



SOUTH AFRICAN HERITAGE RESOURCES
AGENCY
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PO BOX 4637, CAPE TOWN, 8000
TEL: 021 462 4502 FAX: 021 462 4509

FOR OFFICIAL USE ONLY:

File No.:
Date received:
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Applicant:
Site / Object:

**APPLICATION FOR PERMIT:
HERITAGE OBJECTS**

(including export of archaeological and palaeontological material and meteorites)

Please note: Permit Applications expire one year after the date of receipt.

In terms of the National Heritage Resources Act of 1999 (Act No.25 of 1999), this application form must be completed by anyone applying for a permit to:

- (a) destroy, damage, disfigure or alter a heritage object or disperse a collection of heritage objects; or
- (b) carry out any work of restoration or repair of a heritage object; or
- (c) export a heritage object listed in the register of heritage objects held by SAHRA; or
- (d) export a type of heritage object as listed in the register of heritage objects and declared in the Government Gazette; or
- (e) trade in or sell for private gain:
 - (i) any category of wreck material or object; or
 - (ii) any other category of archaeological or palaeontological material or object; or
 - (iii) any meteorite.

Applicants are advised that without full details no permit may be issued.

A. APPLICANT'S DETAILS

1. Name and address of applicant* : DR ROMALA GOVENDER
IZIKO SOUTH AFRICAN MUSEUM
P.O. BOX 61
CAPE TOWN 8000

**In the case of items accessioned in a museum collection, if the applicant is not the curator/scientific research officer in the related field, written approval must be obtained from the institution.....*

Phone: (H) (W) 021-481 3894 (C) 083 756 5532

Fax: E-mail: rgovender@iziko.org.za

Identity number of applicant: 731220 0015 081

2. Capacity of applicant. Please circle the appropriate position :

Museum curator

Archaeologist Palaeontologist Geologist

Owner

Agent for sale or auction

Other*

** Please furnish extra relevant details on a separate sheet of paper (if new applicant)*

3. Name and address of owner/ custodian:

.....

.....

.....

Phone: (H) (W) (C)

Fax: E-mail:

Identity number of owner/ custodian:

B. DETAILS OF HERITAGE OBJECT(S)

4. Description and number of objects*: SEE ATTACHED PAGE

* Please supply full description & motivation on a separate sheet of paper. For archaeological and palaeontological materials please include comment from the scientific officer in the related field and details of the project and project manager.

5. Era / period / age / date of object(s): EARLY PLIOCENE

6. Museum or University accession number: SEE ATTACHED

7. Museum or University loan number: 4580

8. For palaeontological and archaeological materials and meteorites give geographical situation of site / object: SEE ATTACHED

Magisterial district: VELDDRIJF 1: 50 000 Map no. & name (or SAN chart): 3218 CA 8 CC
 Latitude & Longitude: 32°58'S 18°9'E Recording method (GPS, Trig., Other):
 Farm Name and No.: / Town :
 Nearest Town: / Street address & Erf # :

9. If it is a listed type or declared heritage object, the number and date of the notice in the Government Gazette:

10. If it is a listed type or declared heritage object, the number of the object or type of object in the register of heritage objects:

11. Present location of object(s): IZIKO SOUTH AFRICAN MUSEUM

12. Please supply a photograph or drawing of object(s) destined for permanent export with a suitable scale.

C. DETAILS FOR APPLICATION TO EXPORT

13. Name and address of person/institution to whom it is being exported: DR ALBRECHT MANEGOLD
SENCKENBERG FORSCHUNGSINSTITUT UND NATURMUSEUM
SENCKENBERGANLAGE 25, D60325, FRANKFURT/MAIN, GERMANY

Phone: (H) (W) +49(0)69 7542 1575 (C)

Fax: +49(0)69 746 238 E-mail: albrecht.manegold@senckenberg.de

14. Please indicate whether for permanent or temporary export and reasons for export:

Temporary Export: For: Identification Analysis Dating Restoration Exhibition² Sale Other¹ MORPHOLOGICAL DESCRIPTION

Permanent Export: For: Identification Analysis Dating Restoration Exhibition Sale Other¹

¹ Please circle relevant words and supply full description on a separate sheet of paper.

