

AN EVALUATION OF THE  
IMPORTANCE OF PLANT RESOURCES  
TO RURAL COMMUNITIES - A CASE  
STUDY OF HEUNINGVLEI IN THE  
CEDERBERG

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- ABSTRACT -

Within the framework of living resource conservation as advocated by the World Conservation Strategy, this case study investigates the utilitarian value of indigenous plant resources as a supplementary or "hidden" income for a rural community at Heuningvlei. The objectives of the study were to document the rapidly disappearing customary knowledge regarding the utilisation of plant resources, to gain an indication of whether a sustainable method of utilisation exists within the case study community, and to interpret the results in terms of conservation objectives.

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## CHAPTER ONE

### INTRODUCTION

In the developing world the conservation of floral diversity and its role in indigenous societies is often given low priority in comparison to the immediate needs of human welfare.

Expanding human populations and the accompanying spread of urban and industrial infrastructure are placing increasing pressure on land, natural resources and traditional, inherently sustainable, rural lifestyles.

All too often, a dichotomy exists between conservation and development, with the one perceived as impeding the other's progress or success. The World Conservation Strategy's crucial message, however, is that conservation is concerned with human survival and sustainable development. Conservation thus aims to facilitate, rather than hinder, improved qualities of life and true development, but in a world where the importance of undisturbed ecological processes is not well recognized, species require an immediate utilitarian value in order to be deemed worthy of conserving.

In providing a resource, plants gain a utilitarian value in that they play an important role in the socio-economic welfare of semi-subsistent rural communities. Sustainable utilization of plant species is a potential means of ensuring their survival.

This research sets out, within the living-resource conservation framework of the World Conservation Strategy, on a multi-dimensional mission to simultaneously investigate, by means of a case study, the utilitarian value of indigenous plant species, as well as documenting customary knowledge regarding the use of those plant resources. This knowledge has been accumulated over centuries and is rapidly being lost. The significance of this information is both for recording the nature of human cultural interaction with the environment and the consequences thereof, as well in the potential application



of this knowledge to agricultural and medical research. This project is not concerned with the last aspect, but rather concentrates on a smaller scale of plant utilisation, whereby indigenous plant resources are an integral component of the well-being of a rural community. It is the 'hidden income' from these resources which provides, in many instances, a buffer against poverty for countless indigenous communities (Cunningham; 1983).

As the world becomes more urbanised, commercially produced foods, medicines, fuels and building materials become more readily available to cater for the demands of urban populations. The use of these commodities is not restricted to urban regions, but has permeated through to even the most remote of rural settlements who make use of such items as enamel mugs, corrugated iron, white sugar and patent medicines. The appeal of commercially prepared commodities is facilitated through being attractively packaged and requiring little or no effort to prepare, resulting, in many instances, in the decreasing utilization of plants as a resource base in favour of commercial products, as well as the concurrent loss of the customary knowledge regarding the use of these plants.

This study is not a paternalistic attempt at forcibly 'preserving' a romantic notion of indigenous culture and plant medicine, but is concerned rather with the recording of customary plant utilisation, both for posterity and as an indicator of plant resource value to a rural community. This research also attempts to gain an indication of whether the intensity of plant use has any adverse effects on the status of species utilized, in an attempt to gauge the existence or level of sustainable utilisation of freely available resources by the Heuningvlei community.

The aim of this research was, therefore, to evaluate the importance of plant resources to a rural community, with the following objectives :

1. to document the range of plant species utilized by the Heuningvlei community, the parts of the plants used and the customary knowledge regarding such use;
2. to gain an indication of the extent to which these resources provide a hidden income;
3. to observe and record the present intensity of plant use as an indication of whether intensity of use is related to deterioration of species status, or whether a sustainable method of plant utilization exists.

In essence, this research attempts to provide an example of how a rural community, through sustainable utilization of veld products, can ensure both it's socio-economic well-being, the preservation of customary knowledge accumulated over centuries, as well as the conservation of the species within the ecosystem upon which the community is dependent.

## CHAPTER TWO

### THE CONTEXT OF INDIGENOUS PLANT USE

#### 2.1 The role of ethnobotany

"To find alternative paths for the development of regions that leads to greater human niches for more people, we need to begin with a less arrogant view of the superiority of our world of shining hardware, and develop a greater appreciation of the wisdom and potential power of those we would teach and guide."

(Keesing; 1980)

Cunningham (1989) defines the term "ethnobotany" as 'the study of plant use by people for medicine, food supplements, shelter, fuel and other products'.

The main focus of ethnobotanical research in South Africa has in the past been to record the uses of plants and their vernacular names (Liengme; 1983). Such studies are valuable in that they document part of the customary knowledge, mostly oral and unrecorded, of indigenous people whose deeply-entrenched cultures and intimate knowledge of the veld are being eroded, often unintentionally, through modernisation processes. Customary knowledge, according to Cunningham (1989), is the key to indigenous plant use, especially in areas with high population density and low agricultural potential. Such investigations also record an aspect of the nature of human cultural interaction with the environment.

Ethnobotany also plays an important role in identifying and 'promoting' diversity of plant resource use by rural people. One such study was executed by Peiser (1989), who attempted to formulate a handbook of efficient plant-food use for rural communities in a low agricultural-potential area of Natal, with the aim of supplementing nutritional bases and encouraging sustainable utilisation of the plant resources.

Numerous peripheral studies of this nature have analysed indigenous plant specimens utilised by local people for nutritional content, with daily intake values of fresh plant foods used as a basis for RDA (Recommended Daily Allowance) requirements. Quin in 1959 did an intensive study of food use by Pedi people, testing for calorific compositions.

More recent research has been carried out by Tony Cunningham, of the Natural Resources Institute of Natal - the objective of Cunningham's 1983-1985 study was to assess the quantity of indigenous plant material used in a commercial craftwork project initiated to generate income for rural people in Maputaland.

## 2.2 Archaeological evidence of plant resource use

According to Deacon (1976) Southern Cape people appear to have migrated across the landscape in a seasonal cycle geared to the availability of Iridaceae corms (Sealy; 1986). There is evidence that seasonal plant growth had an important influence on the behaviour of these prehistoric people (Sealy; 1986 ; Parkington, pers.comm.; 1990). Nomadic hunter-gatherers appear to have spent summers in the river valleys of the Cape fold mountain belts gathering corms, whilst in winter the seasonal unpalatability of plant foods induced these people to migrate to the West Coast, where shellfish provided a food source. Evidence for this has been derived from sometimes dubious ethnographic reports of travellers, and confirmed by findings of corm casings in archaeological sites. The pattern and quantity of these remnants suggests human use and consumption.

Excavations at various sites in the Western Cape have revealed remains of Diospyros spp., Leucadendron spp., Pelargonium spp., Carpobrotus spp. and Zantedeschia (Sealy; 1986).

Prehistoric people's intimate knowledge of plants was derived from their dependence upon the ecosystem as a resource base for foods, medicines, building materials and fuel. Much of this customary knowledge appears to have been retained through rural peoples' use of wild plants, although

the emphasis has changed in that indigenous plants no longer play a vital role as 'veld foods' - subsistence agriculture and the availability of commercial foodstuffs have allowed people to become selective, and not rely wholly upon the ecosystem as a source of food (pers.obs.).

### 2.3 Plants as a resource to indigenous people

Although difficult to assess, the replacement value of plant resources in providing an 'income' for impoverished people should not be underestimated (Cunningham : 1989). Plants provide a source of fuelwood, building material, craftwork material, food supplements etc. for many of southern Africa's indigenous peoples. Although rural people are particularly dependent upon indigenous plants, there is also a demand from urban communities for herbal medicines, fuelwood and crafts for export (Cunningham : 1989). Cunningham estimates that thornveld is worth at least R425 per year per family of human inhabitants. Freely available plant resources provide an important opportunity for semi-subsistence and self-employment in the realistic realm of rising unemployment.

### 2.5 Commercial use of indigenous plants

An estimated 15 000 people derive an income from the wildflower industry in the South-western Cape (Cowling; 1990). Estimates of local sales are, however, extremely difficult to approximate, although an indication of the intensity of utilization of wildflowers within the Fynbos Biome can be derived from the numbers of dried and fresh wildflower sellers and exporters in the SW Cape. In 1988, Cowling's investigations revealed eight established wildflower export enterprises. Interviews with several local driedflower concerns revealed that the bulk of their trade comprised Fynbos elements, including Helichrysum sp, Helipterum, Restios and Erica sp.

