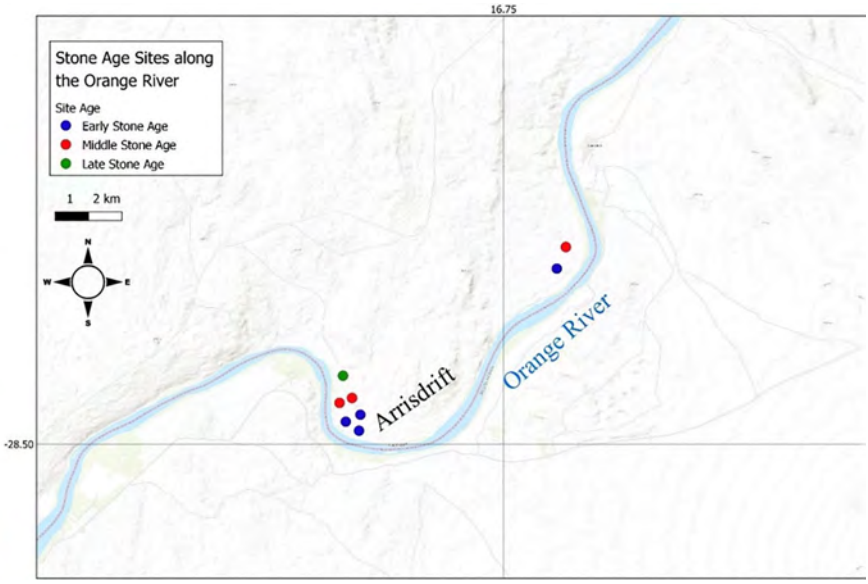
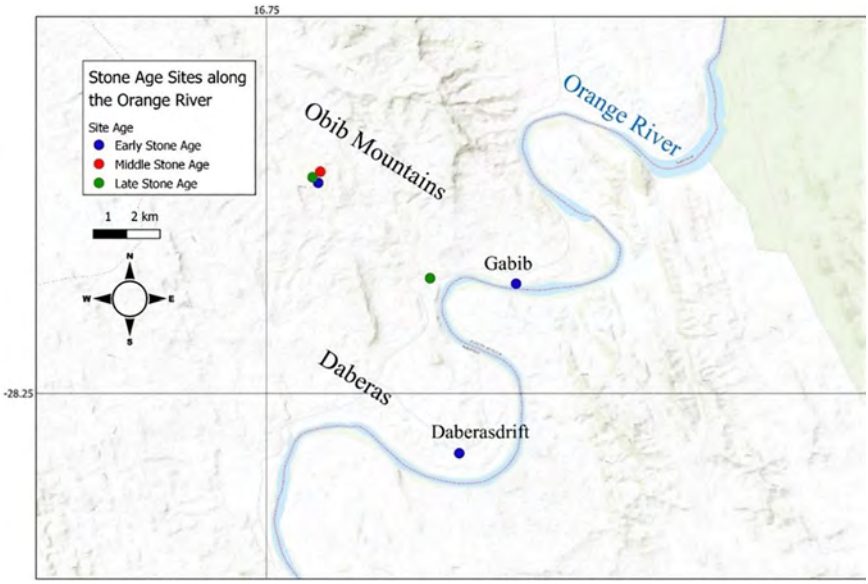


Fig. 4: Detail from the current iteration of digitisation. Focus is on the Obib sites Northeast of Oranjemund. Map by the author.



Arrisdrift

In compliance with her first employment instruction, Gudrun Corvinus begins working at the *Arrisdrift* geologists camp on 3 February 1976. *Arrisdrift* lies 30km inland, on the northern bank in the last meander of the Orange River before it flows into the sea (see Figures 2 and 3). At the time, 16 prospecting trenches (or drill lines) of 5x10m in width and up to 30m deep had been dug into the river gravels.[32] In one of these trenches, namely trench 8 within pit 2 (Ad8/2), numerous compacted bones protruded. Once a further 4m to 6m of sand was removed, it became apparent that they comprised an assemblage of bone sediment. She does a standard academic excavation of a few months each over the next two years. More than a thousand fossil bones are finally identified and dated by the South African Museum in Cape Town. The remains of 35 mostly extinct faunal species, of which 27 were mammals, are retrieved from only 20cm of hard conglomerate.[33] She then publishes the results with Q.B. Hendey.[34] AD8/2 transpires to be one of a few Miocene sites in Africa at the time and of only two in Namibia. It is dated at 12million years (my),[35] and at the time of publication represented the largest assemblage of Miocene vertebrates in a single locality in southern Africa.[36]

