

A review of plants used in divination in southern Africa and their psychoactive effects

J. F. Sobiecki

Department of Anthropology & Development Studies, University of Johannesburg,
P.O. Box 524, Auckland Park, 2006 South Africa; phytoalchemist@gmail.com

ABSTRACT

Numerous indigenous healing traditions around the world employ plants with psychoactive effects to facilitate divination and other spiritual healing rituals. Southern Africa has often been considered to have relatively few psychoactive plant species of cultural importance, and little has been published on the subject. This paper reports on 85 species of plants that are used for divination by southern Bantu-speaking people. Of these, 39 species (45 %) have other reported psychoactive uses, and a number have established hallucinogenic activity. These findings indicate that psychoactive plants have an important role in traditional healing practices in southern Africa.

KEY WORDS: Divination, psychoactive, Shamanism, traditional healing, medicinal plants

I eat medicines that work in my body like matches to dry wood. I do not open my eyes. It is not with my eyes that I see. My ancestors see for me. I see in a dream (the diviner Mahube to Kuper 1942: 167–8).

Psychoactive or psychotropic substances are substances that, when ingested, affect the mind or mental processes. They can be defined as chemical substances that are used for the modification of emotional, intellectual and behavioural function in humans (Werry & Aman 1993).

Practitioners of various magico-religious traditions around the world employ plants with psychoactive effects to facilitate spiritual healing (De Korne 1994; Harner 1973b; Schultes & Hofmann 1992). These plants are used in divination, sorcery and ancestor worship, and have even been considered as “plant teachers” (Luna 1984). The use of plants in divination has a long history. Use of the cactus *Echinopsis pachanoi* dates back 3000 years (Schultes & Hofmann 1992), while some hold that the visionary revelations of the Pythia, the divinatory priestesses of the Delphic Oracle, were stimulated by inhaling the psychoactive vapours of henbane, *Hyoscyamus niger* (Ratsch 1987). It has also been suggested that the Pythia, also called the Delphic Bees, would divine only after ingesting psychotropic *meli chloron* or green honey (Mayer 1995; Ott 1998).

In societies where indigenous healing practices are common, there is a fundamental belief in the spirit world and its influence on the wellbeing of the individual. In some of these societies altered states of consciousness (ASC) provide a means to gain access to the spirit world (which can be understood as the world of symbols and the unconscious). Psychoactive plants that produce ASC are considered great medicines (Schultes & Hofmann 1992). Not much attention had been paid to the use of psychoactive plants in divination in southern Africa. What reports exist are often marginal to other ethnobotanical enquiries. Indeed, an analysis of Liengme’s (1983) survey of ethnobotanical research in South Africa shows that the majority of studies of indigenous plant-use have focused on medicinal plants (16 %) and food plants (20 %), with only a few (7 %) relating to the category ‘Magic, ritual and customs’ (Dold & Cocks 1999).

Possible reasons for this lack of attention include researcher bias concerning substance use as part of spiritual healing practices (Winkelman & Dobkin de Rios 1989), an ethnobotanical focus on shamanic and hallucinatory plant use in the Americas (De Smet 1996), and an overlooking of more subtle psychoactive qualities of plants medicines. An additional reason is the loss of orally transmitted plant-use information as people abandon traditional practices.

Recently some researchers have embarked on revitalising the topic of psychoactive plant-use in southern Africa (Mitchell & Hudson 2004; Sobiecki 2002). This paper aims to build on these works by investigating and documenting the use of psychoactive plants by Bantu-speaking diviners.

Southern Bantu diviners

Southern Bantu diviners (e.g. Xhosa: *amagqirha*, Zulu: *izangoma*) are called to their profession by their ancestors. “The verb *ukuthwasa* refers to this process of becoming a diviner, and the noun *intwaso* to the state or condition of the person undergoing the process” (Hirst 1990: 89). The *intwaso* condition is characterised by a ‘trouble’ (*inkathazo*) that involves various illnesses, copious dreams and psychiatric disturbances (Callaway 1868).

To become a diviner the initiate must first be cured of the *intwaso* condition. The treatment includes the use of special plant-based “medicines of the home” (Hammond-Tooke 1998: 12), dieting with *ubulawu* and training in techniques of divination and curing. The novice is apprenticed to a practising healer who teaches him or her the ways of indigenous healing.

Ill-health and misfortune are believed to stem from ancestral wrath, witchcraft or ritual pollution (Hammond-Tooke 1998). It is the diviner’s work to discover the cause of this misfortune and then to apply or recommend appropriate action, in the form of prescribing plant medicines or rituals.

Shamans & southern Bantu diviners

Because of differing worldviews, cultural practices and customs, I make the distinction between the vocations of the classical Asian shaman (used here as a prototype) and the Southern Bantu diviner. However, the Southern Bantu diviner shares with global shamanic healers the ability to utilise trance and altered states of consciousness (ASC), or what could be better described as ‘enhanced states of association’ (ESA), for healing purposes. Other similarities include communicating with ‘spirits’ (Boshier 1973: 282; Junod 1962: 529; Kohler 1941; Schweitzer 1977: 98–9), undertaking ‘soul journeys’ while dreaming or trancing (Hammond-Tooke 1998: 12; Kohler 1941; Lambrecht 1998: 153), and having animal spirit guides. Both types of practitioners also use psychoactive substances to facilitate dreaming (Lambrecht 1998) and to divine.

