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Observations on plant usage in Xhosa and Zulu medicine

A. HUTCHINGS

ABSTRACT

The holistic concept of Xhosa and Zulu traditional medicine and some differences from Western orthodox practice are briefly outlined. The transmission of herbal knowledge within various social groups is outlined. The background, training and some procedures followed by five of the informants are discussed. Plant characteristics that may be seen, felt, smelled or tasted are considered as possible determinants of usage. The form of plant parts accounts for some usage in the more magically orientated medicines whereas colour, texture or the production of froth may signal the presence of medicinally active components such as tannin, mucilage and saponin. The role of plants producing a milky latex is discussed. Vesicant or irritant properties are utilized in septic or inflammatory conditions. Aromatic plants are used for respiratory or digestive disorders and pungent-smelling plants are used in the treatment of catarrh and some stress-related disorders. Bitter or sour-tasting plants may be used as an aid to digestion or serve a deterrent function. Parallel usage of some related plants in African and European herbal practice indicates that appropriate usage may be widely determined by easily discerned plant characteristics. Two herbal medicinal recipes recorded by the author and a list of medicinal plants collected in Transkei are presented.

UITTREKSEL

Die holistiese konsep in die tradisionele geneeskunde van die Xhosa en die Zoeloe, en enkele verskille van ortodokse Westerse gebruike word in hooftrekke beskryf. Die oorlewering van kennis omtrent kruie in verskillende sosiale groepe en die opleiding, agtergrond en prosedures wat gevolg is deur vyf van die verskeie beoefenaars met wie die onderhoude gevoer is, word bespreek. Plantkenmerke wat gesien, gevoel, geruik of geproe kan word, word beskou as moontlik bepalend vir gebruik. Die vorm van plantdele gee aanleiding tot huile gebruik in die meer magies georiënteerde geneesmiddels, terwyl kleur, tekstuur, of die vorming van skuim 'n aanduiding kan gee van die aanwesigheid van medisinaal aktiewe komponente soos tannien, plantslym en saponien. Die rol van plante met melksap word bespreek. Blaartrekkende of irriterende eienskappe word aangewend in gevalle van septiese toestande en ontsteking. Aromatiese plante word gebruik vir respiratoriese of spysverteringongesteldhede en plante met 'n skerp, prikkelende geur word gebruik vir die behandeling van katar en sommige spanningstoestande. Plante met 'n bitter of suur smaak kan as hulpmiddel by spysvertering of as afskrikmiddel dien. Parallele gebruik van sekere verwante plante in kruiegeneeskunde in Afrika en Europa dui aan dat gepaste gebruik algemeen bepaal word deur maklik onderskeibare kenmerke. 'n Lys van plante wat in Transkei versamel is, is opgestel en twee kruiegeneeskundige resepte wat deur die outeur opgeteken is, word gegee.

CONTENTS

- Introduction
- Traditional Xhosa, Zulu and Western orthodox medicine
 - A background to Xhosa and Zulu traditional medicine
 - Some differences between traditional Xhosa, Zulu and Western orthodox medicine
- Transmission of herbal knowledge
 - 1 Categories of practitioners
 - 1.1 Villagers
 - 1.2 Herbalists
 - 1.3a Diviners
 - 1.3b Traditional doctors
 - 1.4 Homeopath/herbalists
 - 2 Informants -background and practise
- Plant characteristics as determinants of usage
 - 1 Characteristics that may be seen
 - a.Suggestive forms
 - b.Colour
 - c.Plants that froth in water
 - d.Mucilage
 - e.Milky latex
 - 2 Characteristics that may be felt
 - 3 Characteristics that may be smelled
 - 4 Characteristics that may be tasted
 - 5 Conclusion
- Plant usage in Transkei
- Recipes for herbal medicines
 - Recipe 1: medicine for swollen glands
 - Recipe 2: medicine for *ipleйти*
- Appendix
- Acknowledgements
- References

INTRODUCTION

This study is an attempt to answer the question 'How do people know which plants to use?' in traditional Xhosa and Zulu medicine. Both the transmission of herbal knowledge and the apparent role of easily discernible plant characteristics as determinants of usage are considered. Botanical fieldwork, focussed mainly on the establishment of a herbarium at the University of Transkei, presented the author with an opportunity to collect and observe many of the plants known to be used in traditional medicine. Plant species listed in this paper were collected or observed in the company of an informant and further usage was recorded from interviews. Informants from Transkei included villagers, herbalists, traditional healers and homeopath/herbalists. The author attended two meetings with a group of ten Xhosa traditional healers at St Elizabeth's hospital in Lusikisiki, Transkei, in 1986 and was also present at a meeting held in Umtata, attended by a very large group of healers from many parts of Transkei. They met to discuss the possibility of joining the SA Traditional Healers Council. One meeting with a group of ± 30 traditional Zulu healers was attended at Valley Trust in Natal in 1987. Communal cultivation of medicinal plants in short supply, potential problems in the use of toxic plants, possible means of co-operation with the relevant institutions and some plant usage were among the topics discussed at these meetings.

TRADITIONAL XHOSA, ZULU AND WESTERN ORTHODOX MEDICINE

A background to Xhosa and Zulu traditional medicine

The first written records of Xhosa and Zulu medicinal plant usage were published as early as 1885 (Smith 1895) and 1909 (Bryant 1966). Smith (1895:6) refers to the age-old oral transmission of herbal knowledge as the 'heritage of experience'. In order to understand something of this heritage a few points on the underlying concepts of disease and its treatment need to be made, as these differ from the modern Western orthodox approach to medicine. A holism, involving both the relationship between body and mind in the individual and the relationship between the individual and his social and physical environment, is to be found in traditional Xhosa and Zulu attitudes to health and disease. Bryant (1966:16) refers to the recuperative powers of the Zulu as being possibly attributable to: 'his possession of a mind working in more perfect harmony with the requirements of the body'. Ngubane (1977) distinguishes between diseases believed by the Zulu to be caused by natural, biological factors and those believed to be caused by environmental factors. Traditional belief in the presence of the ancestors, sorcery, evil spirits and mystical forces that produce pollution are presented by her as being part of the perceived social and physical environment. These are the means by which a sense of moral order and of community is fostered. Although the ancestors are believed to cause some disease themselves when offended by a failure to carry out proper rites, their function is primarily a protective one. Through the medium of dreams they call the diviners to their profession and, through them, reveal the cause and nature of an illness and also direct its cure. Bryant (1966), Ngubane (1977) and Broster (1982) all refer to the high moral standing of the diviners within their society. The sense of responsibility healers feel towards the community and the realisation of the potential effects of one person's illness on the community was demonstrated by one of the healers interviewed (Mr Y.M. -see informant 3). He said that if any member of a patient's family became ill during treatment, that person was treated by him without further charge. He also paid the medical costs of any ORe of his patients he felt needed the help of a Western-trained doctor while undergoing treatment. Traditional healers referred, on more than one occasion, to their custom of taking patients to stay in their own homes while undergoing treatment.