² In the case of significant heritage objects travelling overseas for exhibition please supply copy of loan agreement.

15. Please supply documentation indicating the present condition of the object.
16. Please supply written undertaking of South African cultural institution that the object will be returned in the same condition.
17. In the case of temporary export, for what period will the object be exported?:
 From: 7/09/2012 To: 7/09/2013

D. DETAILS FOR APPLICATION TO DESTROY, DAMAGE, DISFIGURE, ALTER OR DISPERSE

18. Reason for application (Please supply full motivation):
19. Name and address of person who will do the work :
20. Destination of objects to be dispersed:
21. For what period will the permit be required?:
 From To

E. DETAILS FOR APPLICATION TO TRADE IN OR SELL FOR PRIVATE GAIN

22. Reason for application (Please supply full motivation):
23. Address from which items will be sold or traded:
24. Destination of items to be traded or sold :
25. For what period will the permit be required?:
 From To

I, DR. R. GOVENDER

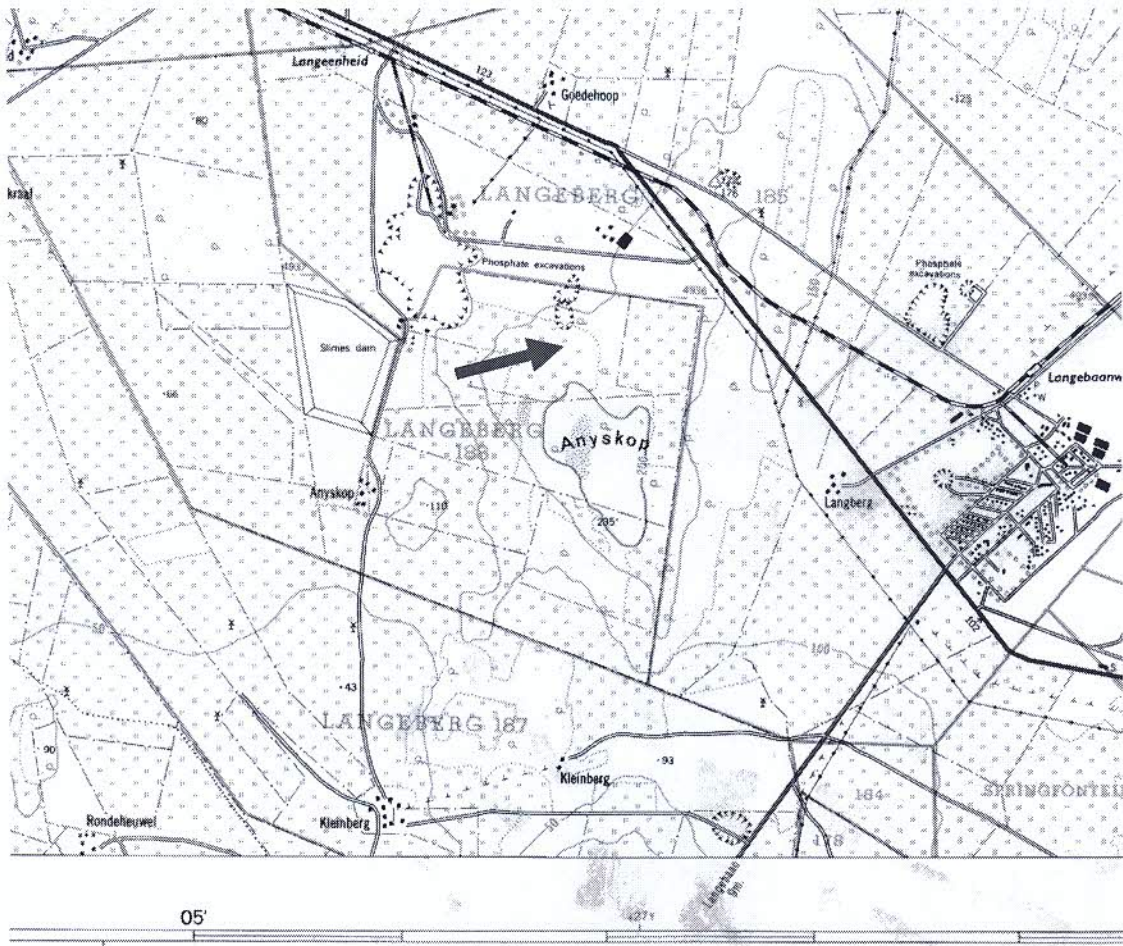
undertake strictly to observe the terms, conditions, restrictions, regulations and guidelines under which the Council may issue the permit to me.