During the fieldwork, no reports were obtained of San influence on the diviners’ use of psychoactive plants or accompanying ASC. This is because the focus of my research is not on the cultural origins of the use of these plants, but on their uses, preparation and effects.

RESEARCH METHODS

This study is based on research that included interviews with indigenous healers, muti¹ traders, muti users, and ethnobotanists, conducted mainly from late 1998 to 2003, and

¹ from Zulu *umuthi*, pl. *imithi* = tree, plant, medicine, medicinal charm, wood.

periodically until the present (see also Sobiecki 2002). Most of the fieldwork was conducted on the East Rand, Gauteng, South Africa. The fieldwork comprised semi-structured interviews with 19 practising indigenous healers (ten female and nine male) at their muti shops or homes. Fourteen of the healers are diviners, while five are herbalists who do not divine. Most were interviewed in the Witwatersrand urban area; some interviews took place in the Free State and KwaZulu-Natal. I traced the healers through word of mouth or through telephone directories. I established a close relationship with four of the healers and continue to discuss issues with them today. I also held informal interviews with approximately 30 other people, including muti traders, muti customers, academics and other ethnobotanists.

Most of the healers I encountered could communicate in English. Of interest is that almost all, whatever their ethnic group (Tsonga, Sotho, Xhosa or Indian), were accustomed to selling their medicines using Zulu vernacular names. This convention assisted with the cross-checking and confirmation of plant identifications and uses. Where possible, identifications were confirmed by showing colour photographs or pictures of plants to the healers, using colloquial names and plant name lists (Williams *et al.* 2001; Williams 2007). I also studied and compared live specimens with other voucher specimens and identification information in the botanical literature. I deposited voucher specimens in the Moss Herbarium at the University of the Witwatersrand, Johannesburg.

My research yielded a list of 85 plants used for divinatory purposes, that is, during initiation, to enhance intuitive abilities, to promote dreaming and induce trance (Appendix 1). The plants are believed to be crucial to the development of special healing powers. The majority are administered internally. Of the 85 species, 39 (45 %) are known to have psychoactive properties (Sobiecki 2002). Appendix 2 lists plants used in non-divinatory healing, but which nevertheless have interesting psychoactive effects.

Indigenous terminology for psychoactive plants

Some interesting terms for psychoactive plants exist, including *bhayiskhobho* (bioscope (cinema) in Zulu), otherwise known as the ‘mirror’ or ‘TV’, which refers to the effects of hallucinogenic plants such as the toxic *Boophone disticha* (L.f.) Herb. (see Hall 1994: 54). Another Zulu term, *bonisele*, describes several plant species that are used by initiate diviners to elicit divinatory powers and induce dreams of the ancestral spirits. This derived verb stem means “to see on my behalf” (L.C. Posthumus pers. comm.) or “to show me the light” (L. Maponya pers. comm.). The descriptions of the effects of *bonisele* plants on the initiate diviners are analogous with metaphysical ‘seeing’, transcendental enlightenment and revelation. An example of one such plant is *Chamaecrista mimosoides* (L.) Greene. Descriptive phrases for such plants also include ‘magical plants’ and ‘plants that arouse the spirits’.

Literature and fieldwork notes

The ethno-botanical literature contains interesting examples of psychoactive plant use by diviners. These anecdotes were often tangential to the authors’ studies. From these data I distilled the beginnings of an account of psychoactive plant use by Southern African diviners.

In the classic article ‘Religious or sacred plants of Basutoland’, Laydevant (1932) explores the internal use of plants in the initiation of Sotho diviners. Many have

psychoactive effects. One of the plants, *Myosotis afropalustris* C.H. Wright, is used by the Sotho for treating hysteria and to develop the memory of trainee indigenous healers (Watt & Breyer-Brandwijk 1962). With ingestion, this plant has been reported as producing a mildly stimulating ASC that Sotho diviners use to divine (D. Millard pers. comm.). Laydevant also notes the use of the hallucinogen *B. disticha* in the initiation ritual of Basuto boys, which is closely connected with the ancestral spirits. Laydevant states that the drug is said to “imbue [the initiates] with the qualities of their ancestors and will tend to make men of them” (Laydevant 1932: 66).

Several other authors have commented on the use of psychoactive plants by southern African diviners. These authors describe the enhanced divining abilities that come from the medicines (Boshier 1973: 281; Broster 1981: 37; Hutchings 1989: 113; Katz 1976, 1982; Kohler 1941: 6; Krige 1940: 55; Lambrecht 1998), which are used when “the signs of the spirit slack off” (Boshier 1973: 281), or when dreams are desired for prophesy or divination.