Some differences between traditional Xhosa, Zulu and Western orthodox medicine

The differences in the understanding of the cause of disease may account for the following differences from Western medicinal practice in forms of administration in traditional Xhosa and Zulu practice: 1, the wider use of emetics and enemas; 2, the use of snuff in stress-related disorders; 3, the rubbing of powdered medicines into scarifications on the joints; 4, the use of charms.

Ngubane (1977) refers to the extensive use of emetics and enemas to cleanse the body from harmful substances. Snuff-taking would have the same effect of cleansing the nasal passages and one group of healers, who passed snuff around before a meeting, said they were taking it 'to clear their minds'.

The rubbing of powdered medicines into freshly cut scarifications on the joints is attributed by Ngubane (1977) to the vulnerability of these areas to evil elements. Powdered medicines are also used for the relief of pain or as anti-inflammants. One healer (Mr Y.M.) used this form of treatment for an ailment he referred to as rheumatism. He said that this ailment was caused by evil spirits.

Charms are used to ward off evil and also to procure the goodwill or affection of others. In Xhosa and Zulu practice, plant material may be taken, inhaled, bathed with, sprinkled, worn or simply grown. The use of charms may appear magical in the sense of being founded on belief in the supernatural rather than on observed effects that can be scientifically accounted for, but their function is a psychological, reassuring one. The status of this sort of categorization is liable to change, being dependent on the state of knowledge at any particular time. For example, the widespread use of love-charm emetics and various fertility cures or medicines taken to procure a given gender in the baby certainly appears to be more magical than medicinal based. It is possible, however, that constituents such as steroidal saponins, which are known to be present in many of the plants used, do affect the sex hormones.

TRANSMISSION OF HERBAL KNOWLEDGE

1 Categories of practitioners

Transmission of herbal knowledge takes place within social groups. Most of the fieldwork for this study was undertaken

in the rural areas of Transkei and the practitioners observed could be roughly categorized into the following groups, which are also applicable to Zulu culture:

1.1 *Villagers* gather the plants used for various common minor ailments and some charm remedies for themselves. These plants are called by locally known common names and are often recognized by their leaves and used before flowers or fruit are present. In one village visited a very young child was sent out to collect a well known purge. He returned very quickly with a freshly dug up *Ledebouria* sp. which he had identified correctly from the Xhosa name. Some common ailment remedies such as the influenza and cold cure *Artemisia afra* Jacq. ex Willd. (Hutchings & Johnson 1986-see also the Appendix) appear to be used in all parts of Transkei and also in Zululand. It is known by the same name, *urnhlonyane*, in both Xhosa and Zulu. Within the village, more specialised knowledge is common to smaller groups, such as the grandmothers who, from information apparently passed on through the family, collect the necessary plants and prepare and administer medicines for their grandchildren.

These medicines include the purges deemed necessary for the cleansing of the newly-born or weaning child from impurities believed to be passed on by the mother. They are known as *isicakathi* and *iyeza-lamasi* in Xhosa. Small boys know the plant charms which may be placed in the mouth or hair against the wrath of a teacher or father. Older men often know which plants to use to cure or prevent disease in stock animals.

1.2 *Herbalists* gather and sell or prescribe herbal medicines and may be either men or women. As herbalists' children frequently gather herbs with or for their parents, they grow up well informed in local plant lore and often become herbalists or healers themselves. Some herbalists support themselves by their trade, dealing with healers or selling directly to the public, often from street stalls. Some practise the craft for the benefit of their family or neighbours and earn their living by other means.

1.3a *Diviners* (known as *amgqirha* in Xhosa and *izangoma* in Zulu), keep contact with the ancestors, divine the causes of misfortune and illness and may treat patients themselves. They may also refer patients to specialist traditional doctors. Diviners are usually, but not always, women. They invariably receive a strong vocational calling which they themselves refer to as a sickness, known in Xhosa as *ukuthwasa*. They receive their training from practising diviners but never from a member of their own family, although the calling frequently comes through the medium of a departed relative, often the diviner's grand-mother, who was herself a diviner. The period of training of the ten diviners interviewed varied from eight months to five years.

1.3b *Traditional doctors* (known as *amaxwhele* in Xhosa and *izinyanga* in Zulu) sell and prescribe herbal remedies for various ailments but do not usually divine the causes of an illness. According to Ngubane (1977) an *inyanga* is a male practitioner and a man who wants to become an *inyanga* is normally apprenticed to a practising *inyanga* for a period of not less than a year and the skill may be passed on to one of his sons. The men who attended the meeting in Umtata introduced themselves in English, using the title 'doctor'. Most of the women present wore the traditional head gear of a diviner.

There is an overlap between traditional doctors and diviners-many of the practitioners at the Valley Trust meeting described themselves as being both an *inyanga* and a *sangoma* and those interviewed in Transkei belonged to associations of 'traditional healers' which issued certificates of membership in English. The term 'healer' is used in this paper for both traditional doctors and diviners unless a distinction is necessary. The locally formed associations of traditional healers follow their own strict codes of ethics.

Knowledge of plant usage is taught in the field by trainers. At the meetings held at St Elizabeth's Hospital and Valley Trust specific plants were called by their local names, and their usage was quite openly discussed. Some individual forms of treatment used by diviners are revealed to them by their ancestors through the medium of dreams. Although some of these forms were discussed openly, the author was also requested to discuss others privately.