Proteoid elements are most commonly sold fresh by both formal and informal concerns, at relatively lower prices than their exotic counterparts (pers.obs.). Most wildflower harvesting is carried out in predominantly poorer

agricultural land not suited to farming (Cowling;1990 and pers.obs.) and thus involves minimal land-use conflict. Over 2 500 ha are cultivated in the SW Cape for production of fresh flowers (Cowling;1990). Fynbos, however, is not recognized by the Department of Agriculture as an agricultural resource, and there is thus no governmental support for research or management of wildflower harvesting. Thus little is known about biocide effects on both pollination and reproduction, the intensity of harvesting and the effects of harvesting on post-fire populations (Cowling;1990) - a "woeful lack of ecological knowledge regarding veld harvesting prevails".

Other commercially viable indigenous plant species include Carpobrotus edulis, dried and sold as a sweetmeat called 'suurvye' or sourfigs by both grocers and informal roadside vendors (pers.obs.), as well as Agathosma species. The leaves of this plant are collected throughout the central and southern Cederberg, generally by farmworkers, and sold to commercial concerns, such as the local pharmacies and roadside stalls. The leaves are retailed dried as the well-documented herbal remedy 'buchu' (pers.comm.;manager of VanMeerhof Farm Stall, Piekernierskloofpas.3).



## CHAPTER THREE

### METHODOLOGY

#### 3.1 Parameters of the study

In order to collect data on customary plant use a case study was undertaken in the Cederberg. The reason for this is that it would have been impossible to evaluate the economic importance of plants as resources to rural communities, in a global sense, within the scope of this research. A case study is a valuable method of investigation (Casley and Lurey ; 1981), often particularly appropriate in the context of wider investigation. Case studies employ a mixture of methods, such as personal observation (which may develop into participation), the use of informants for current and historical data, straightforward interviewing and the study of relevant documents and records. This combination of methods, advised by Casley and Lurey in "Data collection in Developing countries" (1981) proved to be the most flexible approach, particularly appropriate in the study of a community.

The case study thus provides a scenario of customary plant use by the rural community of Heuningvlei, as example from the northern Cederberg.

The research was in part sponsored by a grant from the Botany Department at UCT to further the ethnobotanical record in southern Africa.

#### 3.1.1 Selection of study site

The methodology adopted for a case study must be consistent with the aims and objectives of that study (Gawith; 1990). The community at Heuningvlei was thus selected for the case study for several reasons :

- the settlement is situated in an area of mountain Fynbos unspoilt by any urban development ;
- customary Fynbos use is part of the community's lifestyle;
- the small population allowed for detailed study of plant use.

### 3.2 Establishment of data :

#### 3.2.1 Introduction to the community

I contacted a Mr. van der Merwe at Algeria Forestry Station for background information regarding the Heuningvlei settlement, and was referred to Mr. Abrahams, the village dominee and schoolmaster. The first field-trip to Heuningvlei (31/5/1991 - 2/6/1991) was not intended for data collection, but rather to establish a relationship with the people whose customary knowledge would provide the backbone for this research. This visit was thus spent in informal conversation, often while drinking rooibos tea around hearth fires.

#### 3.2.2 Data collection

I subsequently spent the equivalent of 11 days, in three separate visits, living with the community and partaking in their everyday activities. My aim was to observe the daily use of plant resources, to gain an insight into the socio-economic context in which plant resources play a role.

Two elder members of the community, Dawid Engelbrecht and Isak Ockhuis, accompanied me on several 'veld' walks indicating which plants were used for what purposes, as well as the methods by which medicinal remedies are prepared. Specimens of most plant species were collected and marked with vernacular names, for later botanical identification.

Data were also collected from informal interviews with randomly selected members of the community. In order to do justice to the extensive nature of the research, an informal, open-ended interview schedule was adopted.

In accordance with suitable contemporary methods of data collection, a written questionnaire, intended to be completed by the heads of households, was formulated and distributed within the community. There initially appeared to be no adversity on the part of the people to completing the questions.

The objectives of the questionnaire were :



- to assess the general socio-economic status of the community, in order to gain an insight of the context in which use of plant resources functions;
- to gain an indication of the range of plants utilized throughout the community, and the access which each household had in terms of obtaining the plants;
- to obtain information on the customary use of plant resources; and
- to identify attitudes regarding the use, and perceived importance, of plants as resources to the community.

A major problem was encountered with the completion of the questionnaire. Heads of households felt suspicious about filling in documents regarding their everyday activities and income. A more acceptable method of gathering information wasq informal, open-ended interviewing. The data set may have been more complete and accurate through the completion of the questionnaire, but in the interests of maintaining good relationships with the community, the issue was not pressed.

Other sources and means of data collection included correspondence with the Director of the Clanwilliam Rooibos Tea Control Board and personal communication with various people familiar with the physical and biotic environment of the northern Cederberg.

### 3.2.3 Identification of plant specimens

Each plant was referenced according to both vernacular name, using Smith (1966), as well as botanical name, making use of a range of contemporary and dated works, in order to ascertain whether these species and their role in indigenous lifestyles, had been previously documented. This type of referencing was also aimed at identifying possible changes in use, frequency, distribution and status of the various species. References for this purpose are listed in Appendix 2.

## CHAPTER FOUR

### CASE STUDY AT HEUNINGVLEI – AN INTRODUCTION

#### 4.1 Physical and Ecological Features

##### 4.1.1 Geographical Location

Heuningvlei is situated in the northern Cedarberg, approximately 60 km from Clanwilliam, via Pakhuis pass, and 15 km from Wuppertal.

The settlement is geographically located at 32°12'S;19°06'E, and is overlooked by the impressive Krakadouw Peaks to the west, a rock-climbing "Mecca" which brings occasional visitors to the community.

##### 4.1.2 Geology and soils of the region

The Cedarberg is situated in the Cape Fold Mountain Belt, in the heart of the geological formation known as the Cape supergroup. This formation consists of three systems, laid down at different geological periods (Granger;1983), composed of erosion-resistant, quartzitic sandstone of the Table Mountain Series (TMS), softer Bokkeveld series shales and the Witteberg series. The TMS soils are unusually coarse-grained, acidic and nutrient-poor (Bond and Goldblatt; 1983). A geological division occurs along the eastern edge of the Cedarberg range, on a NW-SE axis, between the TMS and the Bokkeveld Shales of the Karoo, each constituting their own particular classification of natural vegetation. The TMS in this region is represented by the Nardouw formation, the youngest and uppermost formation of the Cape supergroup (Granger;1983).

##### 4.1.3 Vegetation types

The Cedarberg vegetation falls is part of the highly diverse Cape Floristic Kingdom, with the north-eastern edge of the range bordering with the more semi-desert Karoid vegetation, as defined by Acocks (1953). This boundary is distinctly

visible in terms of geologically-determined vegetation types along the Ceres/Wuppertal road - as one heads north along this road, the Karoo-Fynbos interface is easily discernible, with the succulent and semi-desert Karoo scrub on the eastern road boundary, and the Fynbos elements on the left (pers.obs.).

These two vegetation types were defined and described in detail by Acocks (1953). The Mountain Fynbos vegetation is characterised by the sclerophyllous nature of all woody taxa, and by the presence of large numbers of species and individuals of Asteraceae, Restionaceae, Ericaceae and Rutaceae (Bond and Goldblatt ; 1984). For the purposes of this paper, research has been concentrated on the Mountain Fynbos elements of the region, primarily because of the predominance of its role as a customary resource to the case study community.

#### 4.1.4 Hydrological and Climatic factors

No temperature records could be located for Heuningvlei, nor for any of the surrounding settlements, but the average in the Cederberg range from below zero in July (Granger; 1982 and pers.obs.) to almost 40° in Summer (pers.obs.and pers.comm.Heuningvlei residents and Krakadouw climbers).

Heuningvlei lies in the Cape Winter rainfall region, with an average annual rainfall for a 28-year mean, from 1922 - 1950, ( Department of Transport; 1951) of 635.2mm. No updated precipitation records could be traced, although it is interesting to note that this average is more than twice that recorded for Wuppertal, some 400m lower (Granger; 1982).

Run-off from the surrounding mountains provides water in excess of that indicated by rainfall values. The unnamed river running through the southern end of the settlement provides a perennial water supply for both domestic and agricultural use.

#### 4.2 History of settlement and community

The name "Heuningvlei", according to Mr. Abrahams, is derived from "Honingvaleij" (valley of honey), apparently due to the abundance of wild honey in the area.