Signature: [Signature] (Applicant) Place: CAPE TOWN
 Date: 24/08/12

Where the object(s) reside in a public institution:

I, Hamish G. Robertson Head of
 (South African institution or responsible department) where the applicant is based, hereby state that I support the application.

Signature: [Signature] Date: 27/8/12



8. Portion of 3218CA&CC Velddrif indicating the Location of the Langebaanweg fossil site (E Quarry).

**LOAN POLICY AND AGREEMENT FOR CENOZOIC VERTEBRATE FOSSIL
MATERIAL FROM IZIKO SOUTH AFRICAN MUSEUM**

We, **Senckenberg Forschungsinstitut und Naturmuseum Frankfurt Sektion Ornithologie**, agree to fulfil the following requirements and conditions of loan no: **4850**.

This form is to be signed by the borrower and his/her institutional representative who will authorize expenditure that might be required for Iziko to retrieve its material should the loan not be returned. [Note: "we" indicates the borrower and/or his/her institutional representative]

1. On receipt of the material, a copy of the loan invoice will be signed by the borrower and returned to the Iziko South African Museum and the loan receipt will also be acknowledged by email.
2. All loaned material will be stored appropriately.
 - a. We agree to keep fossil material separately padded, wrapped or boxed to prevent abrasive damage and breakage.
 - b. We will ensure the safety and identity of Iziko material.
3. We agree to return the specimens within the period specified on the loan requisition form. Should an extension be required, we will request it in writing.
4. Should we fail to respond to reminders and/or return material when requested by the collection manager, our institutional representative agrees to cover all expenses incurred to retrieve the overdue specimens.
5. We agree to advise Iziko of any changes in our contact details.
6. We agree not to remove any of Iziko material from our premises or to transfer any of it to another institution or person without written consent from Iziko and SAHRA.
7. We will not retain any specimens or parts thereof without written permission from Iziko.
8. No specimens or parts thereof will be altered in any way (prepared, sectioned or destroyed) without the written permission of the Director of Natural History. Any parts removed will be returned and clearly identified, with the rest of the specimen.
9. Where we have identified material, EACH specimen will be clearly labelled with the appropriate Iziko Accession Number.
10. When the loan is to be returned:
 - a. We will return it by courier or by hand.
 - b. For courier transport, we will use the same or similar packaging used by Iziko.
 - c. We will not return material during the month of December.
 - d. We will bear all costs.
 - e. We will advise the Iziko collection manager that the material is to be dispatched.
 - f. We will label the parcel FRAGILE. NO COMMERCIAL VALUE. MUSEUM SPECIMENS ON LOAN FOR RESEARCH.
11. We agree to acknowledge the use of Iziko South African Museum material and agree to deposit a copy of all associated publications in the Iziko South African Museum library. The acronym, SAM-PQL- will be used when referring to South African Museum Palaeontological Langebaanweg material.

