

## Research Article

# THE SKELETAL REMAINS OF DU PREEZHOEK, PRETORIA, SOUTH AFRICA

## *A bioarchaeological investigation of an early pioneer family*

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**ABSTRACT**

During December of 2006, skeletal remains of eleven individuals were exhumed from the Du Preezhoek cemetery located on the western banks of the Apies River, next to the Old NZASM Bridge, as part of a Heritage Impact Assessment. The excavated cemetery dated to the latter half of the 19th century and contained the remains of early pioneers. The remains were studied before they were reburied in the Du Preez allotment at the Old Church Street West Cemetery. Physical anthropological techniques were used to analyse these skeletons to determine their demographics, health, diet and lifestyles. The demographic information provided comparative data which could be assessed in terms of existing genealogical data, resulting in the potential identification of the remains. The pathological information gathered through the physical anthropological analyses provided insight into these individuals' lifestyles and a glimpse into pioneer life in 19th century Pretoria.

Keywords: Apies River, bioarchaeology, physical anthropology, genealogy, human skeletal remains, pioneer families, 19th century Pretoria, pathology.

**INTRODUCTION**

The Apies River, still an important landmark in Pretoria<sup>1</sup> today, and its surroundings, became home to some of the pioneer families who moved into the Transvaal at the end of the Great Trek in 1839 (Allen 1971; Engelbrecht *et al.* 1955). From 1839 to 1850 the Erasmus, Bronkhorst, Minnaar, Van der Walt, Beetge, Prinsloo, Pretorius, Du Toit, Du Preez, Vermeulen, Smit and Kruger families moved into the area, many of whom settled along the banks of the Apies River (Coetzee n.d.; Engelbrecht *et al.* 1955). In 1842 the Bronkhorst family settled on farms situated next to the Apies River, in the area today known as Fountains Valley (Allen 1971; Coetzee n.d.; Wilmans 1993). J.G.S. and L.C. Bronkhorst respectively settled on the farms Elandspoort and Groenkloof (Coetzee 1993; Coetzee n.d.; Heydenrych & Swiegers 1999; Wilmans 1993). In 1848 J.G.S. Bronkhorst died and his farm, Elandspoort, became the property of Andries van der Walt who along with his son-in-law, Johannes Petrus du Preez, already lived to the west of the Apies River (Andrews & Ploeger 1989; Engelbrecht *et al.* 1955; Heydenrych & Swiegers 1999). They renamed the farm Du Preezhoek. Here Jan 'Diknek' Du Preez and his wife Maria Magdalena (1831–1881) took residence (Andrews & Ploeger 1989; Coetzee 1993; Punt 1951; Wilmans 1993).

In July 2006 Archaic HPM conducted exploratory excavations in a part of Du Preezhoek impacted upon by the Gautrain Rapid Rail Link. During these excavations Archaic HPM found and recorded structures, buildings and vegetation closely associated with the early pioneer settlement and urban development of Pretoria. These surface features included a ruined building to the northwest of the Apies River, part of the original

poplar grove associated with the Elandspoort farm, as well as the remains of an old cemetery on the western banks of the Apies River (Fig. 1). The identification of the persons interred in the cemetery was not possible due to the lack of extant headstones or grave markers. The mitigation of the site included the excavation and exhumation of the cemetery remains and the subsequent reburial of the skeletal remains in the Old Church Street West Cemetery in Pretoria.

The purpose of this paper is to present the anthropological analysis of the excavated skeletal material and to compare these data to archaeological and historical information on the associated site as well as existing genealogical data associated with the original owners of the site. This has enabled the provisional identification of the skeletal remains, whereas pathological markers, associated with diet and health, provided additional insight into early pioneer life in historical Pretoria.

**MATERIALS**

Archival evidence indicated that the structural remains found by Archaic HPM during the exploratory excavations could be the remains of Francois du Preez's house and that the poplar grove and the cemetery were part of the original Du Preezhoek farm. According to historian Willem Punt (1951: 4), who interviewed Mr Budke (a great grandson of Jan du Preez) in 1949, Jan du Preez's small house was situated about 20 paces to the north-west of the still existing poplar grove: "*Oupa Jan se huis het 20 tree reg noordwes van die populierbos gestaan.*" His son Francois' house was built about 50 paces southeast of Jan du Preez's house, on the other side of the railway line and on the western side of the Apies River: "*Vyftig tree suidwes van Jan du Preez se woning, digby die spoorweg, was die huis van sy seun Frans*" (Punt 1951: 5). Du Preez (1962: 184) also mentions the location of Jan and Francois du Preez's houses as being near the present day railway line: "*Die plaasopstalle van Jan 'Diknek' en sy jongste seun Frans het naby die huidige spoorweg se kant gestaan.*"

As for the remains of the old cemetery identified by Archaic HPM (Nel 2006), there are some cartographic as well as archival references to its existence during the Du Preez occupancy of the area. A map from 1877 (Van Der Waal Collection, *Africana*, University of Pretoria) illustrates the boundaries of early Pretoria with the Du Preez Cemetery on the southern boundaries of the city (Fig. 2). Other archival sources suggest that the Du Preezhoek cemetery was situated on the banks of the Apies River in the area of Fountains Valley, next to the Netherlands South African Railway Company (NZASM) bridge, which was built between 1890 and 1893, to link Pretoria to Mozambique (Cartwright & Cowan 1978; Engelbrecht *et al.* 1955; Heydenrych & Swiegers 1999). Coetzee states that one of the oldest known cemeteries of Pretoria, called Du Preezhoek, was next to the NZASM railway bridge in Fountains Valley (Coetzee 1993: 13).