Oral tradition tells that a Mr. Scheerba, from Holland, was the founder of the settlement, sometime in the late 1700's. Scheerba stowed away on an Eastern-bound V.O.C. (Vereenigde Oostelike Compagnie, or "The Dutch East India Company") ship, which stopped at the Cape for fresh supplies. Heading inland, he apparently arrived in the valley in which the present settlement is located, naming it "Honingvaleij" and changing his name to "Ockhuizen" to avoid possible recognition as the 'Scheerba who murdered his friend'<sup>1</sup>. He married a Hottentot woman, whom he subsequently discovered was barren and could bear him no descendents. Ockhuizen then 'acquired' a Hottentot concubine, Vygie Swartz, who bore him 10 children. Ockhuizen's name was shortened to "Ockhuis" by one of the Rhenish missionaries, Rev. Willie Strassberger, who arrived in Wuppertal in 1904 (Granger; 1982). The Strassberger family are still an influential force in the area, operating the shoe factory, hotel and sawmill in Clanwilliam (Mr. Abrahams; pers comm. and pers. obs.).

After the original Ockhuis passed away, the family incurred financial difficulties and were assisted by the mission, which retained the title deeds for Heuningvlei until the family settled their debt. This occurred a second time, but the Ockhuis family was unable to repay the mission, which presently retains the title deeds and owns the land.

Today, Heuningvlei is the home of 20 'Coloured' families, mostly the descendents of Scheerba/Ockhuis - the majority of the families retain the surname Ockhuis, whilst marriage has introduced Engelbrechts, Jaantjies and Koopmans.

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<sup>1</sup>. Scheerba apparently stowed away as a result of mistakenly thinking he had killed his best friend in a fight over his girlfriend. He obviously wanted to avoid the consequences by escaping on an eastern-bound ship.

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## CHAPTER FIVE

### SOCIO-ECONOMIC FEATURES OF THE COMMUNITY

#### 5.1 Agriculture and land tenure

All the households are semi-subsistent, i.e.: they cultivate their own vegetables and keep sufficient small stock to meet most of their dietary requirements. All rely on Clanwilliam and Wuppertal for selected household commodities such as sugar, coffee, clothes, paint, furniture etc, but community remains essentially rural .

The local community rent land from the Moravian church, and a fairly informal system of land tenure prevails, similar to that operating in Wuppertal, (Granger 1982).

Land is worked on both an individual and communal basis, the latter providing a source of firewood, building materials and communal pasturage.

Every family has agricultural land, of two 'types' :

- "tuine" or vegetable gardens, usually situated in fairly close proximity to the household. Vegetable crops are planted according to what is required by the family, with annual production of a fairly wide range of subsistence crops, inter alia sweet potatoes, tomatoes, gem and queen squashes, cabbages, mielies, sugar and green beans, peas, pumpkins, and oats. The latter are grown to provide a Winter fodder supplement for livestock. Different crops are planted throughout the year, and irrigated by means of furrows diverting water from the stream.
- "lande" which are much larger and further away than the gardens. The "lande" are created by fencing off a suitable tract of land and burning it to clear the indigenous shrubs, the ash contributing nutrients to the soil. Crops cultivated are rooibos, rye and wheat



(the grain is taken to Wuppertal mill and the flour used for baking bread). Any surplus rye and wheat is sold to the Wuppertal Institute store.



FIGURE 5.1 Oats, maize, sweet potatoes and onions growing in the Engelbrecht's 'tuin' or vegetable garden. The path in the foreground leads to the house, illustrating the close proximity of 'tuine' and dwellings.

## 5.2 The production of Rooibos tea

Rooibos (Aspalathus linearis) is a fine example of an indigenous plant resource which has become commercially viable. Its leaves have been dried, crushed and used as a tea for centuries (Hout Bay Museum; 1989).

An uncultivated species of rooibos (also A. linearis) is common around the Heuningvlei area and is utilized by those households not growing the crop commercially, but it is more efficient, reliable and commercially viable to cultivate A. linearis as a harvestable crop.

Rooibos is sown in late winter (after ploughing in July) when soils are moist and temperatures have risen a little from the daily winter average of 7° (pers. obs.).

The crop has up to 10 years perennial growth with an annual summer harvest, the initial harvest obtained two years after planting. One hectare yields approximately 370 kg dry weight

of tea (pers.comm.: J.Barnard ; Rooibos Tea Control Board, Clanwilliam). A truck is hired annually by the rooibos planters in the area for approximately R100-00, and the accumulated harvest is taken to Clanwilliam, and bought by the Rooibos Tea Board, where it is processed and packaged. No reason could be found for the fact that the community does not process its own rooibos crop.



FIGURE 5.2 Freshly picked (right) and processed rooibos.

### 5.3 Employment and incomes

Rooibos farming contributes a large proportion of the total income of 3 of the 19 families in Heuningvlei, playing an important role in the socio-economic welfare of a significant sector of the community. The three producers at Heuningvlei contribute approximately 4 000 kg of dry tea per season to the Rooibos Tea Control Board's Cederberg area total of 66 250 kg (figures obtained from R.T.C.B. for 1991). No economic figures could be released by the R.T.C.B., but the Heuningvlei Rooibos farmers interviewed indicated that they were paid in installments throughout the year, as their particular tea crops were processed by the Tea board. They found it difficult to give an approximate financial return per seasonal crop, but estimated that annual income from farming rooibos averaged around R3000. Most family incomes are supplemented, and many rely upon, varying types of migrant labour employment, for example fruit picking and packing at the farms in the region, such as Diesselfontein, near Ceres, earning R80-00 per week (pers.comm. Magdaleen Engelbrecht) which includes food and accommodation. Every 3 weeks a truck from the farm brings labourers home to Heuningvlei and other surrounding settlements, to visit families. Labourers are employed at different times of the year according to activities, for example from February through to October in the Kouebokkeveld to help with fruit-harvesting. All the interviewees employed as such, and living in Heuningvlei and Langkuilshoek (visiting Heuningvlei at time of interview and thus partaking in such) expressed satisfaction with their employment.

Five men in the community are employed as labourers by Cape Provincial Administration (C.P.A.) and work for the Forestry station at Algeria, earning on average R569-00 per month. One of the unmarried women was employed as a teacher in Eselbank for the latter half of the year (she works at Diesselfontein out of school-terms). As a teacher, she is earning approximately R600-00 per term, with which she



supports her elderly parents and her four-year-old son. This is made possible through their semi-subsistent lifestyle, avoiding the expense of buying basic foodstuffs, general medicines (e.g. headache remedies), firewood and some building materials.

Other members of the community are variously employed in Clanwilliam, Piketberg and some in Cape Town. Types of employment include welding, teaching, lithography, post-office work etc.

Younger boys are also employed as communal shepherds by those households which do not have the human resources for such activities, but stock-tending is generally a family member's 'chore'.

Approximately 30% of the community comprises people on either old-age or disability pensions, receiving R263-00 and R258-00 per month respectively. The average household income for the community is below R500-00 per month, highlighting the crucial importance of freely-available plant resources.

#### **5.4 Health and education facilities**

The settlement is home to one of the few schools in the area, comprising two well-equipped classrooms. The school is run by Mr. Abrahams, who was posted from Paarl to Heuningvlei in 1953. It caters for 62 children, from Grade 1 to Standard 5, after which most pupils complete Stds 6 and 7 in Wuppertal or Clanwilliam, and finish their schooling in Citrusdal, Piketberg, Paarl or Cape Town.

Schoolchildren walk as far as 7 kms every morning from their homes to the school in Heuningvlei. Many of the children from the further settlements board with the Heuningvlei residents during the week, partly earning their keep through chores such as collecting firewood, and partly subsidised by the Cape Education Department (pers.comm. Mr. Abrahams).

Medical facilities have become within much easier access for the Heuningvlei people, with the presence of Mr. Abrahams' motor vehicle. First aid and the treatment of minor ailments occurs through the employment of a range of natural herbal

remedies, or 'kruie', whilst persistent and pension-funded cases are treated by the clinic in Clanwilliam. A doctor from Clanwilliam visits Wuppertal once a month for the benefit of those communities for whom travel to Clanwilliam is a problem. There are local midwives in several of the settlements, and a nurse in Wuppertal.

#### 5.5 Relationship to other communities

Since the arrival of Mr. Abrahams in 1953, the isolated nature of the community has decreased considerably. The willing dominee and his bakkie (the only vehicle in the community) have improved the community's access to medical care, commercial household supplies and the generally Westernised 'outside world'.

Heuningvlei has close ties with Wuppertal, as do most of the other outlying settlements, and has a representative on both the 'Kerksraad' (Church Council Members) and the 'Opsienersraad' (Supervisory Committee). The latter's function is to ensure the 'smooth running of the day-to-day affairs of the people in the wider community' (Granger; 1982).