The publication primarily consists of a taxonomic list, for instance, noting two kinds of extinct elephants: a *Deinotherium* and a type of *Gomphotherium*. *Deinotherium* possessed one set of downward sloping tusks on the lower jaw, in comparison to the modern African elephant (Genus *Loxodonta*) with its single pair of upward sloping tusks on the upper jaw. *Gomphotherium* grew a set of tusks on both the lower and upper jaw. Another notable mammal turns out to be a giant *Hyrax,* three times the size of the present-day *Procavia capensis*. Being semi- aquatic[37] it lives close to the water, browsing more like an antelope[38] on riverine bushes and shrubs.

In addition to the herbivores, six species of carnivores were identified. The largest is the long extinct bear-dog or – to use her term – '*bear-wolf*' (Family *Amphicyonidae*),[39] so called because it exhibits characteristics of both these modern animals. The bear-wolf finds were the first in southern Africa. There were also some fragments of actual bear remains, an animal that has been extinct in southern Africa for the past 4my. Besides the macro-fauna, there were mice, snakes, hare, fish, frogs, tortoises, crocodiles and birds. The only invertebrate fossils were tube casts of marine sabelid polychaete worms from

32 Corvinus 1978: p. 3
33 Corvinus and Hendey 1978: p. 13
34 Ibid.
35 In a draft of her paper presented to the South African Association of Archaeologists at Stellenbosch in June 1979, she gives a date of 16–18 my: p. 3.
36 Corvinus and Hendey 1978: p. 13
37 Corvinus 1978: p. 202
38 Corvinus 1979: p. 8
39 Corvinus 1978: p.7; Corvinus and Hendey 1978.

the Family Serpulidae.[40] She, therefore, writes excitedly to a friend: '*I have found everything from an elephant to a worm*.'[41]

The mine, too, is happy about her find for a different reason: the layer just above bedrock happens to also be the diamondiferous layer. She had inadvertently dated the diamonds! The occasion is celebrated with a personal visit by the chairperson himself, Dr. Harry Oppenheimer of De Beers. Antonius and her other helpers are not mentioned in the celebrations. At least, I have as yet not found any reference to them.

In a less formal setting, she elaborates on two conclusions of the *Arrisdrift* remains: firstly, their implication for the paleo-environment of the Lower Orange River during the mid-Miocene; secondly, the absence of primate finds.[42]

Since the condition of the fossilised bones show no noticeable evidence of abrasion, she concludes that they originate from closeby the site. She visualises a drinking place to which the listed variety of animals would come, but also occasionally die. During a sudden strong flood wave, not unusual for the Orange River, the collection of bones was then deposited in a side channel of the original river, where they were buried by a thick layer of sand. Sealed in a manner devoid of oxygen and with a high calcium content, the bones, but not the floral material, were preserved. Consequently, reconstruction of the paleo-environment at AD8/2 in any detail is difficult. However, she assumes that, due to the large number of vertebrates (35 species in all) and their types (the semi-aquatic *Hyrax*, the wetland associated *Gomphotherium*), the climate was wetter, the vegetation denser, and the surroundings carried grassland and shrubland, 'a riverine woodland'. It supported many, not just grazing, but mostly browsing animals. It follows that sea-levels were higher.[43] This explains her private reference to having found even a '*worm*'. The serpulid polychaete worm is mostly found in marine environments, supporting the fact that due to a wetter geological period during the mid-Miocene, the sea level would have been higher. This would have placed *Arrisdrift* at the mouth of the river, compared to its present location 30km inland and 40m above sea level. Finally, this raises the question of when the Namib became a desert. Informally she suggests: '*towards the end of the Miocene*' and '*during the length of the Pliocene, 7 to 3mya*'.[44] Other Namib researchers maintain that this question is still being debated.[45]