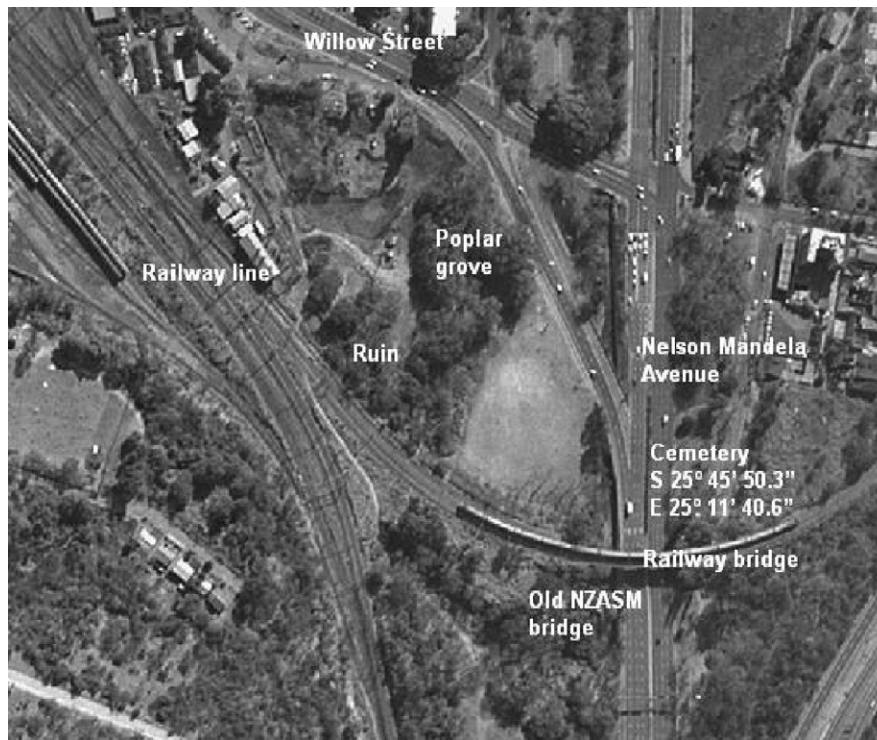


FIG. 1. Aerial photograph of site taken in 2005. (CSIR, SAC: 498523/tshwane/2005).

It remains unclear, however, whether the Du Preezhoek cemetery was used by the previous owners of the land, the Bronkhorsts, before being taken over by the Du Preez family in 1848, or whether it was created and used only after the Du Preez family's occupancy of the area. Since no evidence exists for the former, along with the very short occupancy by the Bronkhorsts with no deaths mentioned throughout that time, it will be assumed that the cemetery only started with the Du Preez family occupancy of the farm.

The Du Preezhoek cemetery was excavated in December 2006 and the skeletal remains of 11 individuals were exhumed. The remains originated from 10 separate interments, although no clear grave pits could be observed. The graves were aligned in an east–west direction with the heads positioned to the west and the feet to the east. This east–west alignment is suggestive of Christian burials (Webster & Brown 1997). The overall north–south linear layout of the graves suggests that a group of people made formal use of the cemetery, because the position of previous graves must have been known since each new grave was dug next to an earlier one. This layout is typical of farm graveyards of this time, in which one family used the graveyard over a long period.

The first grave, DPH 01, was not quite situated within the boundaries of the fenced-off cemetery – being more to the west than any of the other graves – suggesting that the green steel picket fence and granite border enclosing the graveyard were built more recently. The unaligned position of the grave in relation to all the others might suggest that this grave was created first or that it was created last after the original positions of the other graves had been forgotten. Grave number 5 contained two individuals and therefore they were given the numbers DPH 05.a and DPH 05.b. DPH 05.b was almost on top of DPH 05.a – positioned a little more to the south – and it was therefore assumed that these two individuals died at about the same time with DPH 05.a having died before DPH 05.b.

The presence of three Martini-Henry bullet casings (Fig. 3) within the graves DPH 05.a and DPH 05.b assisted in the dating of the graves. The Martini-Henry rifle was first made and used

by the British army in 1871 and came into the hands of the Boers around 1880 to 1881, with the outbreak of the First Anglo-Boer War (1880–1881) (Lategan 1974). One can therefore assume that these two individuals died no earlier than 1880. This provides a *terminus post quem* for this particular grave in the cemetery.

## METHODS

The lack of any definitive cartographic or archival evidence, as well as unreliable on-site artefacts (no extant head stones or other markers) means that positive identification of the individuals in the graves is almost impossible. Yet the use of physical anthropological methods to discern each individual's demographic features have helped create a criterion for comparison with existing genealogical records from both the Van der Walt and Du Preez families, who, as the landowners, are the most likely candidates to have been buried here.

The basic demographic features (age, sex, and ancestry) of each of the Du Preezhoek skeletons were determined using standard anthropological techniques and measurements from South African data where possible (Krogman & Işcan 1986). The data were then compared to the Du Preez and Van der Walt genealogies to consider who might have been buried in the various graves. Visual assessment of macroscopic skeletal and dental pathologies was also used to make inferences about early pioneer lifestyle (Hillson 1998; Ortner 2003).

The demographic data was compared to genealogical data from both the Van der Walt and Du Preez families, the comparative criteria being age and sex for adults and age for juveniles. The list of candidates from the Du Preez family runs from Johannes Petrus (Jan Diknek) du Preez through to his grandchildren. Jan du Preez married the daughter of *veldkornet* Andries van der Walt, Maria Magdalena, in 1848 (Table 1) (Du Preez 2003). After Maria Magdalena du Preez's death, Jan du Preez married Emmerentia Adriana Wilhelmina Frederika Meyer (widowed Steyn). The first marriage produced twelve children: seven sons, one of whom was adopted, and five daughters (Du Preez 2003; Du Preez 1962). Similarly, the candidates for the Van