Illnesses are treated with herbal remedies which may consist of only one part of a plant or a mixture of various parts of one or more plants. Medicinal plants may be used fresh or may be dried in the sun and then stored in glass containers or hung from the rafters of huts. Roots and bark may be ground after drying. Sometimes insects or parts of animals are used and patent medicines may also be used.

1.4 *Homeopathic herbalists* undergo various correspondence courses in both herbalism and homeopathy. They frequently come from families of herbalists or traditional healers. They do not consult the ancestors and are the only group who appear to make use of published information. They may use either herbal or homeopathic remedies and study subjects such as human anatomy as well as diagnostic techniques such as reflexology or iridology. In Transkei they are referred to as 'Ooquira', the same term that is used for conventionally Western-trained doctors. One Transkeian homeopath running a correspondence course from Butterworth claimed to have over 400 students.

2 Informants-background and practise

The five informants described below were all interviewed on more than one occasion and provided much of the information on plant usage referred to in this paper. It is difficult to assess how representative this small group is of the ancient traditional practise. However, many of the plants they use and customs they referred to have been recorded in the early literature. The vocational calling of diviners through the medium of dreams is well established (Krige 1950; Broster 1982).

1, Mrs S.M., a 75 year-old retired teacher whose parents had both been *herbalists*. She had acquired an expertise from them which she practised for the benefit of her large extended family and neighbours. When asked how she knew that a plant she described had been used by the Bush-men, she said simply 'through the ancestors'. She was introduced to the author by her son, a colleague in the Botany Department at the University of Transkei. At the time of the interviews she had charge of six grandchildren in a remote rural village. She was interviewed at her home where she provided recipes for herbal medicine, including the recipe for swollen glands recorded in this paper (see Recipe 1). She also accompanied the author on a plant collecting expedition to Camana Forest near Cofimvaba.

2, Mr C.M., a middle-aged *traditional healer* and owner of herbalist shops in Lusikisiki and Flagstaff. The son of a herbalist, he had received a calling in a dream while working as a builder in Durban. He walked to Zululand and found his trainer waiting for him, although there had been no written or verbal communication. His training took five years, during which time he had no communication with his family. He then returned to his home in Lusikisiki, where he set up his business. He attended the first meeting at St Elizabeth's Hospital and was later interviewed in one of his shops. He had started his business by collecting all his own plants but he now purchases plants from other collectors. He cultivates some in pots, including *Aloe aristata* Haw., which he uses for a variety of illnesses. He trains his own assistants to dispense medicines. He said that many of the illnesses his patients suffered from were believed by them to be caused by *umfufunyane* (an evil spirit) and thus needed to be seen to be treated by stronger spirits, which he claimed to keep in beaded calabashes. This appeared to be a psychological ploy for coping with hysterical complaints. He had a special interest in the treatment of venereal diseases and also claimed an expertise in the treatment of difficult and delayed confinements.

3, Mr Y.M., a middle-aged *traditional healer* who had been practising for two years after a training of eight months. He gave up his job as a transport manager on a mine in order to become a healer. He was called in a dream, in which he saw the face of his trainer, a woman living in Ladysmith in the Orange Free State. He attended both meetings at St Elizabeth's Hospital and was also interviewed twice, once at his own home. He described how he had been trained to feel in his own body, by concentration, the symptoms experienced by his patient. His special interest was that of his trainer-what he termed 'mental' illnesses. He said that he received a lot of help and advice from his neighbour, a more experienced healer who also attended both meetings. He cultivated a few medicinal plants in his garden among which were two *Chenopodium* spp. and *Artemisia afra* Jacq. ex Willd. He collected others in the field and had to buy some such as *iqwili* (*Alepidia amatymbica* Eckl. & Zeyh.) because, he said, it grows only in the mountains, and *umavumbuka* (probably *Sarcophyte sanguinea* Sparrm.) because that, he said, could only be found in Port St Johns. *Umavumbuka* he used not only for diarrhoea but also because he found it an important plant for what he described as 'bringing out the illness in a patient' (see Appendix and Recipe 1). He indicated that many of his patients were suffering from diseases caused by sorcery or evil spirits because of a disturbed and changing life style and he felt that some of the children's ailments he saw were caused by lack of adequate parental care.

4, Mr A.B., a middle-aged labourer of mixed Black and White parentage was the only *healer* interviewed who had not been formally trained. He claimed to have been instructed by his grandmother in dreams as to which plants to use. He attended the first meeting at St Elizabeth's Hospital and was obviously well known by the group of healers present. He was interviewed the following day at the hospital. He brought the author a bottle of medicine, the recipe and the plant *Drimiopsis maculata* Lindl. (*Hutchings* 2225 KEI) used for the infant disease known as *ipleyiti*, discussed later in this paper.

5, Mr F.N. a 40 year-old *homeopath-herbalist* whose father had been a herbalist and taught him much traditional usage. He later studied herbalism and home-nursing by correspondence. He then completed a four year course in homeopathy with a correspondence college in England. The author met him in the University of Transkei herbarium where he came with a query about *Hypoxis* spp. He was subsequently interviewed at his surgery a number of times and accompanied the author on a brief collecting expedition in the vicinity of his surgery at Nqeleni in Transkei. He uses either herbal or homeopathic remedies but does not mix them. He employs iridology and reflexology in diagnosis. He has a trained hospital nurse working for him and he dispenses his own medicines. Many of the plants he uses grow in his garden. He sends his gardener out to collect others when needed and he buys some from herbal vendors. He has a special interest in cancer. He sometimes uses *Hypoxis* spp. corms to treat cancer and also, for uterine tumours, the young root of a *Phytolacca* sp. He attributed most of the illness he sees in babies and adults to malnutrition and also said that he frequently has patients suffering from hysteria caused by the belief that they have been bewitched. In the treatment of hysteria he often uses a tea made from *Viscum anceps* E. Mey. ex Sprague (see Appendix). He said an overdose could cause drowsiness, which passed in time, and he was careful to avoid using the plant when in fruit.