Sign and return to: Romala Govender Fax: 27(0)21 4813993 email rgovender@iziko.org.za

Borrower Albrecht Mangold Signature Albrecht Mangold Date 24/08/2012

Representative of Borrowing Institution

Name Dr. Gerald Mayr Signature [Signature] Date 24.8.2012

Early Pliocene remains of owls (Strigiformes) and an Old World vulture (Aegypiinae, Accipitridae) from the Upper Varswater Formation at Langebaanweg, South Africa and their significance for palaeoenvironmental reconstructions

Proposal by Albrecht Manegold¹, Marco Pavia² and Pippa Haarhoff³

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Introduction

The Upper Varswater Formation at Langebaanweg (early Pliocene, South Africa) produced not only an enormous diversity of mammals (e.g., Hendeay 1981), but also an especially rich avifauna. In fact, this site is regarded as one of the largest assemblages of pre-Pleistocene bird bones in the world with more than 60 bird species representing over 30 family taxa (Rich 1980; Olson 1985a). Several taxa such as albatrosses, storm-petrels and prions, penguins, storks, ibises, mousebirds and others were studied in greater detail (e.g., Simpson 1971, 1979; Olson 1984, 1985a, b; 1994; Rich and Haarhoff 1985; Haarhoff 1988). More recent studies on penguins (Ksepka and Thomas 2012), songbirds and nightjars (Manegold 2010a, b), a new species of woodpecker (Manegold and Louchart 2012), parrots (Stidham 2006; Manegold, submitted), honeyguides (Louchart and Manegold, in prep.) reveal new and rather unexpected insights in the composition of the past avifauna, such as independent colonization of Southern Africa by at least three different lineages of penguins (Ksepka and Thomas 2012), evidence for an additional African woodpecker-lineage of Eurasian origin (Manegold and Louchart 2012), and implications for more densely wooded habitats in the immediate proximity of the fossil site (Manegold and Louchart 2012; Manegold, submitted) rather than open grasslands as previously supposed (e.g., Hendeay 1982; Olson 1985a), which is also in accordance with recent mesowear studies (Stynder 2011).

The significance of fossil owls and vultures for palaeoenvironmental reconstructions

The fossil avifauna at Langebaanweg also comprised at least two species of owls (Strigiformes), one species of falcon (Falconidae), and at least seven species of hawks and relatives (Accipitridae), including one species of Old World vulture (Aegypiinae) (Rich 1980; Haarhoff pers. com.). Although remains of owls and the vulture are rare in the fossil record of Langebaanweg constituting <1% each of all bird remains from LQSM I (Rich 1980), especially the owls might have contributed significantly in the accumulation of remains of small mammals and birds at the fossil site. The vulture, on the other hand, might have played an important role as a scavenger in an environment dominated by large herbivores (Hendey 1981) and a great diversity of carnivores (Werdelin 2006). Furthermore, the fossil record of owls is surprisingly rare in Africa, and the vulture from the Varswater Formation actually is the earliest record for this taxon for the continent, although it is already known from the Miocene of China, Europe and North America (Zhang et al. 2010). Thus, a more detailed analysis of these fossils will contribute to a better understanding not only of the evolutionary history of owls and vultures in Africa, but will also allow new insights into palaeoecological interrelations within the early Pliocene faunas at Langebaanweg.

Rationale for the proposal

The intended study on owls and raptors from LBW is based on previous studies on these taxa by Pippa Haarhoff, and it will greatly benefit from recent publications on the phylogeny of owls and Accipitridae including Old World vultures (Griffiths et al. 2007; Wink et al. 2009) as well as on their fossil record in the Neogene of Africa (e.g., Mourer-Chauviré and Geraads 2010; Louchart 2011) and Eurasia (Pavia 2008; Zhang et al. 2010; Pavia and Mourer-Chauviré 2011).

The identification and description of the fossils will be further enabled by the access to the collection of bird skeletons at Senckenberg Research Institute Frankfurt, which ranks among the largest of its kind in Europe and comprises a reasonable collection of specimens of owls and birds of prey representing various taxa from all over the world. The Senckenberg Research Institute Frankfurt further offers very good opportunities for high quality photographic documentation of the fossils, which is mandatory for the subsequent publications. Thus, we aim to study the fossil specimens together at the Senckenberg Research Institute, which would require the loan of 40 specimens referred to at least two species of owls (Tab. 1) and 88 spec-

imens (including 24 specimens of an associated partial skeleton) referred to one species of vulture (Tab. 2-3). We do not intend any destructive sampling of the material requested.