Inter-village relationships are close, as many of the inhabitants are related through marriage. Visits between communities, involving at least a pleasant half-hour's walk, are frequent, as is the lending of agricultural implements such as a plough or team of donkeys for the ploughing of 'lande' (pers. obs.).

The population has remained fairly stable over the last few decades, as the decreased mortality rate, through improved access to preventative and curative medical care facilities, has been balanced by the out-migration rate. It is estimated that almost 75% of the adult inhabitants remarry outside of Heuningvlei (Mr. Abrahams ; pers. comm.). This emigration to the cities exacerbates the rapidly declining pool of customary knowledge, as individuals become less subsistent and more consumer-oriented.

## CHAPTER SIX

### RESULTS AND DISCUSSION

#### 6.1 Utilization of plant resources

On the whole, the community appears to have undergone a great transformation with respect to their utilization of, and reliance upon, plant resources. Before the arrival of Mr. Abrahams and his transport, access to other areas from the isolated settlement was limited to more traditional methods of walking or by donkey-cart, naturally maintaining the isolated nature of the community and their subsequent reliance upon the surrounding environment for food, medicinal, building and fuel resources. The older members of the community recall never having gone to a doctor as children - any ailments were treated by their parents with infusions or salves derived from indigenous plants, many of which remain in use today and are documented within this project. Sweets and confectionary were unheard of, except by those whose relatives travelled between towns as craftspeople. Sweet urges were quenched with the nectar of Suikerbos flowers or a handful of bokbessies (Nylandtia spinosa) or vlieebosbessies (Diospyros glabra). Today, many Heuningvlei people still favour these sources above commercially available sweettreats, although liquorice appears to a weakness to a few !

The data collected on plant utilisation is presented as follows : plant resources have been divided into two sections, namely medicinal and domestic. Each section involves a concise discussion of the more commonly used species, preceding a more comprehensive presentation of the data in a tabulated form. References to any previously documented uses of the 46 species (plus several Pelargonium sp.) recorded here are included in Appendix 2.

### 6.1.1 Plants for medicinal purposes

" Indulgent nature provides a remedy for every ill that flesh is heir to. Man, in his ignorance, too frequently rejects the boon that Nature has to offer and seeks in artificial aid an anodyne to ill."

(Coffin ; 1949)

All households, without exception, use plants for medicinal purposes. Minor ailments, such as coughs, headaches, sore throats and backache, are first treated with natural plant remedies, and the doctor is only consulted should the ailment persist or become worse - improved access to Clanwilliam clinic was facilitated by the arrival of Mr. Abrahams. This home-remedy system is both convenient and income-saving for people who generally have an income just sufficient to meet their most basic needs. Many of the elder members of the community, who are on state pensions and obtain free medical services, consult the Clanwilliam doctor fairly frequently, usually monthly, for rheumatic and arthritic problems. Other individuals have to pay a consultation fee of R25-00, plus the cost of any prescribed medication.

The clean, clear air with which Heuningvlei is blessed in these times of increasing atmospheric pollution, seems to make for a healthy climate, and most people report good health for the greater part of the year.

All families use Wilde Als (Artemisia afra) as an initial cough and cold remedy and for relief of general pain. The crushed leaves are also made into a poultice with vinegar and laid on babies' stomachs for relief of colic. The plant is grown in many of the gardens as a medicinal resource.

Salvia africana coerulea (bloublomsalie) is a trusted remedy for the relief of stomach ailments. The leaves of the well-documented "buchu" plant Agathosma betulina are kept in dried form for a variety of uses, e.g.: reducing high blood

pressure and for pain relief. An infusion of buchu leaves is often taken in conjunction with prescribed medication, e.g.: 'Ibuprofen' for rheumatic ailments. Interviewees, on this particular medication, indicated that it aggravated their stomachs, but that both stomach and rheumatic aches were relieved by simultaneous intake of "boegoe tee" (the colloquial spelling of the vernacular). Numerous species within the genus Agathosma have been referred to as "buchu", but the afore-mentioned species, A.betulina, appears to be the only one in use in the Cederberg region. The Red Data Book lists nine species of Agathosma as rare or endangered (19..). None of these species have been observed in use or for retail in the Cederberg biogeographic region, as defined in the Red Data Book. It would be presumptuous to infer any connection between customary utilisation and current status of these Agathosma species for the entire region - it is highly likely, however, that commercial overexploitation of these plants has led to their currently vulnerable status.

Numerous species of the Geraniaceae family are commonly known as 'malva'. The leaves are crushed and placed in the ear to relieve head- and tooth-aches. This remedy has been observed in use by many coloured peoples living in the greater Cape Town area, who believe that 'malva', as a remedy, is far superior to any commercially available pain-relief with which they are familiar, such as disprin.

The abundant arum lily (Zantedeschia aethiopica) is used as a dressing for infected wounds, the underside being warmed and heated, smeared with 'vaseline' and placed upon the wound. Dressings are repeated until the wound has healed, observed to be an efficient administration of treatment and rapid healing. The use of such a treatment obviates the need to buy expensive commercial wound dressings.

The Engelbrecht family have not consulted a doctor within the last 5 years, firmly believing that modern medicines only "maak die ligaam dof" (i.e.: make the body dull to pain), whilst plant remedies "jaag die pyn weg" (chase the pain away). Dawid Engelbrecht recalls being plagued by an intense stomach pain which defied all known plant remedies



and eventually landed him in hospital. The pain was eased, but upon returning to Heuningvlei persisted once more. A friend from a neighbouring community (Ruiter Syster from Perdekraal) brought a plant called "beesbos" (Chrysocoma tenuifolia), from which was made an infusion, administered to Dawid three times a day. After two days, according to Dawid, the pain disappeared and has not troubled him since.

The documentation which follows is a tabulated description of plant utilization for medicinal purposes by the Heuningvlei community, as indicative of such use in the north-western Cedarberg. The researcher does not guarantee this list to be exhaustive, but to include those species presently of value to the community. Plants are listed in alphabetical order according to generic and specific names. Available information is included regarding the geographical distribution of each particular species, method and place of procurement, parts of the plant utilised and a concise explanation of customary use. An indication of intensity of use by the Heuningvlei community is based upon data collected by means of observation and informal, open-ended interviews. The household questionnaire investigating plant utilization on a daily basis was not completed, for reasons explained in chapter three, and thus could not be used as a reliable data source upon which to gauge intensity of use. Use intensity has thus been based upon data accumulated through observation and informal interview. Status of each species is inferred from a combination of the most recently available references, and information gleaned from botanists familiar with the area.

For those unfamiliar with the colloquial references and terminology in the documentation, a short glossary is essential :

- "mak" : refers to a plant which is either cultivated ('tame' being the direct translation) or can commonly be found close to the settlement.
- "wilde" : refers to an uncultivated species or to a less commonly used sub-species. Wilde als and wilde

dagga, although grown in many gardens, retain the prefix 'wilde' as a result of formerly being the lesser known or less common of two species with the same vernacular name.

- infusion : a tea brewed from steeping leaves in boiled water to extract the healant properties of the plant and to allow for easier ingestion and more rapid digestion by the 'patient'. The most commonly used ratio of plant material : water is a handful of the plant part, crushed, to a standard tea-cup (250 ml) of hot water.
- salve : a paste derived from crushing the particular part of the plant in order to release essential fluid properties and to facilitate easy application to wounds and joints.

### 6.1.2 Domestic uses

Besides its medicinal value, the vegetation in the area is used for a variety of domestic purposes, the most important being for heating and roof-thatching :

- \* 'besemgoed' (Ischyrolepis sporadica) cut for making brooms;
- \* 'palmiet' (not palmiet) for ceilings;
- \* 'braam' (Rubus pinnatus) for jams;
- \* green 'vuurslaanbos' (Leucadendron rubrum) is an efficient firebeating implement, whilst the unopened flowers of the female plant ('tolbos') are whittled into spinning tops for children;
- \* suikerbos (Protea laurifolia) flowers are fashioned into playdolls/mannikins for children. The stamens of suikerbos flowers are also savoured by children for the sweet nectar they contain.
- \* Waboom (Protea nitida) trees provide an important source of firewood. The leaves are occasionally used as playing cards or for whiling away time out in the fields.