PLANT CHARACTERISTICS AS DETERMINANTS OF USAGE

Usage of related groups of plants for similar ailments is recorded in the literature and has been observed by the author. While transmitted knowledge obviously determines usage it seems that easily discernible plant characteristics were probably the original determinants. Some of these characteristics are outlined below with a few added examples from cultures other than Xhosa and Zulu.

1 *Characteristics that may be seen*

a. *Suggestive forms*

Some evidence of the role of suggestive forms in plant parts in Zulu folk medicine has been documented, mainly in connection with procreation-related conditions. A traditional healer's claim to be able to cure barrenness by the use of a corm resembling the female genitalia was recorded and published in 1927 (Bayer & Lebzelter). The same plant, *Gloriosasuperba* L., has been recorded by Bryant (1966) and Gerstner (1939) as being given to parents wishing to have a baby of a particular gender and also as being used as an aphrodisiac, while Hulme (1954) records its use as a love charm emetic. The closely related *Sandersonia aurantiaca* Hook. and *Littonia modesta* Hook., with corms of a similar shape, are also recorded as aphrodisiacs (Gerstner 1939). *Crocoshmia* and *Gladiolus* spp. are aptly described by Gerstner (1941: Y/5) as having a 'string of corms grown together' and recorded by him as being used to treat barren women. He compares the Zulu name of the medicine, *uNdwendweni* to *uDwendwe*-the wedding procession. He also records that various other Iridaceae species are carried during planting as charms to bring fertility to the crops. Hulme (1954: 10) records that a man, suspecting that his girl's love is waning, gives her an infusion of *Cyrtorchis arcuata* (Lindl.) Schltr. so that 'she will cling to him as the orchid clings to the tree'. The epiphytic orchids frequently sold in herbalists shops as love charm emetics or aphrodisiacs for men are likely also to be used on account of the form.

A parallel European example is that of the 'Mandrake' which was known as male or female according to the form of its roots. Desmond (1986) records that *Mandragora officinarum* L. (Solanaceae) was frequently illustrated in herbals, one of the earliest records known being in the Anglo Saxon Herbal (\pm 1200). The roots of the plant were thought to resemble a human

being and if pulled out were said to emit such a scream as to cause instant insanity or death in the collector. This could be avoided by ritual incantations or by having the roots pulled out by a dog, who would then go mad. The fearsome plant was highly valued as a powerful aphrodisiac. Early parallel usage of Orchidaceae is also known. Richter (1965) points out that the origin of the name *orchis* from the original Greek word for testicle. He claims that in medieval times, when the medical Doctrine of Signatures was adhered to, preparations from the tubers of certain orchids were regarded as sexual stimulants and also that a child of the required gender could be produced by using a tuber of -the right age, the younger ones being thought to procure a male child.

b. Colour

While colour as a determinant has not been documented in the literature surveyed for this study, the author accompanied Mr EN. in a search for the plant he knew as *umavumbuka* which differed from the author's description of *Sarcophyte sanguinea* Sparrm. He was looking specifically for a red material and eventually found, just below the surface of the ground, a very large reddish swelling on the root of an *Acacia karroo* Hayne tree that was neither of the two red parasites called 'Umavumbuka' by both the Zulu and Xhosa. These are *Sarcophyte sanguinea* Sparrm. and *Hydnora africana* Thunb. and both are used for diarrhoea and dysentery. The plant material was sent away for identification but no conclusion has yet been reached. *A. karroo* itself has a red root bark and inner bark and is used as an astringent medicine (Bryant 1966). It seems likely that the colour here does play a determinant role and possibly signals the presence of tannin, which is often present in the plants used for sore throats or diarrhoea and dysentery, and would be effective on account of its protein-precipitating, barrier-forming property. Bryant describes the inner bark of the 'uNgazi' tree as crimson and the roots of *Elephantorrhiza elephantina* (Burch.) Skeels = *E. burchellii* Benth. and an *Indigofera* sp. as red. All of these plants are used for diarrhoea and dysentery. Red streaking has been observed by the present author on Geraniaceae spp. used for the same purpose and was observed in the 17th century by Culpeper (1826) on 'Herb Robert' (= *Geranium robertianum* L.). This was used as an astringent 'to stay the blood'. It is also referred to by Flück (1976) as an anti-diarrhoeal and as used for inflammation of the mucosa of the mouth. Flück (1976) refers to the astringent properties and presence of tannin as well as to the red tinges frequently seen on the stem of *Polygonum hydropiper* L.

c. Plants that froth in water

Saponins are widely present in plants and may be detected by their property of frothing in water, a property which is made use of in the preparation of emetics. Mention has already been made of the large number of emetics used in traditional medicine and they are used for a wide range of conditions, including nausea, fever, snake-bite and coughs. They are also taken to induce the trances needed for divining, as love charms and as antidotes against bewitchment. Saponins have an irritant effect on the mucosa, which is why they make effective emetics. They are well known in the closely related Caryophyllaceae and Illecebraceae. *Silene* spp. and *Dianthus crenatus* Thunb. (both Caryophyllaceae) are used as Zulu emetics (Hulme 1954; Gerstner 4666 PRE) while *Saponaria officinalis* L. (Caryophyllaceae), commonly known as 'soapwort' in English, is used as a mild laxative and expectorant in Europe (Flück 1976).

d. Mucilage

A mucilaginous exudate has been observed by the author in the bulbs of some Amaryllidaceae species used for wound healing and rashes and also in the purging medicine made from the bulbs of *Drimiopsis maculata* Lindl. This may be a guide to usage. Mucilage applied externally would promote healing by forming a barrier to further irritation. Taken internally, it has a laxative effect which is attributed by Flück (1976) to its property of swelling in water. The closely related Malvaceae and Tiliaceae families are known to be rich in mucilage (Trease & Evans 1983). This seems likely to be the constituent utilized in the *Hibiscus* and *Grewia* spp. used in the treatment of urinary disorders. Bryant (1966) records that the medicine is directly introduced through the urethral channels. *Grewia caffra* Meisn. and *Sida dregei* Burt Davy are also recorded as being used in the treatment of sores and wounds (Gerstner 1938, 1939). Flück (1976) records the use of *Malva neglecta* Wallr. (Malvaceae) for abscesses and as a mild purgative in Europe.