The second point she raises is the absence of primate remains: the order of mammals of which monkeys, apes and we, ourselves, are members.[46] In comparison, by 1961 Louis Leakey had already found the 14my old *Kenyapithecus* at Fort Ternan in Kenya. At the time Namibia had two Miocene finds. One was *Otavipithecus namibiensis*,[47] in the centre of the

40 Corvinus 1979: p.13

41 Corvinus 1976; Since 1980, palaeontological research has been much extended, see e.g., Pickford and Senut 1999.

42 Corvinus 1979 : p. 13

43 Corvinus 1979 : p. 6

44 Corvinus 1979 : p. 10

45 See Pickford 2000: p. 413.

46 Corvinus 1978: p. 8

47 Pickford and Senut: 1999

country and dated almost exactly the time of Corvinus' AD8/2 find, namely between 14 and 12mya. The other is a skullcap so far only named 'Orange River' Man.[48]

Gemsbok

Gemsbok[49] is situated near the mouth of the river. In the heavily mined area, she finds '*rather unexpectedly an amazing amount of ESA site scatters…*'[50] One notable characteristic of the earlier ESA artefacts is that they are made on quartzite beach cobbles. She finds these quartzite-orientated Acheulian handaxes between south of the *Gemsbok* mining area and only as far as 30km north. They differ from other handaxes of later final Acheulian and earlier MSA occurring all along the coast,[51] including *Gemsbok,* that are made on silcrete. The latter are more widely spread, occurring even as far as *Obib* and Sendelingsdrift.[52] Stretching ever further northwards along the coast (Figure 2), she finds numerous MSA and LSA sites with increasingly complex and smaller methods of fabrication, which she dates, in relation, ever younger. The time sequence ends with shell middens of the Holocene. The latter she calls '*young*'[53] and privately assigns them to the '*Strandloper*' tradition of Holocene coastal dwellers[54], 2,000ya and even younger. Her voluminous lithic collection has been analysed as to its fabrication methods according to present-day laboratory techniques.[55] This proves that material that is over 40 years old, often collected *out of situ*, can be subjected to modern scientific scrutiny. Her own published interpretation of the archaeological data,[56] suggests a continuum of the existence of early man all along the coast.

Therefore, at *Gemsbok* we see the first signs of early humans in the area. They live at the river mouth more than 300,000ya[57] between the sea and a lagoon, presumably full of resources, certainly fresh water. This date falls within that of the 1mya, which John Kinahan gives as the length of time that the Namib Desert has been inhabited.[58] It also approaches that of the next oldest site, Namib IV, in the sand dunes of the central Namib Desert, dated at 400,000 to 700,000ya, on the basis of fossil remains of the extinct *Elephas recki*.[59] In the scientific literature, early ESA sites have become associated with *Homo erectus*: belonging to a wider group of bipedal dwellers on sites with a source of water, hunting rather big game with a well-established tool kit of initially big stone tools, and

48 Pickford and Senut: 1998
49 Corvinus 1983 : p. 10; Mesfin 2021.
50 Corvinus 1983 : p. 10
51 Corvinus 1983 : p. 11
52 Corvinus 1983 : p. 21
53 Corvinus 1983 : p. 81
54 Corvinus 1979: p. 15
55 Mesfin 2021
56 Corvinus 1983
57 Corvinus 1983: This is the initial date she gives. Elsewhere (p.86) she gives a date of 400,000 to 700,000ya. Mesfin et al.: 2022: p. 5 give a date of over 700,000ya.
58 Kinahan 2020: p. 26
59 Kinahan 2020: p. 52, quoting Deacon and Lancaster 1988: p 52; Owen-Smith 1992: p. 17.