#### 6.1.2.1 Firewood

Four indigenous tree species, namely Kliphout (Heeria argentea), Suikerbos (Protea laurifolia) Waboom (Protea nitida) and Olienhout (Olea europaea) provide adequate firewood sources, but are only used when dead and dry. The Heuningvlei people interviewed in this regard did not believe in chopping live trees, apart from the Denneboom (Pinus pinea), which grows in two main groves within five minutes walk of the settlement. The presence of this naturalised species appears to decrease the potential pressure on indigenous trees as a source of fuel, although species such as Olea europaea are preferred because their dense wood provides increased burning time.

Firewood has an important function in terms of indoor heating, a vital aspect in a climatic region such as the Cederberg, where Winter night temperatures can drop below zero. There is no supply of electricity and gas heaters are beyond the financial means of most households (there is only one such heating appliance in Heuningvlei.)



TABLE I

## MEDICINAL PLANTS

BOTANICAL NAME	FAMILY	VERNACULAR NAME	GEOGRAPHICAL DISTRIBUTION	PROCUREMENT	PARTS UTILISED	CUSTOMARY USE	INTENSITY
<i>Arctotheca calendula</i> ?	Asteraceae	karredit	Cianullias to Worcester, Paarl, Peninsula to P.E.	picked wild or stored dried	leaves	infusion for cancer treatment and as general pain reliever, esp. stomach	3
<i>Agathosma betulina</i>	Asteraceae	burch/boegoe	Cederberg, Piketberg, Tulbach, Nieuwoudville	picked in S.C'berg or bought in town	leaves	infusion for relief of arthritic and general pain to reduce blood pressure	5
<i>Artemisia afra</i>	Asteraceae	wilde als	Cianullias, Stellenbosch, Caledon, George to P.E.	grown in tuine or picked wild	leaves	infusion for relief of coughs, colds, sore throats and general pain	5
<i>Carpobrotus edulis</i>	Mesembryanthaceae	vyrant/suurvy	Widespread in SW Cape to Natal	picked wild	fleshy leaves	Leaf sap rubbed on mouth sores and quins, sore throat relief; relieves and aids healing of minor burns	5
<i>Chironia baccifera</i>	Genlianaceae	Seuntjie se bos	Widespread in SW Cape	picked wild	stem and leaves	infusion for diabetes treatment and relief of chest and stomach pains	3
<i>Chrysocoma tenuifolia</i>	Asteraceae	beesbos	Widespread in SW Cape	picked wild	stems and leaves	infusion for treatment of stomach ailments	1
<i>Biosa oppositifolia</i>	Rutaceae	Potjiesbos/aalboega	Throughout S and SW Cape	picked wild	stems, leaves, flowers and fruit	infusion for treatment of haemorrhoids	3
<i>Dononaea viscosa</i>	Sapindaceae	koorsbos/sandollie	Malenbury, Peninsula to Bradaasdrp	picked wild	leaves	infusion for reduction of fever and relief of pain; saline for arthritic aches	5
<i>Elytropogon phinocerotis</i>	Asteraceae	renosterbos	Ladisaith to Worcester	picked wild	stems and leaves	infusion for relief of stomach ailments	3
<i>Eriocephalus africanus</i>	Asteraceae	aaubossie	Throughout SW Cape	picked wild	stems and leaves	infusion for relief of haemorrhoids	3
<i>Galenia africana</i>	Aizoaceae	kraalbos	Widespread SW Cape to Maanqualand	picked wild	stems, leaves, flowers	finely crushed leaves dried and soaked for relief of toothache; saline for treatment of wounds	3
<i>Geranium and. Palaragonia spp.</i>	Geraniaceae	aalva	Widespread in S.A.	grown in gardens	leaves	crushed and placed in ear to relieve ear and tooth ache	5
<i>Helichrysum petiolatum</i>	Asteraceae	hotnotskroigoed	Peninsula, Paarl to Bradaasdrp	picked in C.M., distributed to community	leaves and stem	infusion for relief of urinary tract problems, heart ailments and general pain	5
<i>Leonotis leonuris</i>	Labiaceae	wilde daggas	Paarl and Peninsula to Port Elizabeth	picked wild, or grown	leaves, flowers	infusion for relief of backpain and stomach aches; dried leaves sprinkled on fodder revitalises listless stock	4
<i>Lobostemon fruticosus</i>	Boraginaceae	agtdaengeensbos	Nieuwoudville to Uniondale and Maanqualand	picked wild	leaves and buds	crushed and applied to wounds as antiseptic and to speed healing	4
<i>Melianthus major</i>	Melanthaceae	kruidjie-roer-aynie	Cianullias to Malenbury	picked wild	leaves and stem	rhonchitis eased by breathing steam from boiling plants; acting joints held over steam to relieve pain	4
<i>Mentha aquatica</i>	Labiaceae	kruisseent	Cianullias to Peninsula, Caledon to Knysna	grown or picked wild	leaves and stem	infusion to aid expulsion of afterbirth; dried and powdered as 'naggyrask' remedy	3
<i>Olea africana</i>	Oleaceae	olienhout	Widespread in SW Cape	picked wild	entire twig	infusion for relief of bronchitis, asthma and chest ailments	2
<i>Pentzia lanata</i>	Asteraceae	staapbos	Cianullias, Worcester to Uitenhage	picked wild	leaves	infusion used as bronchodilator	2
<i>Plantago major</i>	Plantaginaceae	poppe	Widespread cosmopolitan weed	picked wild	leaves	infusion for stomach complaints	4
<i>Salvia africana coerulea</i>	Labiaceae	bloubloesalie	Gifberg to Montagu, Peninsula to Caledon	picked wild and stored dry	stem and leaves	infusion for relief of backaches; reduces temperature and fever	4
<i>Senecio</i>	Asteraceae	aalbotterbos	?	picked wild	leaves	soakware peeled from underside of leaf, placed on infected cuts as antiseptic	1
<i>Stoebe plumosa</i>	Asteraceae	slangbos	Maatla to Peninsula to Eastern Cape	picked wild	stem and leaves	infusion for treatment of stomach aches	1
<i>Sutherlandia frutescens</i>	Fabaceae	kantebos/kort-been hoenderbal	Throughout S and SW Cape, drier parts of SA Africa	picked wild	leaves	infusion for cancer treatment and relief of stomach troubles	1
<i>Lespedeza pumicea</i>	Fabaceae	langbeenhoenderbal	Peninsula to Riversdale	picked wild	leaves	infusion for relief of heart ailments	2
<i>Zantedeschia aethiopsica</i>	Araceae	varskom / arum lily	Throughout S and SW Cape	picked wild	leaves	leaf warmed over fire, underside smeared with vasoline and used for drawing infectious wounds	5

TABLE I

PLANT	LOCAL NAME	DESCRIPTION	USE	INTENSITY
1	...	...	...	1
2	...	...	...	2
3	...	...	...	3
4	...	...	...	4
5	...	...	...	5

**KEY TO INTENSITY OF USE**  
 1 : UTILIZED BY LESS THAN 5 FAMILIES  
 2 : " " 6 - 10  
 3 : " " 11 - 14  
 4 : " " 15 - 18  
 5 : " " 19 - 20  
 \* (i.e. 100% of community)

MEDICINAL PLANTS

These trees also provide wood for fence poles, gates, ladders and roof beams. The latter provide structures upon which to lay 'polmiet' (not palmiet) (as yet unidentified and being studied by Sytematics Laboratory, UCT Botany) which forms the ceiling in many houses. This type of ceiling construction allows for the through-flow of air to items such as onions, potatoes and bundles of bergriet, which are lain ontop of the ceiling, in the attic in order to dry.

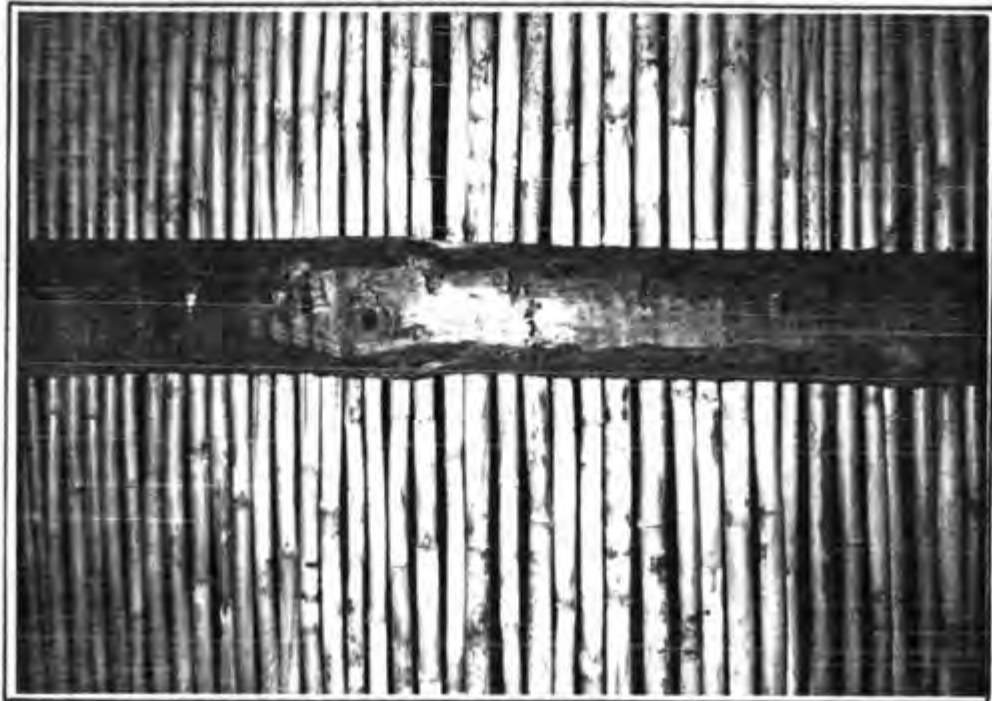


FIGURE 6.1 "polmiet" ceiling laid across Pinus beams.