e. Milky latex

The use of *Ficus sur* Forssk. (= *F. capensis* Thunb.) as a bovine galactagogue and *Sarcostemma viminale* (L.) R. Br. as a human and bovine galactagogue would appear to be on account of presence of the milky latex. The practice has been described as a matter of mimetic magic (Watt & Breyer-Brandwijk 1962). The milky latex found in many Euphorbiaceae, Apocynaceae and Asclepiadaceae may signal their toxicity and may have accounted for the wide African use of various species as arrow poisons or snake-bite cures. Gerstner (1939) records the use of *Euphorbia ingens* E. Mey. ex Boiss. as a purgative given in very small amounts. The latex is known to be highly irritant. Watt & Breyer-Brandwijk (1962) refer to African emetic and purgative use of *F. u. phorbium pugniformis* Boiss. " which may have accounted for a reported death following medicinal administration. Culpeper (1826: 168) writes of 'petty spurge' (also Euphorbiaceae) as: 'The whole plant is full of a caustic milk, burning and inflaming the mouth ... a strong cathartic ... by reason of its sharp corrosive quality and therefore ought to be used with caution'.

2 Characteristics that may be felt

Bryant (1966: 57-59) refers to the use of various caustic plants including *Ranunculus multifidus* Forssk. (= *R. pinnatus* Poir.), *Mikania capensis* De. and *Cardiospermum halicacabum* L. as poultices in the treatment of venereal sores, stating that they are 'said to burn away all the foulness of the ulcerated parts, leaving them clean, and stimulating them to rapid healing'. He suggests that the same principle is employed when *Croton* spp. are inserted into the womb in cases of uterine inflammation. Vesicant or caustic properties are known to be present in many species of Thymelaeaceae, Euphorbiaceae and Ranunculaceae. These properties are likely to account for the usage of many species from these families for skin complaints, wounds and sores and for their occasional use as cancer cures. Counterirritants recorded by Bryant (1966) include *Diospyros villosa* (L.) De Winter (= *Rayena villosa* L.) and *Croton* spp. The stinging properties of various Urticaceae spp. would explain their use as sexual irritants for cattle or men, recorded by both Gerstner (1938) and Bryant (1966). In Europe *Ranunculus*

spp. are referred to as being rubbed into the skin for rheumatism by Flück (1976). Flück (1976) and Culpeper (1826) refer to the use of *Urtica* spp. for rheumatism.

Plants that have been recorded as irritant to the eyes, nose or mouth and are used for headaches or catarrh include *Andrachne ovalis* (Sond.) Muell. Arg. (Gerstner 1941) and *Synadenium cupulare* (Boiss.) L.e. Wheeler (Watt & Breyer-Brandwijk 1962).

3. Characteristics that may be smelled

Scented flowers do not appear to play a role in Zulu or Xhosa medicine, but sweetly scented or aromatic leaves or roots are sometimes used as cosmetic or purification washes. *Cymbopogon marginatus* (Steud.) Stapf ex Burt Davy has an aromatic rootstock and, according to the Valley Trust group of healers, is used by the sangoma as a purification wash after funerals and by all women as a purification wash after menstruation. Hulme (1954) records that the lemon-scented *Heteropyxis natalensis* Harv. is used as a perfume. The aromatic *Achyrocline stenoptera* (De.) Hilliard & Burt (= *Helichrysum stenopterum* De.), is used by women to wash away body odours while *Helichrysum cooperi* Harv. is used as a wash by young men wishing to attract women (Watt & Breyer-Brandwijk 1962). *Helichrysum odoratissimum* (L.) Sweet is used by the Sotho to fumigate huts and to make a pleasantly perfumed ointment (Watt & Breyer-Brandwijk 1962). This plant is burnt by the Xhosa as an incense to invoke the ancestors and as a purification and protective charm (Hutchings & Johnson 1986).

The principal causes of aromatic odour in plants are volatile oils (Flück 1976), a number of which are known to have therapeutic or antispasmodic activity (Trease & Evans 1983). Species from the notably aromatic families, Rutaceae, Apiaceae, Lamiaceae and Verbenaceae, and various aromatic Asteraceae spp. are used by the Xhosa and Zulu for coughs, colds and influenza (see *Artemisia afra* Jacq. ex Willd. in Appendix) as well as carminative purposes. Back (1987) records that the strongly scented *Achillea millefolium* L. is used in England for feverish colds and indigestion or flatulence.

Aromatic or pungent-smelling plants used in stress-related disorders include *Clausena anisata* (Willd.) Hook. f. ex Benth., the pounded roots of which are used in an emetic for people made ill by evil spirits or the ancestors (pers. comm.). The peppermint-smelling roots of *Monan-thotaxis caffra* (Sond.) Verdc. are smoked for hysteria (Gerstner 1939). The plant is also used as a charm against bad dreams (Watt & Breyer-Brandwijk 1962). *Ocotea bul/ata* (Burch.) Baill. and *Cardiospermum halicacabum* L. are among the strong-smelling plants used to relieve headaches and catarrh (Hulme 1954; Watt & Breyer-Brandwijk 1962). A *Kaempferia* sp. is referred to by Watt & Breyer-Brandwijk (1962) as good for catarrh, driving away snakes and warding off lightning. Taken in mealiemeal, it is supposed to keep away the effects of drought and heat and also to protect the inyanga from the dangerous effects of the plants collected. Garlic-smelling *Tulbaghia* spp. are grown by both the Xhosa and Zulu to keep snakes away from the homestead and smeared on the bodies of Xhosa diviners before dancing as a protective device (pers. comm.) Gerstner (1938) records that a number of strong-smelling Apiaceae and Lamiaceae are grown to keep away evil spirits.

Culpeper (1826: 59) writes of 'common feverfew' (*Chrysanthemum* sp.): 'Its unpleasant foetid smell bespeaks it useful in hysteric disorders'. The drug Valerian, often used in Europe as a carminative and antispasmodic in hysteria and nervous disorders comes from *Valeriana officinalis* L. (Trease & Evans 1983) and is commonly called by English botanists 'stinking Valerian' on account of the odour that develops when the root is dried.