at the coast scavenging on coastal resources. There is a scientific consensus that from 300,000ya onwards, ESA gives way to MSA, the latter exhibiting more complex and diverse tool kits. By 120,000ya these are associated with the existence of *Homo sapiens*,[60] direct ancestor to modern humans with a similar brain capacity and ability to solve complex tasks. The LSA and Holocene is associated with further advancement in stone technology and also rock art in south western Africa,[61] evidence of which Gudrun Corvinus finds at *Daberas*, away from the coast (see Figure 3). While we cannot assume a direct linear development of one specific group of people, her material suggests a sequence of human presence from the ESA to virtually the present day. The point is that evidence of this process of human evolution based on the progression in the production of stone tools, is to be found along the lower Orange River.

Obib

Relatively little can be said about *Obib* at present, except to illustrate Corvinus' enthusiasm for it. The widely scattered sites are situated to the south-east of the *Obib* Dunes (see Figure 2 and 4), above the Orange River valley. [62] Discovering it on 9 February 1976, only seven days after her arrival, she writes in her field diary: '*handaxe site on the edge of the Obib dunes on the right bank of a small stream which joins the Orange*'. She follows this later, by listing several concentrations of artefacts at *'Obib Dunes', 'Obib West', 'Main Obib Place'* and a *'Obib River-mouth LSA Site'* (Figure 6).[63] Within the wider site she '*finds ESA handaxes on the edge of the dunes; 'MSA point at 41m' made of quartzite,'* which seems not to be available in the immediate surroundings.[64] She notes: '*small place on a grey, colluvial covered flat hillock at the north side of the southern hill, west of the main Obib…cleavers, handaxes of the Acheulian (certainly brought in) and with LSA artefacts…'*, then *'…on the top of the dune…are some accumulations of stones. On one of them are ESA core(s) and flake(s), used again to take away flakes…'*[65] She did a one and a half hour / 6km walk '*from where ESA man brought his raw material namely, river cobbles of quartzite for making the tools of the Obib dune site.'* She finds graves and stone 'circles' or cairns (Figure 6). In typical 1970s fashion, she relegates these latter sites to the '*Bushmen*' phase associated with pottery and ostrich eggshell items, dated to anything from 2,000ya to '*maybe even younger than 100 years.'*[66] In line with the ethnicity-based identification of the times, she suggests that *'The latest people are pottery-using Bushmen, who migrated along the river on their way from the coast to the interior, establishing at one day intervals their camps near the river.'*[67]

60 Kinahan 2020, for instance.

61 Kinahan 2020

62 *Obib*, as used here, is a mine-appropriate name – and is not to be confused with the township of *Obib* at the Rosh Pinah Mine, to the east of and outside Sperrgebiet 1.

63 Corvinus 1976.

64 Corvinus 1976: Diary entry 4 December.

65 Corvinus 1977: Diary entry 12 January.

66 Corvinus 1979: p. 4

67 Corvinus 1979: p. 65

In her first mine report, she suggests that *Obib* should be investigated.[68] However, this does not feature in her monthly, mine-prescribed timetable. While she is not able to plot it, it continues to occupy her thoughts. She revisits it, photographs surface finds and collects a few select pieces.[69] Her enthusiastic descriptions sketch a site of a variety of early human activities: including longer habitation, repeated habitation, short-term stops, fabrication of stone tools, importing of raw material, and removing such raw material. She writes about many layers of occupation, from all Stone Ages up to the Holocene; super-imposed and intermixed, tools re-used. They start with ESA Acheulian handaxes and end with '*potsherds, an iron-washer, a thumb-nail scraper. Probably not older than 40 years.*' Regarding the importation of raw material, she asks herself: '*Where did early man find this material? Why did he bring it to this site?*' Considering its location, she wonders: '*Why did he walk so far? Why did he prefer the dunes to the Orange River valley to live?*'[70]

Her notes on and questions of *Obib* suggest a transit point, a gathering spot, possibly a resting place, a junction where social activities could have unfolded. *Obib* reflects mobility. It could well prove to be such a conduit, entry point and exit of early hominins into and out of the southern Namib Desert (Figure 5 and 6). It raises multiple questions that even today would be of crucial concern for archaeologists namely, questions of mobility, usage of space and migration to name a few.