Bergriet (Cannomois taylori) has an important role as a thatching material - every house in the settlement has a roof made of bergriet. The value of this species in providing a resource is exceptional when one bears in mind that the cost of thatching an average sized suburban home is R40 000-00 (per.comm. local thatch-roofed house owners). It is noted here that this species was botanically identified and named only 6 months previous to this report.

Ischyrolepis sporadica, referred to as 'besemgoed' is used by all families to make household brooms. The plant is cut to the required length, dried for a few days and bound to end of a suitable wooden stick to make an efficient broom (Fig.6.3)



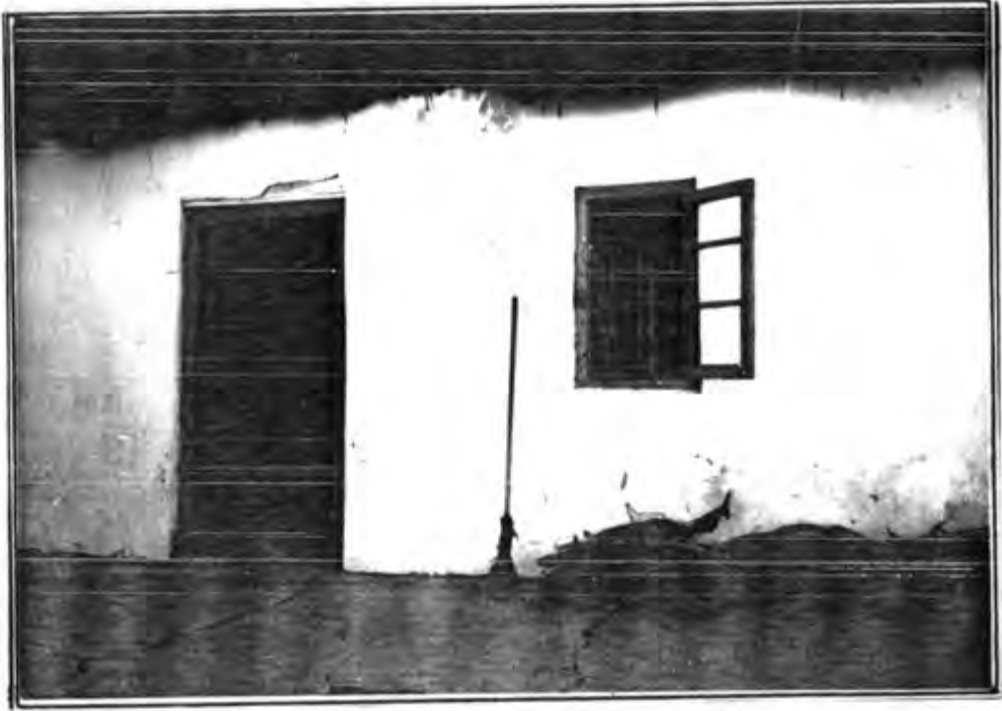


FIGURE 6.2 House front illustrating the range of use of plant resources for domestic purposes - "bergriet" for thatching roofs; "beseagoed" for household brooms and waboom, denneboom and wild olive ("olienhout") firewood.

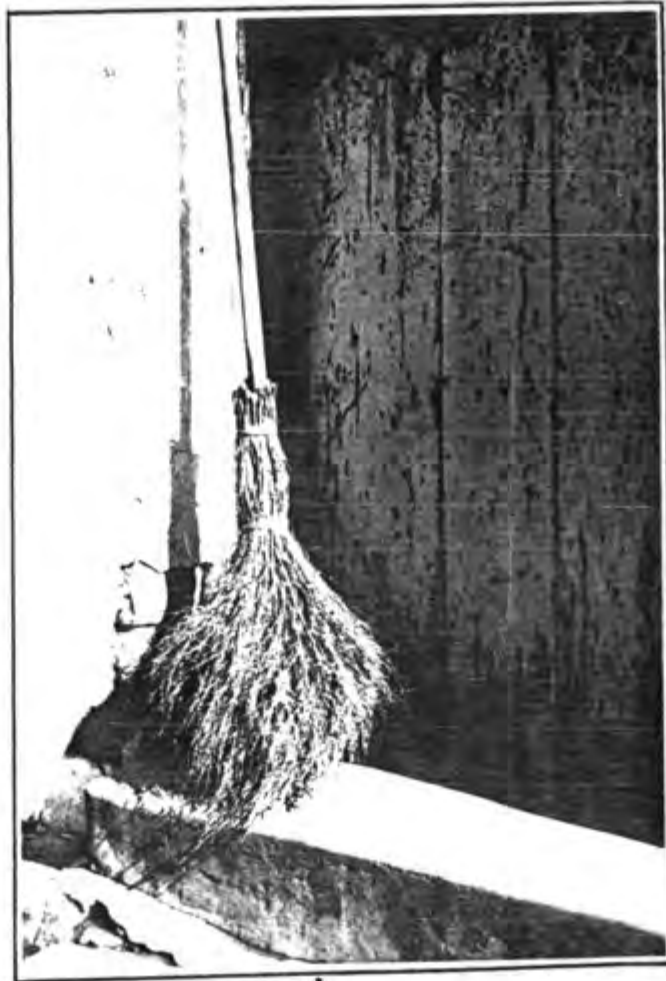


FIGURE 6.3 dried and bound "rietbeses" (*Ischyrolepis sporadica*)