Strong-smelling plants are also often used by the Xhosa and Zulu as anthelmintics e.g. *Clausena anisata* (Willd.) Hook. f. ex Benth. and *Clerodendrum glabrum* E. Mey., or as insect repellants e.g. *Cymbopogon marginatus* (Steud.) Stapf ex Burt Davy (= *Andropogon marginatus* Steud.) and *Andrachne ovalis* (Sond.) Muell. Arg. (Watt & Breyer-Brandwijk 1962; Gerstner 1941). The strong-smelling *Chrysanthemum parthenium* (L.) Bernh. is an English insect repellent (Back 1987).

4 Characteristics that may be tasted

The sour-tasting leaves of *Embelia ruminata* (E. Mey. ex A. De.) Mez and a *Pavetta* sp. are chewed as a tonic (Gerstner 1938). The roots of *Mondia whitei* (Hook. f.) Skeels, chewed for the relief of indigestion, taste first bitter and then sweet (Gerstner 1941). Bryant (1966) records that the very bitter *Vernonia adoensis* Sch. Bip. ex Walp. (= *V. woodi* O. Hoffm.) is said to be a useful stomachic. A number of *Aloe* spp. are recorded by Gerstner (1941) as being applied to the mother's breast at weaning. The known bitter taste of many species would surely account for their use in discouraging suckling. Any fieldworker who has collected Asclepiadaceae spp. would understand the use made of the bitter latex when applied to eggs to deter dogs from stealing them as recorded by Hulme (1954).

The bitter taste of aloes was recorded by Culpeper (1826). The purgative properties of *Aloe* spp. are noted in the *Oxford English Dictionary*, with English citations going back to the 14th century and etymological evidence going back to Latin and Greek. The use of the bitter *Artemisia absinthum* L. and *A. vulgaris* L. as digestion stimulants was recorded by Flück (1976).

5 Conclusion

Jensen & Nielsen (1984) point out that chemistry has always been used in the classification of plants, exemplifying chemical characters by the colour, taste and smell of various parts of the plant. It would seem from parallel usage of related plants in African and European herbal practice that appropriate usage may be widely determined by easily discerned plant characteristics.

PLANT USAGE IN TRANSKEI

Medicinal plants were collected and their usage recorded by the author in Transkei from 1983-1987 (see Appendix). The categories of informants interviewed include the following:

Villagers: (a) villagers encountered by chance on collecting trips; (b) some inhabitants of Ndunguniyeni Village in the Engcobo area of Transkei; (c) staff and students who either brought the author plants or were with the author when plants were collected. They recalled plant usage from their earlier experience in the rural areas.

Herbalists: (a) Mrs S.M. (informant 1 above); (b) a herbalist who visited the herbarium and discussed various medicinal plants on display; (c) street vendors from whom plants were bought by the author.

Healers: (a) Mr C.M. (see informant 2 above); (b) Mr Y.M. (see informant 3 above); (c) healers attending the St Elizabeth's Hospital and Valley Trust meetings.

Homeopath/herbalist: Mr F.N. (see informant 5 above).

All the plants in the Appendix, with the exception of *Sarcophyte sanguinea* Sparrm. and the *Hypoxis* spp., were collected or observed by the author in the company of an informant. The anti-diarrhoeal use of *Sarcophyte sanguinea* was recorded from many informants and its Xhosa name was confirmed from a pickled herbarium specimen (Johnson 222 KEI). This had originally been collected for the herbarium by a traditional healer from Kei Mouth. *Hypoxis* spp. were shown to Mr F.N. so that he could confirm his identification of the genus and were also discussed by their Zulu names at the Valley Trust meeting. The plants listed in the Appendix were selected on account of properties which appear to the author to indicate a possible appropriate usage.

RECIPES FOR HERBAL MEDICINES

Recipe 1: medicine for swollen glands

The following recipe for swollen glands was given to the author by Mrs S.M. (informant 1 above) in the presence of her son, who is a botanist. Mrs S.M. said that the medicine was also effective against cancerous growths. Unfortunately the four ingredients were recorded during a drought and not collected. It was possible to make hypothetical determinations from the Xhosa names and the plant descriptions. The recipe is included for its information on method. Although the plants used are different, the way in which the medicine is prepared and used is similar to that described by Bryant (1966) for the treatment of tumours ascribed by him to scrofula. *Method:* mash and boil the roots of *isinama* and *amaselwa* and the rootstock of *umavumbuka* to make one litre of pulp. Place the cooking pot while it is still hot on a folded shawl on the patient's head for neck glands, chest for armpit glands and stomach for groin glands. When cool enough use the mixture directly as a poultice on the affected glands. When further cooled, add two teaspoons of *imithombo* as a ferment and give the patient two spoonfuls as necessary. This medicine has a bad taste and may be diluted.

The four ingredients are interesting. *Isinama* was described as sticking to clothing and is likely to be the common weed *Achyranthes aspera* L. (Amaranthaceae), which is also called *isinama* by the Zulu. Watt & Breyer-Brandwijk (1962) record that the leaf and seed are applied in India to inflamed and enlarged glands. Oliver-Bever (1986), quoting Neogi *et al.* (1970), refers to the diuretic and slightly anti-pyretic properties of achyranthine, the betaine derived from the plant. She also tables the anti-leprosy action of the seeds produced by the oleanolic glycoside, referring to the work of Gopalachari & Dhar (1958) and Ojha *et al.* (1966).

Amaselwa was described as the calabash creeper and identified by the informant's son as being either *Lagenaria siceraria* (Molina) Standl, or *L. sphaerica* (Sond.) Naud. (Cucurbitaceae). A pounded root decoction of *L. sphaerica* has been recorded by Hulme (1954) as being used by the Zulu for treating a swollen body caused by some blood disorder. Watt & Breyer-Brandwijk (1962) refer to a small form of *L. siceraria* which is thought to contain amygdalin and so to be cyanogenetic. Another member of the family, *Momordica charantia* L. is referred to in the following extract (Sofowara 1982: 208): 'With alcoholic extracts of the stems, leaves and fruits Abbott *et al.* (1966) demonstrated remarkable anticancerous action on mice with transportable 180 tumours. Aqueous extracts of the roots also proved effective in reducing the tumour'.