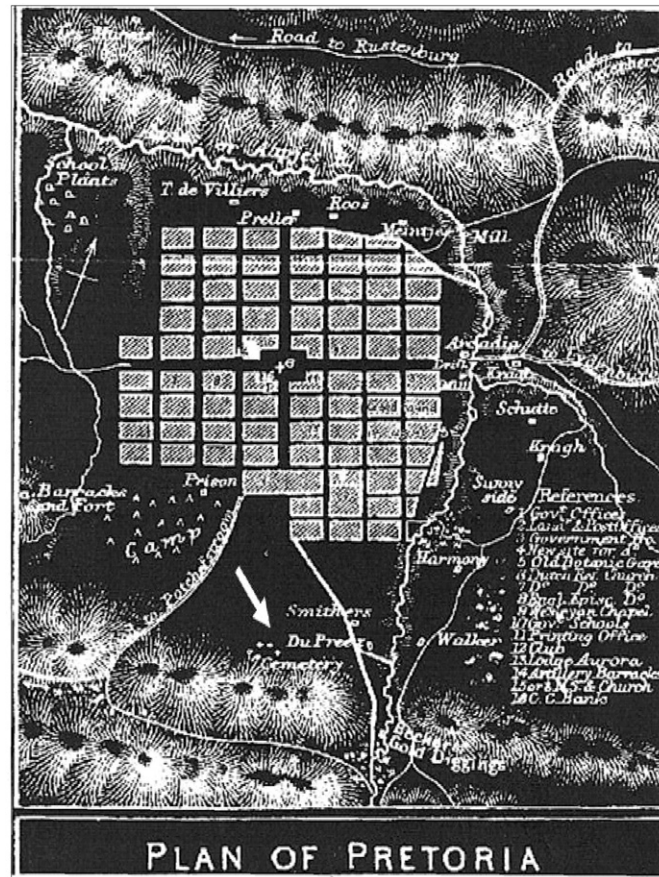


FIG. 2. Map of Pretoria 1877. (Arrow indicates location of the Du Preez cemetery) (Van Der Waal Collection, Africana, UP).

der Walt family began with Andries Petrus van der Walt and extended to his grandchildren (Table 2). Andries van der Walt, one of the earliest Pretoria pioneers, came to Pretoria in the early 1840s. Born in Colesberg, Andries van der Walt became a 'trekboer' (a nomadic type of pastoralist farmer) and from 1828 he moved around the area of the Orange River. During this time he was also made *veldkornet* in what was then the Orange Free State. In 1848 he purchased the farm Elandspoot from the widow of Gert Bronkhorst and built his house on the western banks of the Apies River.

Andries van der Walt married Cornelia Magdalena Potgieter and they had twelve children (Van der Walt *et al.* 1989; Van der Walt *et al.* 1998).

## RESULTS

The physical anthropological analysis (refer to Table 3) revealed that three of the skeletons (DPH 05.a, DPH 06 and DPH 08) were those of adult females between the ages of 30 and 60 years old. Two of these female individuals (DPH 05.a and DPH 06) were of European ancestry whereas the third (DPH 08) was clearly of mixed ancestry portraying both

European and African characteristics. All three persons gave birth to at least one child as indicated by the presence of a prominent *pre-auricular sulcus* on the *os coxae* (Houghton 2005). A fourth individual (DPH 05.b) was determined to have been between the ages of 12 and 16 years and of European ancestry. The absence of secondary sexual characteristics made it difficult to determine the sex. Of the seven remaining individuals, one was a child of between seven and eight years old (DPH 01) whereas the others were all infants ranging between birth and 3 years old (DPH 02, DPH 03, DPH 04, DPH 07, DPH 09 and DPH 10). Ancestry and sex could not be determined here due to these individuals' young age and the absence of sexual and ancestral skeletal markers.

No possible causes of death could be determined for any of the Du Preezhoek remains, with no traumatic evidence visible on the skeletal material. Two of the Du Preezhoek individuals (DPH 05.b and DPH 08) show signs of subperiosteal bone growth (Fig. 4). Subperiosteal bone growth is usually associated with generalized bone disease and, in cases where lesions