Marco Pavia already published on fossil owls, hawks, and eagles from the Neogene of Europe (Louchart et al. 2005; Pavia 2004, 2008; Pavia and Mourer-Chauviré 2011). Albrecht Manegold is familiar with the fossil avifauna from Langebaanweg and especially interested in paleoecological interrelationships of the local faunas. The description of fossils will be effected in close cooperation with Pippa Haarhoff, who initiated the studies on owls and diurnal birds of prey, and who already compared the owl specimens with corresponding fossils from the Miocene of France. The results of the project will be published with her co-authorship.

References

- Ksepka, D. & Thomas, D. 2012. Multiple cenozoic invasions of Africa by penguins (Aves, Sphenisciformes). *Proceedings of the Royal Society, B* 279:1027–1032.
- Griffiths, C. S., Barrowclough, G. F., Groth, J. G. & Mertz, L. A. 2007. Phylogeny, diversity, and classification of the Accipitridae based on DNA sequences of the RAG-1 exon. *Journal of Avian Biology* 38:587–602.
- Haarhoff, P. J. 1988. A new fossil stork (Aves, Ciconiidae) from the Late Tertiary of Langebaanweg, South Africa. *Annals of the South African Museum* 97:297–313.
- Hendey, Q. B. 1981. Palaeoecology of the late Tertiary fossil occurrences in ‘E’ Quarry, Langebaanweg, South Africa, and a reinterpretation of their geological context. *Annals of the South African Museum* 84:1–104.
- Hendey, Q. B. 1982. Langebaanweg – A record of past life. South African Museum, Cape Town.
- Louchart, A. 2011. Aves. Pp. 505–533 in Harrison, T. (ed.), *Paleontology and Geology of Laetoli: Human Evolution in Context. Volume 2: Fossil Hominins and the Associated Fauna* Springer, Dordrecht.
- Louchart, A., Bedetti, C. & Pavia, M. 2005. A new species of eagle (Aves : Accipitridae) close to the steppe eagle, from the Pleistocene of Corsica and Sardinia, France and Italy. *Palaeontographica Abteilung A: Paläozoologie–Stratigraphie* 272:121–148.
- Manegold, A. 2010a. Two swallow species from the Early Pliocene of Langebaanweg (South Africa). *Acta Palaeontologica Polonica* 55:765–768.

- Manegold, A. 2010b. First evidence for a nightjar (Caprimulgidae, Aves) in the early Pliocene of Langebaanweg, South Africa. *Palaeobiodiversity and Palaeoenvironments* 90:163–168.
- Manegold, A. (submitted). Two new parrot taxa (Psittaciformes) from the early Pliocene of Langebaanweg (South Africa) and their paleoecological implications. *Ibis*.
- Manegold, A. & Louchart, A. 2012. Biogeographical and palaeoenvironmental implications of a new woodpecker species (Picidae) from the early Pliocene of South Africa. *Journal of Vertebrate Paleontology* 32:926–938.
- Mourer-Chauviré, C. & Geraads, D. 2010. The Upper Pliocene Avifauna of Ahl al Oughlam, Morocco. *Systematics and Biogeography. Records of the Australian Museum* 62:157–184.
- Olson, S. L. 1984. A hamerkop from the Early Pliocene of South Africa (Aves: Scopidae) from Langebaanweg southwestern Cape Province. *Proceedings of the Biological Society of Washington* 97:736–740.
- Olson, S. L. 1985a. Early Pliocene Procellariiformes (Aves) from Langebaanweg, southwestern Province, South Africa. *Annals of the South African Museum* 95:123–145.
- Olson, S. L. 1985b. Early Pliocene ibises (Aves, Plataleidae) from south-western Cape Province, South Africa. *Annals of the South African Museum* 97:57–69.
- Olson, S. L. 1994. Early Pliocene grebes, button-quail, and kingfishers from south-western Cape Province, South Africa (Aves: Podicipedidae, Turnicidae, Halcyonidae). *Annals of the South African Museum* 104:49–61.
- Pavia, M. 2004. A new large barn owl (Aves, Strigiformes, Tytonidae) from the Middle Pleistocene of Sicily, Italy, and its taphonomical significance. *Geobios* 37:631–641.
- Pavia, M. 2008. The evolution dynamics of the Strigiformes in the Mediterranean islands with the description of *Aegolius martae* n. sp. (Aves, Strigidae). *Quaternary International* 182:80–89.
- Pavia, M. & Mourer-Chauviré, C. 2011. Redescription of *Tyto sanctialbani* Lydekker, 1893 (Aves, Strigiformes), from its type locality of la Grive-Saint-Alban (Middle Miocene, France). *Journal of Vertebrate Paleontology* 31:1093–1101.