**DOMESTIC USES**

BOTANICAL NAME	FAMILY	VERNACULAR NAME	GEOGRAPHICAL DISTRIBUTION	PROCUREMENT	PARTS UTILISED	CUSTOMARY USE	INTENSITY
<i>Aspalathus linearis</i>	Leguminaceae	rooibos	Nieuwoudtville, Clanwilliam, Ceres to Swellendam	commercially grown or picked wild	stems and leaves	tea - commercial and customary	4
<i>Brabejum stellatifolium</i>	Proteaceae	goboo/wild almond	Clanwilliam to Riversdale	picked wild	fruits and pods	roasted and ground as coffee substitute	1
<i>Cannemosis taylori</i>	Restionaceae	bergriet	Throughout Cederberg	collected wild	entire stea	thatching	5
<i>Carpobrotus edulis</i>	Mesembryanthemaceae	suurvy	Widespread in SW Cape to Natal	collected wild	fruit	dried and eaten	5
<i>Diospyros glabra</i>	Ebenaceae	vliebosbessie	Nieuwoudtville, Worcester, Montagu, Peninsula, Uniondale	picked wild	fruits	eaten fresh	4
<i>Ischyrolepis sporadicus</i>	Restionaceae	beseagied	Clanwilliam to P.E.	collected wild	entire stea	bunched and attached to stick as a broom	5
<i>Heeria argentea</i>	Anacardiaceae	kliphout	Cederberg and inland SW Cape	wild	entire tree	firewood; apparently once used for tanning by Muppertal shoe factory	4
<i>Helipterum canescens</i>	Asteraceae	sewejaartjie	Clanwilliam, Peninsula, Worcester	collected wild	stems, leaves, flowers	house decor	4
<i>Leucadendron rubrum</i>	Proteaceae	vuurstaambos / tolbos	Lokenburg to Humansdorp	collected wild	whole branches; flowers	fire-heating; immature flowers whittled to form spinning tops	5
<i>Mylandtia spinosa</i>	Polygalaceae	bokebessie	Sandy places throughout SW Cape	collected wild	fruit	eaten fresh; seal-stock food supplement	5
<i>Olea africana</i>	Oleaceae	olienhout	Widespread SW Cape	collected wild	entire tree	firewood and furniture	5
<i>Oxalis flava</i>	Oxalidaceae	veidsuring	Gifberg to Peninsula, Tulbach to Peninsula, Riversdale	collected wild	roots and corms	crushed and cooked as for porridge, bacon added for taste	2
<i>Pinus pinea</i> and <i>pinaster</i>	Pinaceae	denneboom	Naturalised widespread exotic	plantations	wood	firewood, fencepoles, gates, ladders, washing-boards	5
<i>Protea laurifolia</i>	Proteaceae	suikerbos/soetsopboom	Widespread from Cederberg to Port Elizabeth	collected wild	wood, leaves and flowers	firewood; stamens sucked for sweet nectar; leaves boiled for 'pick-up' tonic for children.	4
<i>Protea nitida</i>	Proteaceae	waboom	Gifberg to Uitenhage	collected wild	wood and leaves	firewood, fencepoles; leaves used as playing cards	5
<i>Rubus pinnatus</i>	Cliffortia	braambessie	naturalised introduced species, grows near settlements	collected near settlement	fruits	eaten fresh and preserved as jams	5
<i>Thesium (hirtum?)</i>	Santalaceae	jakkalstee	Cape	collected wild	leaves	chopped, dried and brewed as tea	1
?	Restionaceae	katstert	Cape	collected wild	entire stea	tied to poles to form sides of stock and storage sheds	4
<i>Thamnochortus?</i>		poloet		collected wild	entire stea	entire stea cut and dried, laid across beams to form ceiling	4
?		matjiesou		collected near rivers	leaves	wire replacement, especially when attaching katstert to poles to form stock sheds	1
<i>Watsonia aeriana</i>	Iridaceae	suurkanol	Nieuwoudtville to Bredasdorp	collected wild	stea base	pre-flowering stea base peeled and eaten fresh	3
<i>Helichrysum?</i>	Asteraceae	pokebos		collected wild	stems, leaves, flowers	dried, ground and added to honey beer to remove sourness	1

TABLE II  
DOMESTIC PLANTS

PLANT	LOCAL NAME	DESCRIPTION	UTILIZATION	REMARKS
1	...	...	...	...
2	...	...	...	...
3	...	...	...	...
4	...	...	...	...
5	...	...	...	...

**KEY TO INTENSITY OF USE**  
 1 : UTILIZED BY LESS THAN 5 FAMILIES  
 2 : " " 6 - 10 " "  
 3 : " " 11 - 14 " "  
 4 : " " 15 - 18 " "  
 5 : " " 19 - 20 " " (i.e. 100% of community)



FIGURE 6.4 Ladder made of Widdringtonia cederbergensis. This species is no longer used by the community for domestic purposes as a permit is required for possession of the wood. The ladder was thought to be over 15 years but no-one could clearly recall its age !



## 6.2 Frequency and intensity of use in relation to species status

The status of every species documented in this report was referenced from The Red Data Book on Plants in the Fynbos and Karoo Biomes (Hall and Veldhuis;1985). Not one of these species were listed even as vulnerable, indicating that their statuses are not threatened through customary utilisation. Most of the species appeared fairly abundant in the northern Cederberg, which seems to confirm the records in the Red Data Book. It should be noted that this publication is somewhat dated, but no other, more updated literature is available.

The two species which people expressed were becoming difficult to find near Heuningvlei included Salvia africana and Helichrysum petiolatum. This is the result of high frequency and intensity of use in a concentrated area - people would rather spend longer searching for a plant than walk further to find it. Further away from the settlement, these species are once again easier to locate.

The reason for buying buchu from local stores and pharmacies is due to the fact that this species, Agathosma betulina, is infrequent in the drier northerly regions of the Cederberg. This detail of geographic distribution was suggested by Professor Eugene Moll, Botany UCT, as well as Dr. Anne Bean, an expert on Agathosma species.

Regarding the use of firewood, a highly intensely and frequently utilised resource, a fairly unique and peculiar situation exists at Heuningvlei. The presence of exotic species, Pinus pinea and P. pinaster, relieves much of the potential pressure on indigenous trees by providing a versatile resource, to which no restrictions are attached in the form of permit requirements or only being 'usable' when dead.

The source of this attitude towards indigenous tree species has been attributed to both Forestry 'rules' and to a genuine concern by the people to ensure the continuing presence of the resources upon which their welfare is so dependant. In this situation, an exotic genus appears to



have found a suitable niche, where it is simultaneously expedient and controlled. In this situation, it provides minimal threat to the more fragile mountain fynbos elements in the region.



**FIGURE 6.5** The "denneboom", Pinus pinea, has edible seeds, regarded as a delicacy in Europe and a favourite snack by Heuningvlei people.

## CHAPTER SIX

### CONCLUSION

Resource utilization, like tourism, is a double-edged sword in justifying conservation (Cunningham; 1985, 499). There is always the threat when something is useful and freely available of exploitation of resources. Threats of over-exploitation have borne the concept of sustainable utilisation. The World Conservation Strategy of 1980 defines conservation as "the management of human use of the biosphere so that it may yield the greatest sustainable benefit to present generations while maintaining the potential to meet the needs and aspirations of future generations" (Hanks, 1983).

The intrinsic and aesthetic reasons with which our "westernised" society has traditionally championed the conservation cause are indeed a worthy rationale for not destroying our environment, but they are totally impractical, inappropriate and inapplicable in a world where burgeoning human populations are placing increasing pressure on resources. Little priority can be given by starving people to preserving those living elements which are of no perceived use to them, but there is potential for a workable conservation strategy where the well-being of both environmental systems and human welfare are concerned. It is within this context that a living-resources conservation philosophy is realistic. Species require some ecological or economic value in order to be afforded some measure of conservation status by those interacting within the same system.

This concept is not idealistic - the situation at Heuningvlei has demonstrated a highly workable

means of sustainable resource utilisation, and the reason for this is attributed to two factors :

- A fairly constant population has been maintained, within the carrying capacity of that environment, obviating damage to the environment through population pressure:

- The presence of an introduced but naturalised (Coates-Palgrave 1988) species of Pinus provide an essential resource, simultaneously relieving the pressure on those indigenous resources which are used for the same purposes, as well as controlling the invasion of an exotic species. The more fragile mountain fynbos elements receive minimal threat from alien woody species in this situation.

It is within the context of a conservation strategy of this nature that the case study has attempted to provide a scenario of a rural community dependant upon the vegetational resources in the region for its socio-economic well-being. The average monthly household income, including migrant worker remittances, would be insufficient to support a family in an urban situation without the availability of essential, and unpaid-for in cash terms, resources such as fuel, general building materials, and basic medicinal remedies. In effect, these "commodities" provide a supplementary or hidden income.

In terms of evaluating the importance of plant resources to a rural community, it is difficult to attach a monetary value to such. Ethnobotanical investigations, however, contribute a valuable method of identifying the context in which these resources play a vital role, and give an indication of the degree to which these plant resources 'save' lower-income peoples' expenditure.

The recording of the customary knowledge regarding the use of various plant species has proved to be an important portion of the project - Appendix 2

provides a list of previously referenced species and their documented uses. Many of the species used at Heuningvlei have been previously recorded, although the applications of various plants have changed. The author proposes that a further, previously unrecorded, five species, as well as the customary knowledge regarding their use, have been documented in this paper, although a few of these have not yet been irrefutably identified. No references could be traced to any of these species being used for domestic or medicinal purposes. This phenomenon, of new rather than older, dying customary knowledge, has highly optimistic implications in that customary uses for plants are still 'evolving' - this does not, however, infer that customary knowledge is permanent and unthreatened. Its imminent loss is an ever-present problem. This 'appearance' of previously undocumented uses for plant species serves to confirm the scope of new applications of flora, not just as rural resources, but also in its potential for improving agricultural strains and contributions to medical research.

The documentation of plants observed in use serves as important proof that a large proportion of the vegetation within the Cape Floral Kingdom can indeed be assigned a utilitarian value and thus be deemed worthy of conserving in terms of both the western paradigm as well as in the context of the developing world. The case study community provides an example of the viability of a well-structured, semi-subsistent rural way of Life as an option to peri-urban poverty, concurrently placing value upon indigenous plants, affording flora a justifiable reason to be conserved and illustrating a real-life scenario of a successful living-resources conservation strategy.