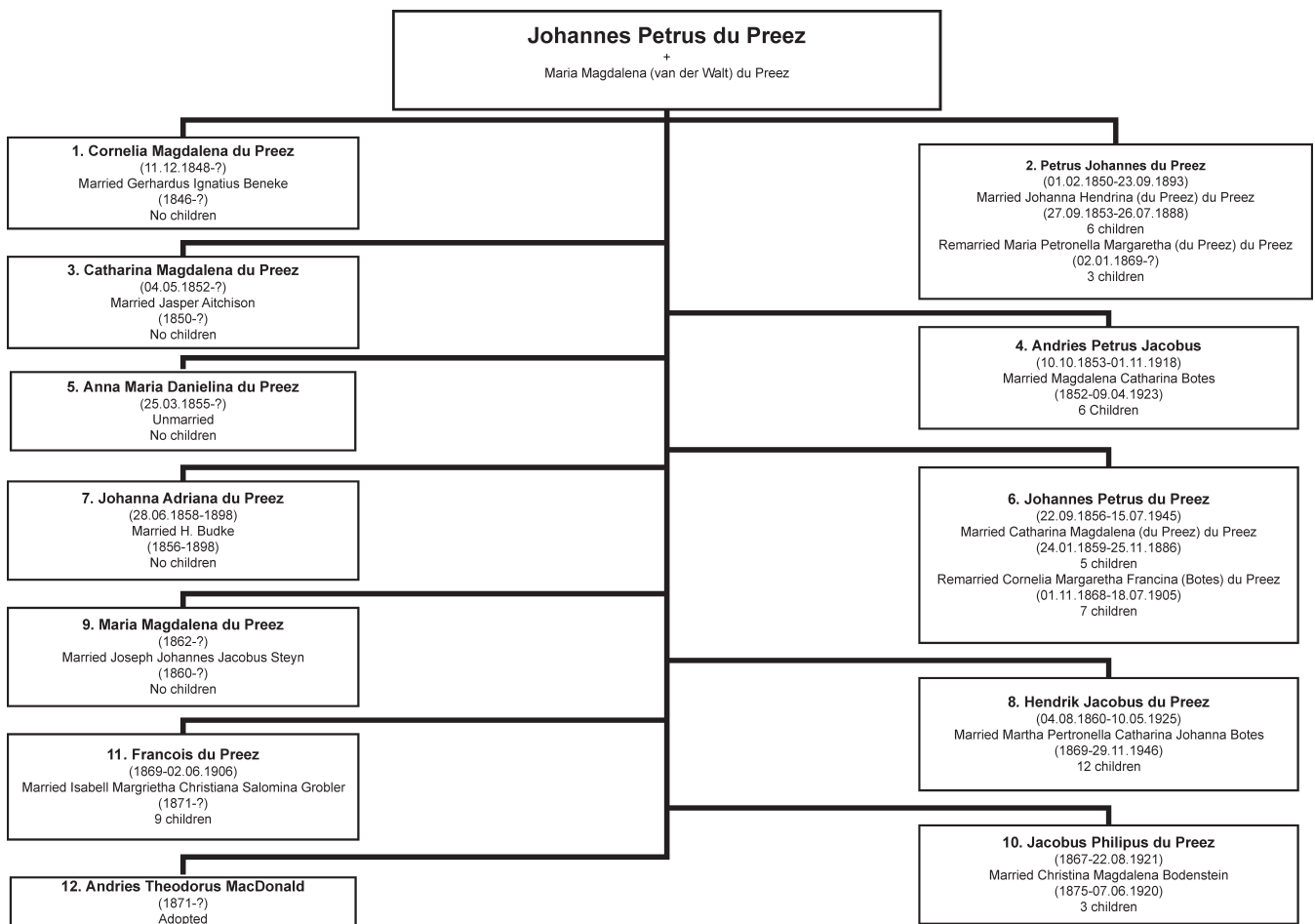


FIG. 3. Martini-Henry bullet casing.



FIG. 4. Subperiosteal bone growth on fibula.

TABLE 1. Genealogy of the first Du Preez family in Pretoria.



occur in isolated skeletal elements, the aetiologies can be numerous (Ortner 2003). The presence of periodontal disease (Fig. 5), in association with cranial and post-cranial subperiosteal lesions, observed on DPH 08 suggest that this individual might have suffered from scurvy, a vitamin C deficiency caused by a diet lacking vitamin C-rich (ascorbic acid) foods like fresh fruits



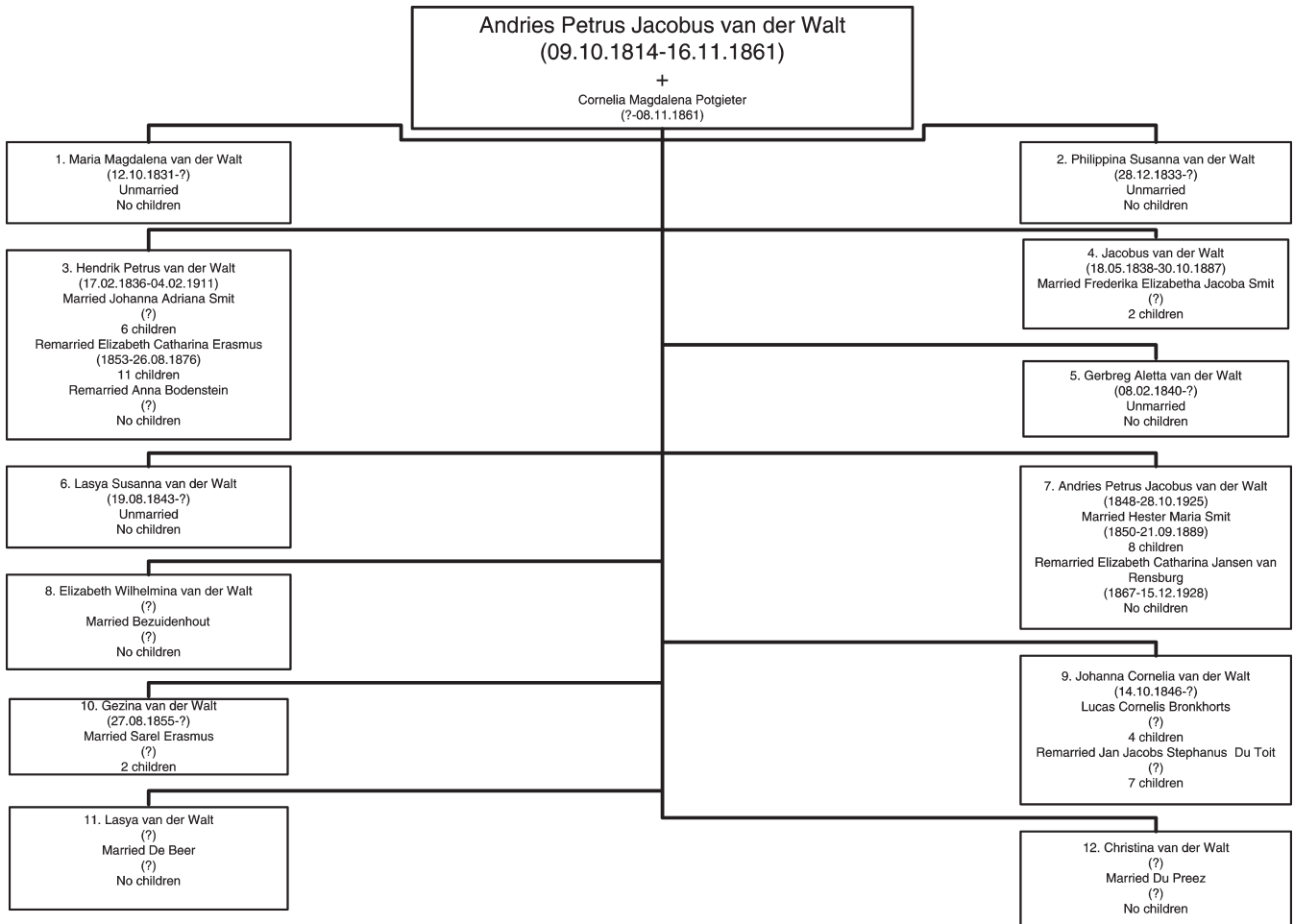
FIG. 5. Mandible with the retraction of alveolar bone indicating periodontal disease.

and vegetables (Ortner 2003). Ascorbic acid is essential in the formation of collagen, the main organic matrix of bone (Maat 2004; Mays 2007; Ortner 2003). A vitamin C deficiency causes general weakness of connective tissue as well as weakness in the walls of blood vessels (Maat 2004; Mays 2007). These weaknesses cause haemorrhaging, and if it occurs adjacent to bone this can provoke an osteological response that may enable the recognition of scurvy in skeletal remains (Mays 2007). Lesions that can be observed in adult scurvy include subperiosteal bone growth or bone porosity on the long bones and skull, and porous hypertrophic bone lesions on the skull with *cribra orbitalia* on the inside of the orbit plates (Mays 2007; Ortner 2003). Scurvy can also be associated with the presence of periodontal disease in the maxilla and mandible due to the bleeding of the gums caused by this deficiency (Hirschmann & Gregory 1999).