Fig. 5: Obib Late Stone Age stone circle. Private Collection Ulla Mussngug.

68 Corvinus 1977: p. 55

69 Photographs of *Obib* found in her estate are located at BAB; the stone material is stored in the National Museum in Windhoek.

70 Corvinus 1977

Due to the climatic conditions, sites in the desert are known to remain undisturbed for thousands of years. Allowing for the cyclical covering and exposing by aeolian sands, they remain preserved over time. *Obib* also lies outside mine interests, a facilitating factor in the application of permission of access and work. Furthermore, it forms a link to sites and ultimately people, living beyond the artificial, commercial boundary of the Sperrgebiet, who might have a pre-historic narrative of their own. Given the proper financial backing, *Obib* may very well prove a site to be revisited and examined.

Fig. 6: Obib River mouth, Late Stone Age site. Private Collection Ulla Mussngug.

Conclusion

Corvinus exposed the prehistoric heritage of the Lower Orange River area in the four years that she was at CDM. She recorded innumerable sites, primarily along the river and coastline, but also inland. These point to a prolonged habitation of the area by both animals and humans. Two obvious reasons for the abundance of evidence might be: firstly, enhanced preservation due to the scant vegetation and desert climate; and secondly, the status of the Sperrgebiet as an area of prohibited public access since 1922. The use of diamond mining infrastructure and tools to expose fossils and artefacts from deep layers is an ironic exception to this isolation policy.

I contrast three sites in this chapter based on either their faunal or human presence. These are chosen for their spatial location and their temporal variability. They illustrate how her material may characterise the prehistoric conditions in the southern Namib Desert. The faunal material at *Arrisdrift* provides insight into the biodiversity and paleo-environmental riverine conditions during the mid-Miocene. This is contrasted with

the site's present location inland. Stone tool collections from the area mined at *Gemsbok* and northwards point to the presence of early humans from the early, middle Pleistocene (300,000ya) until the late Holocene (2,000ya). Gudrun's fascination with *Obib* is evident from her personal field diaries. Situated away from the river and outside mine activity, it covers a timespan from ESA to the present. It reads as a compelling site. If funding were secured, contemporary methods of archaeological excavation and analysis could be utilised here.

Obib raises the question of mobility of early human groups. In fact, Corvinus' diaries are replete with references such as '*obviously these people have arrived at the coast from the interior along the Orange River*.' Scientists admit to the river acting as a conduit from the interior of the sub-continent, as archaeological sites continue beyond and upriver.[71] It is generally accepted by researchers that *Homo erectus*, associated with the ESA, was widely mobile. Scientists admit that the hominins that lived in the centres of evolution were widely dispersed and inter-linked.[72]

Looking at *Obib* would direct our gaze beyond the arbitrary commercial boundaries of the Sperrgebiet, boundaries that were set up to satisfy the desire for luxury items. Local communities gained nothing from them. Also, connecting with the areas up-river will let us once again engage with people and their memories that have been banned from the Sperrgebiet for more than a century.[73] Further back in time, results from an excavation of *Obib* might provide clues to the life of hunter-gatherers and their mobility prior to mining and farming.

Many archaeologists consider her finds with caution. The coherence of her lithic material has been impacted by its distribution between different institutions, as well as the National Museum of Namibia moving several times. Records of her finds in the latter institute have been misplaced. Most pertinently, the Corvinus finds were collected under contractual conditions with the mine. Academic inquiry was not the purpose thereof, nor was it in the direct interest of the company. She therefore attempts to bridge the academic-corporate gap. Corvinus develops inventive techniques of correlating dump finds with trench stratigraphy or correlating the original sand matrix still sticking to artefacts with trench profiles.[74] Artefacts she excavates are marked with the location of the parent pit, trench, layer and/or depth. This allows her to associate dump-heap finds with the original trench layer.[75] This method of association allows for dating by previously dated geological layers. For some, this is an approximation and does not fulfil the criteria of inclusion in the larger pre-history narrative.