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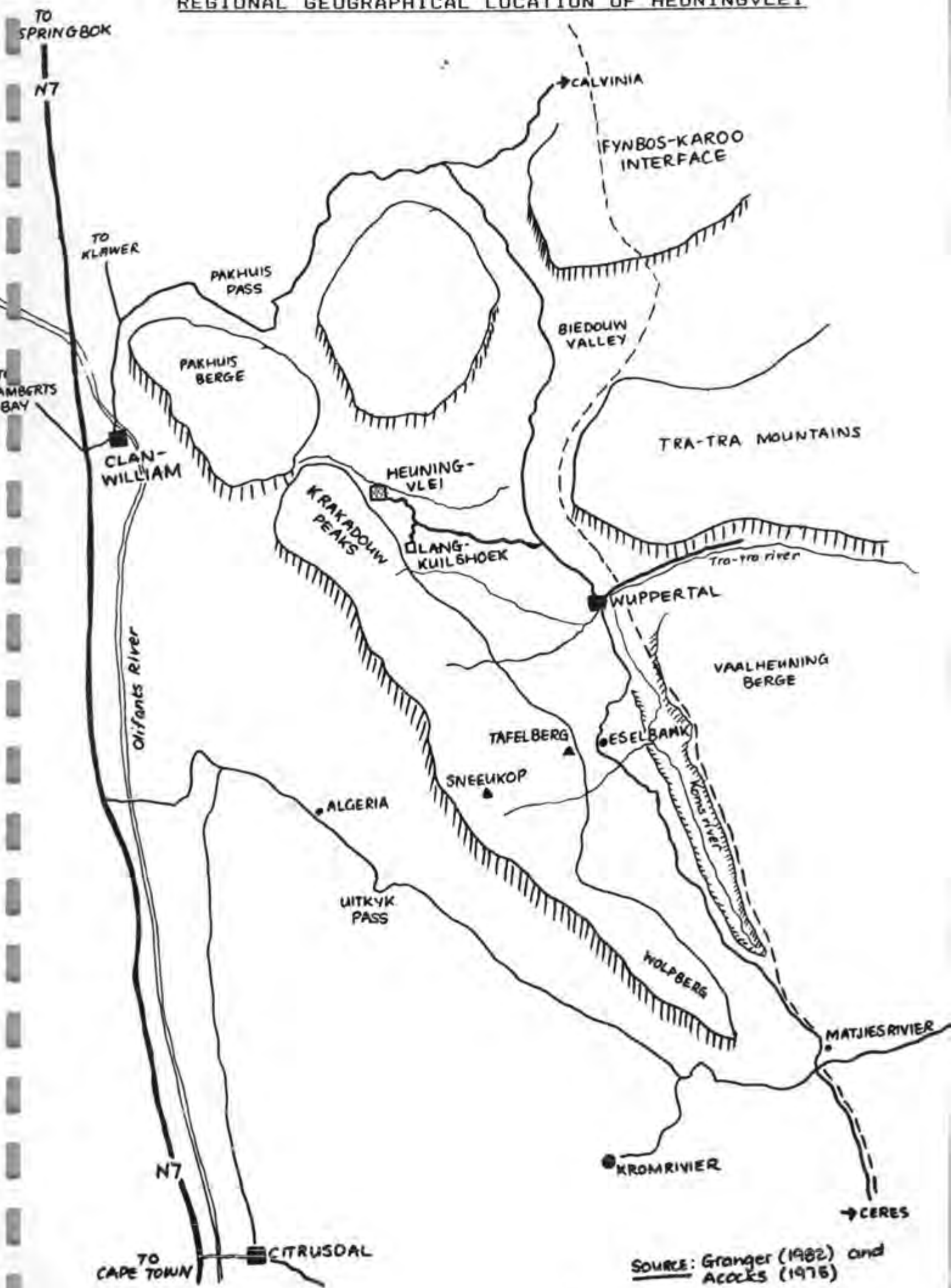


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REGIONAL GEOGRAPHICAL LOCATION OF HEUNINGVLEI



SOURCE: Granger (1982) and Acocks (1976)

## APPENDIX 2

PREVIOUSLY DOCUMENTED REFERENCES TO USE OF PLANT SPECIES

<u>BOTANICAL NAME</u>	<u>OTHER NAME</u>	<u>DOCUMENTED USE</u>
<u>Agathosma betulina</u>		Infusion for urinary tract ailments. <b>A</b> Rheumatism, stomach trouble, Buchu brandy. <b>E</b> Active ingredient 'Diosphenol'. <b>C</b>
<u>Artemisia afra</u>	worewood	coughs, colds, chest ailments; <b>E</b> solution for eye weakness; <b>A</b> European species commonly used for medicinal purposes
<u>Brabejum stellatifolium</u>	wild almond	kernels used as coffee substitute <b>A</b>
<u>Carpobrotus edulis</u>	vygie	1815 colonial record of drying and (A) preserving fruits; throat gargle, cure for mouth sores; applied to ringworm, eczema, bruises; <b>E</b> TB remedy mixed with honey, oil and water. <b>E</b>
<u>Chironia baccifera</u>	aanbeibossie	haemorrhoids, painkiller salve; blood purification <b>A</b>
<u>Chrysocoma tenuifolia</u>	bitterbos	Appendicitis, constipation, typhoid, syphilis, rheumatism and gout <b>C</b>
<u>Diospyros glabra</u>	Kraaibessie	Infusion for coughs and colds <b>F</b>
<u>Dodonea viscosa</u>		Remedy for stomach disorders, pulmonary condition treatment, fever purgative <b>A, B, C, E</b>
<u>Elegia capensis</u>	beseegras	thatch and brooms <b>D</b>
<u>Elytropappus rhinocerotis</u>		hailed during 1918 'flu epidemic <b>A, D</b>
<u>Eriocephalus africanus</u>	kapokbossie	diuretic <b>B</b>
<u>Salenia africana</u>		toothache remedy <b>A</b>
<u>Helichrysum petiolatum</u>		mattress stuffing, heart ailments, <b>A, D, E</b>
<u>Helioterua canescens</u>		indoor decor and mattress stuffing <b>A</b>
<u>Leonotis leonurus</u>	duiwelstabak	Hottentot tobacco <sup>A</sup> ; TB, snake bites, infusions for asthma and fever, poultice - stings and bites; Zulu snakebite remedy. <b>E</b>

<u>BOTANICAL NAME</u>	<u>OTHER NAME</u>	<u>DOCUMENTED USE</u>
<u>Lobostemon fruticosus</u>	healing bush	wound and infection dressing, ringworm remedy A,B
<u>Melianthus major</u>		compress for back and rheumatic aches; E scabies and lice hairwash, sore throat and gum gargle, snake bite remedy. A Stock poisoning cases. B, C
<u>Mentha aquatica</u>		African remedy for abdominal upsets, gynaecological complaints B, A
<u>Nylandtia spinosa</u>	skilpadbessie	rich in vitamin C - relished by VOC sailors D
<u>Olea europaea</u>		colic relief, internal cleanser, throat gargle fruits powdered as salve for joint aches, eye lotion as well as good furniture wood D, E, G
<u>Oxalis</u>		edible root A
<u>Pelargonium species</u>	mallow	colic relief and diarrhoea astringent A, D
<u>Pentzia incana/lanata</u>		no use given A
<u>Pinus pinea</u>		edible endosperm A
<u>Protea nitida</u>		name derived from reputation as being excellent wagon wheel wood, bark for tanning and astringent, black ink from mature leaves A
<u>Protea laurifolia</u>	bossiesstroop	Coughs, colds and chest ailments and as a sweetener A, D
<u>Rubus pinnatus</u>	bramble	berries and jams A
<u>Salvia africana</u>	wild/blue sage	One of the earliest colonially recognised medicinal plants in the Cape, remedy for chest troubles and menstrual ailments A, E
<u>Stoebe plumosa</u>		stomach and gynaecological complaints A, F
<u>Sutherlandia frutescens</u>	kankerbos	Cancer cure A
<u>Watsonia meriana</u>		corns cooked and eaten by Bushmen and Hottentots D
<u>Zantedeschia aethiopica</u>	'hotnotsbrood'	edible rhizomes boiled dried and roasted, Hotnots bread; dressing A

KEY TO REFERENCE SOURCES :

- A Smith, 1966
- B Watt and Beyer-Brandwijk, 1962
- C Watt and Beyer-Brandwijk, 1932
- D Hout Bay Museum, 1989
- E Roberts, 1990
- F Current studies in Botany Dept.
- G Coates-Palgrave, 1988



THE QUINTESSENTIAL CEDER TREE, SYMBOLIC OF  
CONSERVATION EFFORTS IN THE CEDERBERG.