No *cribra orbitalia* or *porotic hyperostosis* was, however, observed in association with the subperiosteal lesions seen in DPH 05.b and DPH 08 and therefore scurvy cannot be given as a definitive diagnosis here. Other possible causes for subperiosteal bone growth include localized infections or overall poor health (Ortner 2003) which could also explain the observed subperiosteal bone growth.

Other pathological conditions observed on the skeletal remains were the presence of osteophytic lipping (DPH 05.a and DPH 08) and Schmorl nodes (DPH 05.a and DPH 05.b) (Ortner 2003) (Fig. 6). Such skeletal lesions are usually associated with degenerative changes and act as indicators of older age and/or physical activity and strain. The aetiology of Schmorl nodes is not yet fully understood, but it can be seen as

TABLE 2. Genealogy of the first Van der Walt family in Pretoria..



a commonly occurring lytic defect visible in bone and caused by localized bone death or necrosis (Byers 2005; Ortner 2003). Necrosis can be caused by an injury, which reduces, or completely stops blood flow to a particular part of the bone, eventually resulting in the death of the bone tissue (Byers 2005; Ortner 2003). When the bone tissue dies it leaves a cavity in the surface of the bone and occasionally a free-floating osteological fragment (Ortner 2003). Schmorl nodes are usually associated with physical activities that are highly demanding and place strain on the spine, such as lifting or carrying heavy loads, amongst

other heavy labour (Pfirrmann & Resnick 2001; Larsen 1997).

Dental pathology observed on the skeletal remains further provides a picture of these people’s diet and health (Roberts & Manchester 1995). The oral cavity functions first and foremost as a food processor (Lukacs 1989). The composition and consistency of foods consumed determine the kinds of micro-organisms that flourish in the oral cavity and the nature of biomechanical forces affecting the teeth and jaws (Lukacs 1989). Anatomical and pathological studies of the oral cavity thus provide direct evidence of the type of diet the individual representing the skeletal remains had during his or her life (Lukacs 1989). Four of the Du Preezhoeck individuals (DPH 05.a, DPH 05.b, DPH 06 and DPH 08) presented carious lesions (Fig. 7). Dental caries is the most common dental disease and is reported for archaeological populations more frequently than any other (Roberts & Manchester 1995). Dental caries is a disease process that is characterized by centralized demineralization of dental hard tissue by organic acids produced by



FIG. 6. Lumbar vertebra with Schmorl nodes.

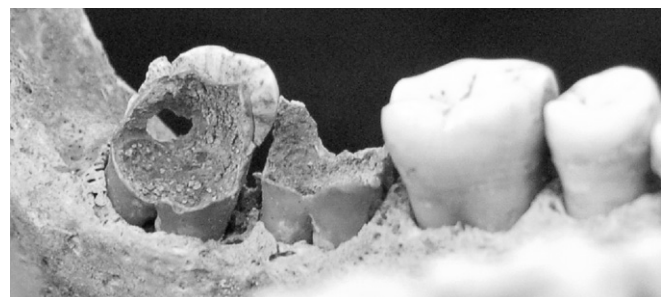


FIG. 7. Dental caries of the second and third permanent molars.

**TABLE 3.** Results of physical anthropological analysis of Du Preezhoek skeletal remains.

Individual	Age	Sex	Ancestry	Dental pathology	Pathology
DPH 01	7–8 years	Unknown	Unknown	Dental caries and antemortem tooth loss	None
DPH 02	2–3 years	Unknown	Unknown	None	None
DPH 03	1 year ± 3 months	Unknown	Unknown	None	None
DPH 04	Birth – 3 months	Unknown	Unknown	None	None
DPH 05.a	30–40 years	Female	European	Dentine patches, dental calculus, dental caries, genetic defect of abnormal size of upper right third molar, and possible undeveloped upper left third molar	Osteophytes on lower lumbar vertebrae, Schmorl nodes on lumbar vertebrae, and osteophytic lipping of the left and right proximal ends of the ulna, radius, femur and calcaneus
DPH 05.b	12–16 years	Unknown	European	Dentine patches, dental caries and enamel hypoplasia	Schmorl nodes on the lumbar vertebrae, subperiosteal bone growth on the left and right radius, ulna and tibia
DPH 06	35–50 years	Female	European	Dentine patches, severe dental caries, and antemortem tooth loss	None
DPH 07	Birth–6 months	Unknown	Unknown	None	None
DPH 08	30–50 years	Female	Mixed – European and African	Dentine patches, dental caries, dental calculus, enamel hypoplasia and periodontal disease	Osteophytic lipping of the proximal ends of the left and right humerus, ulna, femur, and tibia. Subperiosteal bone growth on the left and right tibia and fibula and cranium
DPH 09	9 months ± 3 months	Unknown	Unknown	None	None
DPH 10	Birth–6 months	Unknown	Unknown	None	None

bacterial fermentation of dietary carbohydrates, especially sugars (Larsen 1997; Roberts & Manchester 1995). If the right combination of plaque bacteria and sugars – especially sucrose – occurs, then the acids produced will demineralize the teeth and leave cavities (Hillson 1998; Roberts & Manchester 1995). Dental caries can manifest in different stages of severity from small enamel opacities to extensive cavitations involving partial or complete loss of tooth crowns and roots (Hillson 1998; Larsen 1997; Ortner 2003; Roberts & Manchester 1995). The degree of dental caries observed from the Du Preezhoek skeletal remains also varied from small carious lesions to very large and serious lesions as seen in DPH 06.

Dental calculus (Fig. 8) was also observed in the adult remains (DPH 05.a, DPH 06 and DPH 08) and is another commonly observed dental disease, especially in archaeological remains (Roberts & Manchester 1995). Dental calculus is mineralized plaque, which accumulates at the base of a living plaque deposit, and is attached to the surface of the tooth (Hillson

**FIG. 8.** Mandible with dental calculus on molars.

1998). Dental plaque consists of microorganisms which accumulate in the mouth, embedded in a matrix partly composed by the organisms themselves and partly derived from proteins in the saliva (Roberts & Manchester 1995). This process is sped up when there is sucrose in the diet (Roberts & Manchester 1995). There are two types of dental calculus that can be observed, namely supragingival calculus that accumulates above the gums, and subgingival calculus that accumulates below the gums (Roberts & Manchester 1995). The supragingival calculus is the more common of the two and the only one observed on the Du Preezhoek remains.