- Rich, P. V. 1980. Preliminary report on the fossil avian remains from late Tertiary sediments at Langebaanweg (Cape Province), South Africa. *South African Journal of Science* 76:166–170.
- Rich, P. V. & Haarhoff, P. J. 1985. Early Pliocene Coliidae (Aves, Coliiformes) from Langebaanweg, South Africa. *Ostrich* 57:20–41.
- Simpson, G. G. 1971. Fossil penguin from the Late Cenozoic of South Africa. *Science* 171:1144–1145.
- Simpson, G. G. 1979. A new genus of Late Tertiary penguin from Langebaanweg, South Africa. *Annals of the South African Museum* 78:1–9.
- Stidham, T.A. 2006. Parrots (Aves: Psittaciformes) from the Miocene [sic] Varswater Formation, Langebaanweg, South Africa. *African Natural History* 2:198–199.
- Stynder, D.D. 2011. Fossil bovid diets indicate a scarcity of grass in the Langebaanweg E Quarry (South Africa) late Miocene/early Pliocene environment. *Paleobiology* 37:126–139.
- Werdelin, L: 2006. The position of Langebaanweg in the evolution of Carnivora in Africa. *African Natural History* 2:201–202.
- Wink, M., Sauer-Gürth, H.& Gonzales, J. 2009. Molecular phylogeny of owls (Strigiformes) inferred from DNA sequences of the mitochondrial cytochrome b and the nuclear RAG-1 gene. *Ardea* 97:581–591.
- Zhang, Z., Zheng, X., Zheng, G.& Hou, L. 2010. A new Old World vulture (Falconiformes: Accipitridae) from the Miocene of Gansu Province, northwest China. *Journal of Ornithology* 151:401–408.

Appendix 1. List of 38 isolated fossil specimens of owls (Strigiformes) from Langebaanweg requested for loan by Albrecht Manegold, Senckenberg Forschungsinstitut Frankfurt, Germany.