In defence of her own limitations, she points out that at the time in Namibia, there were no known sealed primary sites. Paradoxically their discovery would not have been made, had it not been for the mining activity.[76] While researchers have followed up on her

71 Morris 1995 in Smith 1995.

72 Kinahan 2020: p. 16

73 Wendt 1981

74 Mesfin et al. 2022

75 Mesfin et al. 2022

76 The prospecting mine trenches at *Arrisdrift* were up to 30m deep. Even after that, another 4 to 6m of sand had to be removed for her to get to her conglomerate of bone deposit.

work, I argue that her material has been unfairly overlooked. Modern methods of archaeological analysis include such technology as high resolution, multi-proxy environmental modelling; biological analysis; and genetic analysis, apart from the comparative wealth of data available at present in the form of a standard. In fact, her material is dated relatively by an inferred series of advances in the technological mastery of stone tool production, and not absolutely. Ultimately, for the present purpose of an illustration of habitation along the Lower Orange River, a laboratory analysis and absolute dating is not of prime significance.

Yet, at least the most important of her uncountable sites need to be located and recorded in a modernised scientific manner. Ideally, their precise locations need to be documented making them accessible to the scientific community in published form, such as the material from *Arrisdrift* and *Gemsbok*. New stone material needs to be stored scientifically, augmenting that already present in the State Museum in Windhoek (Figure 7). Some stone material was organised and once again centralised into the official laboratory by the author and laboratory staff in 2018 and 2019, once again allowing access to a more coherent block of material to researchers. It should be publicised, engaging both scientists and the local community. Local origin stories related to ancient stone tools might have their own versions. We are fast losing time for incorporating narratives of origin stories of residents upriver from the Sperrgebiet as part of the scientific knowledge base.

Fig. 7: One of the boxes containing stone artefacts from Obib in the State Museum in Windhoek. Photo by Ulla Mussgnug.

Any nation needs to know its (pre-) history. Few countries in the world can show the kind of time sequence of human evolution at their doorstep as Namibia can at the Lower Orange River. Gudrun Corvinus' material contributes towards this quest; we now need to fill in the gaps. As an important Namibian heritage, her material should be preserved before it might get lost, mismanaged, scattered or even appropriated.

Bibliography

Cohen, C (1998), *Charles Lyell and the evidences of the antiquity of man*. In Blundell, D.J. and A.C. Scott (eds.) *Lyell: the Past is the Key to the Present*, Geological Society, London, Special Publications, 143: 83–93

Corvinus, G. (1976), Letter to D: 12 February, Personal Collection Ulla Mussgnug (PCUM)

Corvinus, G. (1976), Letter to D: 10 March. Personal Collection Ulla Mussgnug (PCUM)

Corvinus, G. (1976), Diary, Personal Collection Ulla Mussgnug (PCUM)

Corvinus, G. (1976), Blue notebook, Personal Collection Ulla Mussgnug (PCUM)

Corvinus, G: Notebooks 1976 to 1977 and 1978 to 1980. Personal Archive Ulla Mussgnug (PAUM)

Corvinus, G. (1977), *Archaeological and Palaeontological Investigations of the Lower Orange River Valley in the Sperrgebiet 1 (Obib-Arrisdrift)*. The Consolidated Diamond Mines of SWA (Pty.) Ltd. Personal Collection Ulla Mussgnug (PCUM)

Corvinus, G. (1978), Draft article for OPTIMA, Personal Collection Ulla Mussgnug (PCUM).

Corvinus, G. (1979), Notes on an informal Presentation given at the Lüderitzbucht Museum, November, Personal Archive Ulla Mussgnug (PAUM)

Corvinus, G. (1979), Notes to last Interim Report for the mine. Personal Collection Ulla Mussgnug (PCUM)

Corvinus, G. (1983), *The Raised Beaches of the West Coast of South West Africa/Namibia Interpretation of their Archaeological and Palaeontological Data*. Munich: Verlag C.H. Beck, Munich.