Another dental disease observed in one of the female skeletons (DPH 08), which is closely associated with dental calculus and scurvy, is periodontal disease. Calculus accumulates in the crevices between the tooth and soft tissue and bone of the jaw, forming periodontal pockets that are a major influencing factor in the development of periodontal disease (Roberts & Manchester 1995). This can cause inflammation of the gums which, in repeat occurrence, can cause alveolar bone loss or the retraction of the alveolar bone from the tooth crown (Hillson 1998). Periodontal disease is one of the most common dental diseases found in archaeological human skeletal remains, as well as present day human skeletal remains, and acts as a major cause of tooth loss (Roberts & Manchester 1995).

Furthermore dental remains can indicate factors of health in a person's life, especially in the growing years when bone and teeth are still developing (Roberts & Manchester 1995). In bioarchaeology and biological anthropology, dental enamel defects have attracted the attention of many researchers (Roberts & Manchester 1995). These enamel defects are also referred to as 'indicators of stress'. One of the most common defects is that of enamel hypoplasia (Roberts & Manchester 1995). Like the production of skeletal tissue, the formation of

enamel on growing teeth is a regular process that is subject to factors that may either slow or stop it (Larsen 1997). Tooth enamel is especially sensitive to metabolic insults arising from nutritional deficiencies or disease, and because enamel does not remodel, it therefore provides permanent visual indicators for stress (Larsen 1997). Almost any environmental factor leading to metabolic disturbance will result in visible changes in the structure of enamel (Larsen 1997). These changes can be observed as horizontal lines, pits or grooves on the enamel surface (Roberts & Manchester 1995). These defects can occur only while the teeth are developing, and remain as a permanent record into adulthood and beyond the grave (Roberts & Manchester 1995). Many factors play a role in the appearance of enamel hypoplasia but they can broadly be categorized as either due to nutritional deficiencies, or childhood illnesses (Roberts & Manchester 1995). The prevalence of enamel hypoplasia on the teeth of DPH 05.b and DPH 08 provides insight into the childhood living conditions and health of these adults – the possible causes of the defect's prevalence either being that as children these individuals were frequently ill or that they had some form of deficiency, such as a lack of vitamin C or iron, while growing up.

#### PROVISIONAL IDENTIFICATION AS PROVIDED FOR EACH SKELETON

##### DPH 01

One candidate for the skeletal remains of DPH 01 was a Du Preez grandchild – Hester Susanna Catharina Elizabeth du Preez. She was the daughter of Petrus Johannes du Preez and Johanna Hendrina (du Preez) du Preez and a grandchild of Jan du Preez. She was born 21 September 1883, but there is no record of a date for her death (Du Preez 2003: 271). There is no indication that she was married or had any children, which may suggest that she died before she reached adulthood or that she simply did not make it into the record books. Taking 1890 as the last year that she could have been buried at Du Preezhoek, one can allocate an approximate age of  $\pm 7$  years to her. According to the skeletal remains, DPH 01 was a child between the ages of 7–8 years with unknown sex due to the young age. Although the age estimate based on partial genealogical data is not accurate, this is the only viable candidate from the Du Preez and Van der Walt family trees that could possibly be linked to DPH 01.

##### DPH 02

Charles Peter van der Walt, son of Hendrik Petrus van der Walt, and grandson of Andries Petrus van der Walt, is a possible candidate for DPH 02. Charles Peter was born in 1878 and died in 1882 (Van der Walt *et al.* 1989: 330; Van der Walt *et al.* 1998: 292) and fits the DPH 02 age range of 2–3 years old.

##### DPH 03, DPH 04, DPH 07, DPH 09, DPH 10

The very young ages of DPH 03, DPH 04, DPH 07, DPH 09, and DPH 10 (less than two years old) makes linkage to Du Preez and Van der Walt children very hard to prove. This is because no child under the age of two years was given a date of death – the records state only that the children died when very young. From the Du Preez family the following infants were born and died between 1848–1890:

- Maria Magdalena du Preez, born 27 March 1878 and died very young; the first child and daughter of Johannes Petrus du Preez and Catharina Magdalena (du Preez) du Preez, and granddaughter of Jan du Preez (Du Preez 2003: 274).

- Johanna Marthina du Preez, born 5 June 1889 and died very young; the first child and daughter of Johannes Petrus du Preez and Cornelia Margaretha Francina (Botes) du Preez, and granddaughter of Jan du Preez (Du Preez 2003: 276).

From the Van der Walt families the following infants were born and died between 1848 and 1890:

- Hendrik Petrus van der Walt, birth and death dates unknown, but he must have lived in the latter half of the 1860s (taking into account the time span after the child before him and the child after him were born) and is said to have died very young; the sixth child and fourth son of Hendrik Petrus van der Walt and Johanna Adriana (Smit) van der Walt, and grandson of Andries van der Walt (Van der Walt *et al.* 1989: 329; Van der Walt *et al.* 1998: 290).
- Van der Walt child (no name given), birth and death dates unknown, but this child must have lived between 1875 and 1876 (time span between younger brother/sister's birth and mother's death 26 August 1876) and is said to have died very young. He or she was the second child of Hendrik Petrus van der Walt and Elizabeth Catharina (Erasmus) van der Walt, and a grandchild of Andries van der Walt (Van der Walt *et al.* 1989: 330; Van der Walt *et al.* 1998: 292).
- Van der Walt child (no name given), birth and death dates unknown, but this child must have lived between 1875 and 1876 (time span of younger sister's/brother's birth and mother's death 26 August 1876) and is said to have died very young (Van der Walt *et al.* 1989: 330; Van der Walt *et al.* 1998: 292). He or she was the third child of Hendrik Petrus van der Walt and Elizabeth Catharina (Erasmus) van der Walt, and a grandchild of Andries van der Walt (Van der Walt *et al.* 1989: 330; Van der Walt *et al.* 1998: 292).