Imithombi is a solidified fermented paste made from the fruit of a cultivated *Sorghum* sp. The stem pith has been recorded as being used by the Xhosa to treat tubercular swellings (Watt & Breyer-Brandwijk 1962). *Sorghum* is one of the genera cited as containing cyanogenic compounds and free HCN by Nartey (1981: 73). He writes: 'cyanogenic glycosides are reputed to possess some therapeutic properties against cancer. Their action against cancer cells produces large amounts of B-glucosidases, so that HCN produced by the enzymic cleavage of, for example amygdalin and prunasin, exerts its full inhibitory influence on the growth of neoplastic cancer cells'.

Umavumbuka, described by the informant as having a red rough-textured rootstock with red sap and small white flowers and growing on the roots of old trees, is likely to be the parasite *Sarcophyte sanguinea* Sparrm., referred to in the Appendix as a diarrhoea remedy. While no chemical research on this plant is known to the author, another parasite, *Hydnora johannis*, from the Sudan, has been found to have a high concentration of phenolic compounds in the roots, imparting an astringent quality which would account for its antidiarrhoeal use (Visser & Musselman 1986). *Hydnora africana* Thunb. is also known to the Zulu as *umavumbuka* and is similar in colour and habit to *S. sanguinea*, both being found on the roots of trees. A species from another parasitic genus, *Viscum* has been used in Africa for the removal of warts (Watt & Breyer-Brandwijk 1962) and it has been recorded that *V. album* L. may inhibit the growth of certain tumours if applied directly on or into the tumour (Flück 1976).

Recipe 2: medicine for ipleyiti

Ipleyiti is an alleged disease of newly born and very young infants described variously by several informants as 'producing an old look in the newly born', 'producing green veins stretching from the arms to the stomach', 'the result of a placenta formed like an enamel plate', 'producing much crying and green stools'. It is a condition frequently treated by traditional healers. It was ascribed by one healer, Mr Y.M. to unsuitable behaviour on the part of the mother, such as going to too many drinking parties before giving birth, or to sorcery. The homeopath/herbalist, Mr F. N. said that the cases he sees are either cases of colic or are babies born to mothers suffering from malnutrition. One informant from a village said that the disease

had come from Zululand. This belief is also mentioned by Broster (1982), who confirms the high incidence, the deformed placenta and the attribution to sorcery. She states that a baby suffering from the disease is usually born prematurely and remains sickly. The disease is also known among the Zulu, and Ngubane (1977) suggests that the Zulu term *ipletiti* is used in a manner that suggests deprivation and starvation.

The recipe for medicine for *ipletiti* was provided by Mr A.B. The plant used is *Drimiopsis maculata* Lindl. and the author was able to see the medicine as well as to collect the plant (Hutchings 2225 KEI). The medicine is known as *nstwilisa* or *nomatyunyuma*.

Method: crush the bulbs and add cooled, boiled water (\pm 4 bulbs to 250- 300 ml water, depending on size of bulbs). Add a pinch of salt to preserve the medicine, which will last for about ten days. The dose varies from one teaspoon to a tablespoon as required. For older children, a spoon- ful of Epsom salts may be added.

The medicine was very slimy, indicating the presence of mucilage. Mr V. M. confirmed that he used the same plant for treating *ipletiti*. The bulbs of *Drimiopsis maculata* are recorded by Hulme (1954) as being used by the Zulu. They are steeped in water to make an enema for young children with stomach trouble.

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APPENDIX.. - Medicinal plant usage recorded in Transkei, 1983 - 1987