Corvinus, G. and Q.B. Hendey (1978), A new Miocene vertebrate locality at Arrisdrift in South West Africa (Namibia). *New Journal of Geology and Palaeontology*, 4: 193–205.

Dea, D.G. and P.P. Joglekar (2008/2009), Use of GPS-Based Field Methods in Archaeology: An Introduction, *Bulletin of the Deccan College of Postgraduate and Research Institute*, 68/69: 23–30.

Janse, A.J. (1995), A History of Diamond Sources in Africa. Part I, *Gems and Gemology*, 31: 228–255

Kinahan, J: 2020: *Namib. The archaeology of an African desert.* University of Namibia Press, Windhoek

Kinahan, J and J.H.A. Kinahan (2010), Namib Desert Archaelogical Survey. *Antiquity*, 325(84).

Klein, R. (1999), *The Human Career; Human Biological and Cultural Origins*. Chicago : University of Chicago Press.

Mesfin, I. (2021), Les premiers peuplements du cordon littoral d'Afrique australe (1,2-0,5Ma) : analyse productionnelle et morpho-structurelle des industries lithiques, (PhD thesis, Institut de Paleontologie Humaine, Paris).

Mesfin, I., U. Mussgnug and E. Hallinan (2022), Southern African Stone Age archaeology and palaeontology in a mining context: the example of Gudrun Corvinus in the diamond mines of the Sperrgebiet, Namibia (1976–1980). *Azania: Archaeological Research in Africa*, 27(3): 365–391.

Morris, A. (1995), *The Einiqua: An Analysis of the Kakamas Skeletons*. In Smith. A.B (ed.), *Einiqualand; Studies of the Orange River Frontier*. UCT Press, Rondebosch: 110–164.

Pickford, M. (2000), Neogen and vertebrate biochronology of the Sperrgebiet and the Otavi Mountainland, Namibia, *Communications Geological Survey of Namibia*, 12: 359–365.

Pickford, M. and B. Senut (2000), *Geology and Palaeobiology of the Namib Desert Southwestern Africa*. Windhoek: Geological Survey of Namibia, Memoir 18.

QGIS Development Team (2022), QGIS Geographic Information System version 3.10, Open Source Geospatial Foundation Project. http://qgis.osgeo.org. Accessed 27 January 2023.

Smith. A.B. (ed.): 1995 *Einiqualand; Studies of the Orange River Frontier*, UCT Press, Rondebosch

Schneider, G: 2011 *Treasures of the Diamond Coast. A Century of Diamond Mining in Namibia*. Macmillan Education Namibia Publishers, Windhoek

Schneider, G. and Walmsley, B.: 2004 *The Sperrgebiet Land Use Plan – An Example of integrated Management of Natural Resources* in Communs. Geol.Surv. Namibia, 23–32

Universität Köln: 2003: Digitaler Atlas von Namibia: Land und Geschichte, https://www.uni-koeln.de/sfb389/e/e1/download/atlas_namibia/e1_download_land_history.htm

Wendt, E: 1981: *Die letzten Sammler und Jäger aus der südlichen Namib*, Afrikanischer Heimatkalender, Deutsche Evangelisch-Lutherische Kirche in Südwest Afrika, Windhoek, Namibia

Vujičić, M.D., Vasiljević, D.A., Hose, T.A., Tasić, N., Morar, C., Durić, A., Marković, S.B.: 2018 *A multi-criteria decision analysis with special reference to loess and archaeological sites in Serbia (Could geosciences and archaeology cohabitate?)*, Open Geosci., vol. 10: 333–343

List of Abbreviations:

AD8/2 Arrisdrift Trench 8 pit 2
CDM Consolidated Diamond Mines of South West Africa
ESA Early Stone Age (extrapolated from her notes ESA from around the date of Gemsbok until about 200,000ya)
MSA Middle Stone Age: (extrapolated from her notes: from approximately 200,000ya)
LSA Late Stone Age (extrapolated from her notes: the past 2,000y into the present)
GIS Geographic Information System
Mya Million years ago
Ya years