##### DPH 05.a, DPH 06, DPH 08

DPH 05.a, DPH 06, and DPH 08 are all adult females between the ages of 30 and 60 years. It is therefore difficult to distinguish between all the possible genealogical candidates. For this reason all the likely candidates are mentioned below.

Women from the Du Preez family who died before 1890:

- Cornelia Magdalena du Preez, born 11 December 1848 with no date for her death (Du Preez 2003: 270). She was married but it is uncertain whether she had any children. There is no mention of siblings. If she died before 1890 she would have been in her late 30s, early 40s, fitting most closely the age range of DPH 05.a (30–40 years) and DPH 06 (35–50 years). She was the first daughter of Jan du Preez and Maria Magdalena (van der Walt) du Preez (Du Preez 2003: 270).
- Johanna Hendrina (du Preez) du Preez, born 27 September 1853 and died 26 July 1888 (Du Preez 2003: 270). She was 34 years old at death and fits the estimated age range of DPH 05.a who was between 30 and 40 years old. DPH 05.a also has a *pre-auricular sulcus* on the pelvic bones, showing that she had at least one child. Johanna Hendrina du Preez was the wife of Petrus Johannes du Preez, son of Jan du Preez, and she had six children (Du Preez 2003: 270).
- Catharina Magdalena du Preez, born 4 May 1852 with no date of death (Du Preez 2003: 271). She was married but it is uncertain whether she had any children or siblings. If she died before 1890 she would have been in her middle to late 30s, fitting with the age of DPH 06 (35–50 years). She was the second daughter of Jan du Preez and Maria Magdalena (van der Walt) du Preez (Du Preez 2003: 270).

- Anna Maria Danielina du Preez, born 25 March 1855 with no date of death (Du Preez 2003: 274). It is uncertain whether she was married or had any children. If she had reached adulthood and died before 1890, she might have reached an age of 20 to 30, fitting the DPH 05.b (30–40 years) age estimate. She was the third daughter of Jan du Preez and Maria Magdalena (van der Walt) du Preez (Du Preez 2003: 274).
- Catharina Magdalena (du Preez) du Preez, born 24 January 1859 and died 25 November 1886 at 27 years of age (Du Preez 2003: 274). She was the wife of Johannes Petrus du Preez, son of Jan du Preez, and had five children (Du Preez 2003: 274). Although she falls outside the age range of the three adult female skeletons, she was still considered owing to the fact that age estimations in adult skeletal remains are not always very accurate.
- Maria Magdalena du Preez, born in 1862 with no date of death (Du Preez 2003: 279). If she reached adulthood, as her marital status suggests (Du Preez 2003: 279), and died before 1890, she would have been in her 20s. It is also uncertain whether she had any children or siblings. She too may fall outside the age estimates for DPH 05.a, DPH 06 and DPH 08 but the combination of some deviation from the estimate and the uncertainty inherent in using genealogical data, makes it worthwhile at least to consider her candidature. She was the fifth daughter of Jan du Preez and Maria Magdalena (van der Walt) du Preez (Du Preez 2003: 279).

During the interviews with Mr Antoon du Preez (2007), he also identified some of the following individuals as possible candidates: Cornelia Magdalena du Preez; Johanna Hendrina du Preez; Catharina Magdalena du Preez; Anna Maria Danielina du Preez; Johanna Adriana du Preez; and Maria Magdalena du Preez.

Individuals from the Van der Walt family who died before 1890:

- Johanna Adriana (Smit) van der Walt, no birth date, but died in the late 1860s. If she was born in or around the year of her husband's birth (17 February 1836), she would have been in her late 20s to early 30s (Van der Walt *et al.* 1989: 328; Van der Walt *et al.* 1998: 289). She was married to Hendrik Petrus van der Walt, son of Andries van der Walt, and had six children (Van der Walt *et al.* 1989: 328; Van der Walt *et al.* 1998: 289). This fits well with DPH 05.a, with determined age range of 30–40 years and the presence of a *pre-auricular sulcus* on the pelvic bones, indicating that she had at least one child.
- Hester Maria (Smit) van der Walt, born in 1850 and died 21 September 1889, at age 39 (Van der Walt *et al.* 1989: 334; Van der Walt *et al.* 1998: 297). She was married to Andries Petrus Jacobus van der Walt, son of Andries van der Walt, and they had at least eight children (Van der Walt *et al.* 1989: 334; Van der Walt *et al.* 1998: 297). This fits well with the determined ages of 30–40 years and 30–60 years respectively for DPH 06 and DPH 08. Both skeletons show *pre-auricular sulcus* on the pelvic bones identifying at least one episode of childbirth.

#### DPH 05.b

The only possible candidate for DPH 05.b was a Du Preez grandchild – Petrus Johannes du Preez, born 25 December 1877 and died in 1888 (Du Preez 2003: 270). He was the third son of Petrus Johannes du Preez, and Johanna Hendrina (du Preez) du Preez (Du Preez 2003: 270). His age at death of 11 years fits the death estimate for DPH 05.b of 12–16 years old, bearing in mind that DPH 05.b could have been male or female). An

interesting observation is that during the excavation of the skeletal remains, DPH 05.a and DPH 05.b were found close to each other with DPH 05.b partially on top of DPH 05.a. This positioning may suggest that these two individuals were closely related and/or suggests that DPH 05.b died shortly after DPH 05.a. Petrus Johannes du Preez and his mother, Johanna Hendrina (du Preez) du Preez, died in the same year (1888).

#### DISCUSSION

Comparing the primary data obtained from the physical anthropological analysis of the human skeletal remains recovered from Du Preezhoek with the secondary data obtained from the genealogical data, it is possible, although with no certainty, to link known Du Preez and Van der Walt family members with the Du Preezhoek graves. Human skeletal remains hold a great deal of information that can, in rare cases, be linked to genealogical data to determine individual identities. Nevertheless, skeletal remains can provide much more insight than just the possible identification of remains. Skeletal pathology enables one to create a picture of personal lifestyles and, therefore, also gives insights into varied aspects of social life in particular eras in history.