| Specimen No. SAM-PQ-L | Description | | Horizon |
|----------------------------------|--------------------|----------------|--------------------------|
| 23078 | humerus | proximal right | QSM I |
| 20691Y3 | humerus | distal left | QSM I |
| 42829i | humerus | distal left | PPM 3aS poss. QSM Dump 5 |
| 43565 | humerus | distal right | PPM 3aS poss. QSM Dump 5 |
| 43566 | humerus | distal left | PPM 3aS poss. QSM Dump 5 |
| 33540C | humerus | distal right | PPM 3aNI |
| 28433R | humerus | proximal right | QSM poss. PPM Dump 3 |
| 14846 | ulna | distal right | QSM I |
| 14849 | ulna | distal left | QSM I |
| 50411L | ulna | distal left | PPM 3aN IIc, Dump 9 |
| 24592J | sternum | | QSM I |
| 23436 | coracoid | complete left | QSM I |
| 30104 | coracoid | proximal right | PPM 3aNI |
| 25390GA | scapula | proximal right | QSM Dump 2 East Stream |
| 20700M | tibiotarsus | distal left | QSM I |
| 20691L3 | tibiotarsus | distal left | QSM I |
| 50022ZB | tibiotarsus | distal left | PPM 3aN Dump 8 |
| 50022ZA | tibiotarsus | distal left | PPM 3aN Dump 8 |
| 42828A | tibiotarsus | distal right | PPM 3aS poss. QSM Dump 5 |
| 33521I | tibiotarsus | distal right | PPM 3aNI |
| 28927 | tibiotarsus | proximal right | QSM/PPM Dump 3 |
| 28479C | tibiotarsus | distal left | QSM/PPM Dump 3 |
| 28439C | tibiotarsus | distal left | QSM/PPM Dump 3 |
| 28197AU | tibiotarsus | distal left | East Stream Dump 7 |
| 13052N2 | tarsometatarsus | complete right | QSM I |
| 25293DZ | tarsometatarsus | proximal right | QSM I |
| 20704EI | tarsometatarsus | right shaft | QSM I |
| 20691H3 | tarsometatarsus | distal left | QSM I |
| 25293GM | tarsometatarsus | distal right | QSM I |
| 28199FN | tarsometatarsus | distal right | QSM I |
| 20926 | tarsometatarsus | distal left | QSM I |
| 20701X | tarsometatarsus | distal left | QSM I |
| 56223 | tarsometatarsus | proximal left | PPM poss. QSM Dump 10 |
| 50354B | tarsometatarsus | distal right | PPM 3aNIIc |
| 43568 | tarsometatarsus | distal right | PPM 3aS poss. QSM Dump 5 |
| 43569 | tarsometatarsus | distal right | PPM 3aS poss. QSM Dump 5 |
| 33704 | tarsometatarsus | distal right | PPM 3aNI |
| 28199DT | tarsometatarsus | distal right | QSM I |

Appendix 2. List of 70 isolated fossil specimens of a species of Old World vulture (Aegypiinae) from Langebaanweg requested for loan by Albrecht Manegold, Senckenberg Forschungsinstitut Frankfurt, Germany.

| Specimen No. SAM-PQL- | Description | Horizon |
|----------------------------------|-------------------------|--|
| 50090B | PR furculum | Bed 3aN Dump 8 |
| 55665 | DR CMC | Dump 10 MPPM 3aN or LQSM |
| 55662 | PR CMC | Dump 10 MPPM 3aN or LQSM |
| 50088C | DR CMC | Bed 3aN Dump 8 |
| 28577 | PR fragment CMC | Step surface above 1974 SE face |
| 30069 | DR CMC | TCWW prox. MPPM 3aN I |
| 45255 | PL CMC | N Wall |
| 55664 | PL CMC | Dump 10 MPPM 3aN or LQSM |
| 14319 | Fragment of mandible | NW of E bank or Main stream LQSM |
| 45173 | PL CMC | N. Wall. Dump collection |
| 57896 | PR Radius | Dump 10 |
| 50080D | Radius | Bed 3aN Dump 8 |
| 57898 | DL radius | Dump 10 |
| 50422 | PR radius | Bed 3aN Dump 9 |
| 55666 | PL radius | Dump 10 MPPM 3aN or LQSM |
| 63746 | PR radius | Dump 10 MPPM 3aN |
| 50091 | DR radius | MPPM Bed 3aN Dump 8 |
| 57897 | PR radius | Dump 10 |
| 50091B | DR radius | Bed 3aN Dump 8 |
| 55663 | PR radius | Dump 10 MPPM 3aN or LQSM |
| 50080B | PR radius | Bed 3aN Dump 8 |
| 50090D | Large coracoid fragment | Bed 3aN Dump 8 |
| 57654 | PL fragment coracoid | Pick up 1977 |
| 28570 | DR fragment/ shaft CMC | Step surface NE corner above 1974 face |
| 57895 | Ulna shaft | Dump 10 |
| 57904 | ADL ulna | Dump 10 |
| 42081 | DL ulna | Carbonaceous deposit S of IWRP (3aN) |
| 21730 | DR ulna | SE face |
| 65572 | Proximal ulna | Wall N of 1976/2 |
| 12887B | DL TBT | Area 13 W wall LQSM |
| 45960 | DR TBT | W wall IWRP E9 level III |
| 24795 | ADR TBT | Tex's pit #4 |
| 28479D | ADL TBT | E stream Dump 3 (LQSM or MPPM) |
| 61641 | DR TMT | 1976/2 area pick up |
| 55660 | DL TMT | Dump 10 MPPM 3aN on LQSM |
| 50090C | PR TMT | Bed 3aN Dump 8 |
| 50089D | PL TMT | Bed 3aN Dump 8 |
| 24792 | ADR TMT | Tex's pit #4 |
| 50089E | DL TMT | Bed 3aN Dump 8 |
| 55659 | DL TMT | Dump 10 MPPM 3aN or LQSM |
| 50089C | PL TMT | Bed 3aN Dump 8 |