Plant; family Xhosa name	Category of informant	Part used / preparation / application / ailment	Record / habitat / voucher (KEI)	Observed characteristics / Indicated constituent
<i>Alepidea amatymbica</i> Eckl. & Zeyh.; Apiaceae; <i>iqwili</i>	Villager; herbalist; healer; homeopath	Root sucked for sore throat and for coughs and colds	Recorded and confirmed by informant from <i>Hutchings 2175</i>	Aromatic, resinous, tastes of turpentine
<i>Aloe striatula</i> Haw.; Liliaceae; <i>ingcelwane</i>	Herbalist	Crushed root infusion administered orally or as an enema for constipation	Growing as kraal fence. <i>Hutchings 846</i>	Aloins and resins recorded in <i>A. ferox</i> Mill. (Watt <i>et al.</i> 1962)
<i>Artemisia afra</i> Jacq. ex Willd.; Asteraceae; <i>umhlorryane</i>	Herbalist; healer; homeopath; villager	Plant infusion drunk or inhaled- or leaves inserted in nostrils for influenza/colds	Cultivated by healer. Collected in open grassland. <i>Hutchings 392</i>	Aromatic, bitter taste reported by an informant
<i>Brunsvigia grandiflora</i> Lindl.; Amaryllidaceae; <i>isichwe</i>	Villager	Outer bulb scale used as circumcision dressing -rapid healing reported	Open grassland collected and cultivated in author's garden	Mucilaginous drops on bulb scale
<i>Bowiea volubilis</i> Harv. ex Hook.; Liliaceae; <i>umgagagana</i>	Herbalist	Bulb boiled, water changed many times then used as a purgative	Forest margin. <i>Hutchings 837</i>	Bulb irritant to touch. (Watt <i>et al.</i> 1962). Cardiac glycosides
<i>Carpobrotus edulis</i> (L.) L. Bo!; Mesembryanthemaceae	Homeopath	Leaves chewed or sap extracted for sore throats. Sap used for allergies and diabetes	Observed cultivated in homeopath's garden	Succulent. Catechol tannins (Watt <i>et al.</i> 1962)
<i>Chenopodium</i> spp.; Chenopodiaceae; <i>iyeza-lomkondo</i>	Healer	Ground leaves mixed in a medicine rubbed into cuts on painful joints caused by sorcery or evil spirits. Medicine also taken orally	Cultivated by healer. <i>Hutchings 2259,2260</i>	Vitamin C; mucilage; iron; salts; re <i>bonus-henricus</i> L.) (Chiej 1984; Watt <i>et al.</i> 1962)
<i>Duchesnea indica</i> (Andr.) Focke; Rosaceae; <i>igunube</i>	Herbalist	Crushed roots an ingredient in a decoction for diarrhoea known as <i>isisusenja</i>	Recorded from description-observed growing in disturbed areas	Tannins common in family
<i>Hypoxis</i> spp.; Hypoxidaceae; <i>inongwe</i> (Xhosa); <i>inkomfe</i> (Zulu)	Homeopath; healers	Rhizome extraction used for heart palpitations and cancer by homeopath and for hysteria and ulcers by Zulu healers	Recorded from local and botanica names and genus confirmed by homeopath from herbarium specimens	Yellow rhizom
<i>Matricaria nigellifolia</i> De. var. <i>tenuior</i> De.; Asteraceae; <i>umhloniyane</i>	Villager; herbalist	Leaf and stem infusion drunk for influenza	Stream banks on commonage. <i>Hutchings 377</i>	Aromatic. Volatile oils in related spp.
<i>Pachycarpus concolor</i> E. Mey.; Asclepiadaceae; <i>ishongwe</i>	Villager; herbalist; healers	Dried ground tuber used for stomach pains (a spoonful in cold water) also used as snuff for headaches and hysteria	Open grassland, information also recorded using Xhosa plant name. <i>Hutchings 347</i>	Bitter taste
<i>Pelargonium sidifolium</i> (Thunb.) Knuth; Geraniaceae	Herbalist	Crushed roots an ingredient in a remedy for <i>intsila</i> stomach disease in small babies and also in a decoction for severe diarrhoea (<i>isisu esikhulu</i>)	Disturbed grassland commonage. <i>Hutchings 845</i>	Red root. Tannins in genus (Watt <i>et al.</i> 1962)
<i>Pentanisia prunelloides</i> (Klotzsch ex Eckl. & Zeyh.) Walp.; Rubiaceae; <i>icikamli/o</i>	Homeopath	Dried powdered tubers used for diarrhoea and vomiting and in fever remedy	Observed in field next to surgery of homeopath	
<i>Phytolacca octandra</i> L.; Phytolaccaceae; <i>Iyeza lesilonda</i>	Villager	Leaves applied to septic wound caused rapid healing	Collected by ranger for author. <i>Hutchings 2299</i>	Saponoside (Oliver-Bever 1986)
<i>Plantago lanceolata</i> L.; Plantaginaceae	Homeopath	Dried powdered leaves mixed with <i>L. major</i> L. in vaseline for sores	Cultivated in garden of informant	Mucilage and aucubin (Flück 1976)
<i>Plantago major</i> L.; Plantaginaceae	Homeopath	Dried powdered mixed with <i>L. lanceolata</i> L. in vaseline for sores	Cultivated in garden of informant. <i>Hutchings 2291</i>	Mucilage and aucubin (Flück 1976)
<i>Punica granatum</i> L.; Punicaceae; pomegranite	Herbalist	Rind an ingredient in decoction drunk for diarrhoea (<i>isisu senja</i>)	Recorded from English name. Trees cultivated in area	Red rind. Tannin found in rind
<i>Rhus dentata</i> Thunb.; Anacardiaceae; <i>ntlolokoshane</i>	Villager; homeopath	Fruit eaten to relieve thirst, leaves used in sore throat remedy	Observed and collected. <i>Hutchings 52</i>	Fruit sour, Tannins known in some spp. (Watt <i>et al.</i> 1962)
<i>Rumex</i> sp.; Polygonaceae	Homeopath	Leaf infusion drunk for indigestion	Growing in homeopath's garden. <i>Hutchings 2290</i>	Lemon-scented. Anthraquinones common in genus (Trease <i>et al.</i> 1983)
<i>Sarcophyte sanguinea</i> Sparrm.; Balanophoraceae; <i>umavumbuka</i>	Herbalist; healer; homeopath	Crushed rootstock an ingredient in decoction drunk for diarrhoea (<i>isisu senja</i>)	Recorded from name and description, confirmed by <i>Johnson 222</i>	Red rootstock
<i>Schinus molle</i> L.; Anacardiaceae; pepper tree	Herbalist	Leaf infusion inhaled or drunk for cold and influenza	Observed in garden	Aromatic, pungent-tasting, Resin, volatile oils*
<i>Solanum supinum</i> Dun.; Solanaceae; <i>umtumna</i>	Herbalist	Ground roots an ingredient in a decoction for severe diarrhoea (<i>isisu esikhulu</i>)	Disturbed grassland commonage. <i>Hutchings 847</i>	Solanine
<i>Sutera aurantiaca</i>	Herbalist	Leaf infusion inhaled or drunk for cold and	Open grassland. <i>Hutchings 836</i>	Aromatic, therefore may contain

(Burch.) Hiern; Scrophulariaceae; <i>phantsi-komthu</i>		influenza. Leaves also inserted in nostril		volatile oils
<i>Sutera paucijlora</i> (Benth.) Kuntze	Villager	Plant used as anthelmintic	Disturbed commonage. <i>Hutchings</i> 1534	Triterpenoid and steroidal saponins in family (Trease <i>et al.</i> 1983)
<i>Viscum anceps</i> E. Mey. ex Sprague; Viscaceae; <i>isiselde</i>	Homeopath	Plant used to treat hysteria and skin complaints	Parasite on <i>Acacia</i> sp.. <i>Hutchings</i> 2262	Sticky; choline; acetylcholine; Inositol (<i>V. album</i>) (Chiej 1984)
~ <i>Xysmalobium undulatum</i> (L.) Ait. f.; Asclepiadaceae; <i>ishongwe</i>	Villager; herbalist; healers; homeopath	Dried ground tuber used for stomach pain, as a purgative and as snuff for hysteria and headaches	Recorded from Xhosa name and collected in open grassland. <i>Hutchings</i> 2294	Bitter taste; acid saponin

* Personal communication from Noristan Laboratories