Factors of daily life such as diet, health and physical lifestyle could be identified in the Du Preezhoek remains by looking at the skeletal pathologies, thereby providing a window into the pioneer life of 19th century Pretoria. Furthermore, demographic data can also be useful in understanding aspects of social history and identity, specifically in the history of the Voortrekkers and the pioneer families who settled throughout southern Africa.

It has been noted that DPH 08 presented both European and African attributes when the ancestry was determined. According to Van Aswegen (1989: 142) 7.2% of the genetic make-up of all European Afrikaners is non-European. Furthermore, between the 17th to 18th centuries it was not uncommon for colonists (of European ancestry) to marry or have sexual relations with the slaves, mainly from indigenous populations (Bosman *et al.* 1938; Giliomee 2003; Van Aswegen 1989). "Because of the shortage of white women at the settlement, [colonial community in the Cape] sex and marriage across the colour-line were common" (Du Pre 1992: 11). "There were marriages between White men and slave women born at the Cape and between White men and free women of mixed descent, whilst extramarital relations between White men and all categories of women took place" (Du Pre 1992: 12). According to Giliomee (2003) even as late as the 19th century 16% of all marriages in Cape Town were mixed marriages.

This then poses a problem for physical anthropological analysis of South African skeletal remains, with specific reference to pioneer and Afrikaner populations. The determination of ancestry from South African skeletal remains can therefore not be based on the traditional North American data sets which represent a clear-cut assignment of ancestry as being either Caucasoid, Mongoloid or Negroid (Byers 2005). Rather, region-specific data sets should be used, clearly taking into account admixture throughout a region and its population's history. Pioneer skeletal remains therefore attest to their European parentage as well as early colonial interaction with local populations resulting in the large scale ancestral mixture seen in historic and modern skeletal samples. Admixture can provide an insightful means of understanding interactions on a genetic and social level and here reveals the early interaction and exchange of genes between colonial Europeans and local South African populations.



## CONCLUSION

The Du Preezhoek graveyard, situated in the Fountains Valley, Pretoria, revealed the skeletal remains of 11 individuals, the definite identity of which remains unknown. Yet, by combining archaeological and historical information with data gathered directly from the skeletal material by physical anthropological techniques, it became possible to determine the date range for the graveyard as well as provide some possible connections with prior owners of the original farm.

The graveyard was situated in the Fountains Valley area, which used to be part of the farm Elandspoort, before it became city property. The first owners of the farm were the Bronkhorst family, who lived there from 1842. There is no indication that the Bronkhorsts created or used the cemetery in question, and it is only with the arrival of the Du Preez family that reference is made to the graveyard. The Du Preez family bought part of the Elandspoort farm from the Bronkhorst family in 1848 and the area was renamed Du Preezhoek. The graveyard was therefore most probably created and used by the Du Preez family from 1848 onwards. The presence of three Martini-Henry bullet casings in one of the graves suggests that the graveyard was used at least until 1880/1881 when this rifle was imported and used in the old Transvaal. Furthermore, the graveyard was situated next to the old NZASM Bridge, which was built to cross the Apies River between 1890 and 1893. Therefore it can be assumed that after the period of 1890 the graveyard was no longer used. This provides a date range of 1848 to 1890 for the use of the graveyard.

With the date range as well as archival information regarding ownership of the farm Elandspoort, possible connections between the occupants of the farm and the Du Preezhoek skeletal remains can be made. From the period 1848 to 1890 the farm Elandspoort belonged to the Du Preez family and therefore it can be assumed that the remains belong to some of this family's members. Yet, there is also a marital connection with the Van der Walt family and, therefore, members of this family should also be considered for the Du Preezhoek skeletal remains. With demographic information gathered from the physical anthropological analysis, a trial exercise could be undertaken where genealogical data was compared to demographic data. Some individuals from the Du Preez and Van der Walt families could be given precedence when looking at possible identities from the Du Preezhoek remains. Unfortunately, due to the lack of substantial grave markers or grave registers, the skeletons remain unidentified to specific individuals. Nevertheless, other useful information gathered from the skeletal remains provides insight into the life of these people as pioneer families living in 19th century Pretoria.

Pathology observed on the skeletal remains paints a picture of some hardships endured by these people; hardships which can be associated with a pioneer lifestyle. The presence of subperiosteal bone growth and enamel hypoplasia suggests frequent illness or malnutrition throughout childhood and adulthood. The high prevalence of dental caries and dental calculus observed on most of the adult remains suggests a diet rich in carbohydrates. Other indicators of these people's daily hardships were reflected by the presence of Schmorl nodes on the lumbar vertebrae, as well as the osteophytic lipping of the proximal ends of the humerus, ulna, femur and tibia. This suggests that these individuals engaged in strenuous physical labour, probably synonymous with the life of 19th century pioneers.

Even though this is a small comparative sample, and does not provide a good collective view of overall life amongst pioneer families, it still provides insight into this particular

family, which might be representative of the many aspects of daily life amongst pioneer families in 19th century Pretoria. Overall, insight can be gained into one of 19th century Pretoria's pioneer families, considering their daily activities and the social situations that shaped their lives. Ancestral mixture clearly visible in one of the individuals reveals the early interactions between various races living in South Africa. This tells the story of the large-scale intermingling and tolerance across racial boundaries, which would only later become warped to fit the governing body's ideas of racial segregation and inequality that became South Africa's apartheid regime; conveniently denying the recent past and what is effectively pioneer heritage.

The ideal vision for the future of African archaeology would be for bioarchaeology, in conjunction with other avenues of research, to be applied to the diverse African archaeological records, starting with the analyses of individuals *in situ*, and working from there toward comparative studies. Overall health or living conditions of populations can be determined as more information comes to the fore, but more importantly, we might discover the intermingling of groups or the sudden disappearance of others, and the possible reasons why, which will showcase our country's diverse social history in the world of archaeology.

## NOTE

<sup>1</sup>The name Pretoria is used here to refer directly to the era of Pioneer/Voortrekker expansion along the Apies River from the early 1840s onwards.

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- Map of 1877 illustrating the boundaries of early Pretoria. Van Der Waal Collection, Africana, University of Pretoria.