| | | |
|--------|------------------------|------------------------------|
| 55658 | DL TMT | Dump 10 MPPM 3aN |
| 57902 | DL TMT | Dump 10 |
| 57906 | DR TMT trochlea II | Dump 10 |
| 57903 | DR TMT trochlea III | Dump 10 |
| 55677E | Pes phalanx | Dump 10 MPPM 3aN or LQSM |
| 55667C | Pes phalanx | Dump 10 MPPM 3aN or LQSM |
| 50090A | PL scapula | Bed 3aN Dump 8 |
| 50084C | DR humerus | Bed 3aN Dump 8 |
| 57894 | Ulna shaft | Dump 10 |
| 55667B | Pes phalanx | Dump 10 MPPM 3aN or LQSM |
| 57893 | DR ulna | Dump 10 |
| 55661 | PR ulna | Dump 10 MPPM 3aN or LQSM |
| 50090E | PR Digit II P1 (manus) | Bed 3aN Dump 8 |
| 48928 | Pes phalanx | E9 level III 1976/2 |
| 57901 | Phalanx 1 | Dump 10 |
| 50642 | DR femur | South end 1976/2 |
| 30097 | PR femur | TCWW E side |
| 45716C | APL humerus shaft | W wall DRP6 |
| 50084D | PL humerus | Bed 3aN Dump 8 |
| 55168 | Cuneiform | Bed 3aN Dump 10 |
| 55667A | Pes phalanx | Dump 10 MPPM 3aN or LQSM |
| 55667D | Pes phalanx | Dump 10 MPPM 3aN or LQSM |
| 57554 | Terminal Phalanx pes | Dump 8 |
| 46782 | PL TMT | E2 1976/2 |
| 57900 | Phalanx 1 | Dump 10 |
| 57899 | APR femur | Dump 10 |
| 57907 | Unidentified fragment | Dump 10 |
| 57905 | PR phalanx | Dump 10 |
| 21172 | DR humerus | Far E area south site (LQSM) |

Appendix 3. List of 33 associated bones of a single specimen of an Old World vulture (Aegyptii-nae) from Langebaanweg requested for loan by Albrecht Manegold, Senckenberg Forschungsinstitut Frankfurt, Germany.

| Specimen No. SAM-PQL | Description of various parts | Horizon |
|---------------------------------|-------------------------------------|------------------------------------|
| 21173 | Carpal | 1973. SE face third sample LQSM |
| | Fibula | |
| | Digit III | |
| | DL TMT (trochlea IV) | |
| | DL CMC | |
| | Furculum fragment | |
| | ADL humerus | |
| | DR radius | |
| | APL femur | |
| | Pollex | |
| | CR CMC | |
| | Ulna | |
| | ACL humerus | |
| | PR scapula | |
| | Vertebra | |
| | Vertebra | |
| | Vertebra | |
| | Vertebra | |
| | Vertebra | |
| | Vertebra | |
| | R/ shaft coracoid | |
| | P radius | |
| | ACL coracoid | |
| | DL radius | |
| | Pes 2 nd phalanx | |
| | Pes 3 rd phalanx | |
| | Terminal phalanx pes | |
| | Terminal phalanx pes | |
| | Terminal phalanx pes | |
| | Carpal | |
| | Carpal | |
| | ADR humerus | |
| | APR humerus | |