DISCUSSION

The ancestors, dreams and plant use

Dreams are central to divination in southern Africa. Lamla (1975: 81) notes that “[d]reams and visions feature prominently in divination” in Transkei. In the Nguni worldview, dreams belong to the domain of the ancestors and serve as the medium through which the diviner establishes contact with the ancestors. These ancestors are heavily involved with the realm of the living and can send illness and misfortune to those who disrespect or ignore them. Southern African indigenous healing often runs in families, and ancestors who were healers often call their descendants to the profession through dreams. Given the importance of dreams in the diviners’ lives, they need to find ways to induce them and their methods include the use of certain psychoactive plants.

Plant preparations used in divination

Plants used to facilitate divination are prepared and administered in various ways in southern Africa. *Ubulawu* preparations are popular. The term *ubulawu* refers mostly to the roots of varieties of herbs and creepers, but sometimes to the stems or bark of certain plants, for example, the leaves and stems of *Helinus integrifolius* (Lam.) Kuntze. *Ubulawu* species are classified in Xhosa indigenous healing practice according to the locality in which they grow, that is, *ubulawu* of the river, *ubulawu* of the forest and so on (Hirst 1990). The Xhosa method of *ubulawu* preparation is as follows. “A compound of herbs is made, mixed with water in a vessel, and twirled with a stick until white foam froths up. The churning of the mixture to produce white foam is typical of *ubulawu* preparations. Every morning the initiate must drink this concoction until his or her stomach is full and he or she is ready to vomit. With the foam, the whole body is also washed, normally late in the evening” (Lamla 1975: 94). The vomiting of this compound is referred to as *ukugabha* (Lamla 1975: 94).

Another popular *ubulawu* ingredient is *Rhoicissus tridentata* (L.f.) Wild & R.B.Drumm. Watt (1967) reports its use by the Lobedu and the Masai for psychoactive purposes. A reportedly powerful mixture used by diviners in Johannesburg for facilitating communication with the ancestors includes *Hippobromus pauciflorus* (L.f.) Radlk., *Dianthus mooiensis* F.N. Williams. and *H. integrifolius*. Both *H. pauciflorus* and *H. integrifolius* have other psychoactive uses (Appendix 1).

Broster (1981) mentions an interesting combination of *Rubia petiolaris* DC.—a plant used by Xhosa initiate diviners to induce dreams of the ancestors (Broster 1981)—and *Silene*, *Hippobromus* and *Dianthus* species, all of which have oneirogenic and ‘visionary’ uses (pers. observation). It is possible that the combination of particular plants in *ubulawu* mixtures produces synergistic or complementary psychoactive effects. A Sotho diviner, Mrs Maponya (pers. comm.), explained that the use of different species in *ubulawu* mixtures results in “each species lending its power to the other”. Depending on the species used, *ubulawu* preparations have numerous uses. Some can be used therapeutically to heal the body (Hirst 1990: 176) by removing impurities, including “dirt from the chest and healing stomach disorders” (Lamla 1975: 145). Others are used as love charm emetics. However, the species used in *ubulawu* preparations for the initiation of southern African diviners reportedly have psychoactive effects. Some diviners state that these “varieties of *ubulawu* possess a spirit (*umoya*) which has the power (*amandla*) to reveal deep religious truths in the mind through dreams” (Hirst 1990: 176). “Prescribed at a low dosage, and taken on an empty stomach, certain varieties of *ubulawu* have the power to induce profound and lucid dream experiences connected with the spirits and sacred animals” (Hirst 1990: 177).

Ubulawu preparations have also been used to improve the memory and develop particular mental faculties, which is further indicative of their psychoactive qualities (Laydevant 1932). Laydevant (1932) describes how individuals exhibiting psychological disturbances similar to hysteria are treated with *ubulawu* preparations for one or two months, after which they are considered cured and able to resume their normal daily lives. The practice of inducing dreams through specific *ubulawu* preparations is often part of the treatment for the *intwaso* illness experienced by initiate diviners (Kohler 1941). The therapeutic mechanism by which this process operates is still unclear, but the use of *ubulawu* appears to encourage and modify the dreaming experienced by the initiates, to positive healing ends (Ashton 1943: 31; Broster 1981). Thus, there appears to be a close relationship between the use of particular plants in *ubulawu* preparations, ASC and physical, spiritual and psychological healing in southern African healing traditions.

Other literature refers to the magical and ‘visionary’ uses of special *ubulawu*. Hoernlé (1937: 21) describes how the process of churning up, eating, vomiting and washing with *ubulawu* is “concentrated upon clearing the inner vision, making the initiate ‘see’, so that he is intent upon listening to his inner voice and to the visions that arise before his mind’s eye”. Hulme (1954) states that *ubulawu* is considered to be one of the most powerful preparations used by Zulu diviners, while Schweitzer (1966: 54) notes that *ubulawu* is used to make contact between people and the ‘shades’ or spirits.

Other methods of administering psychoactive plants in spiritual healing rituals are known and practised in southern Africa. Some of these methods include licking powders off the palm, applying ointments into incisions made on the skin, using snuff, smoking dried leaves, and administering preparations to the eyes (as in the case of the Tsonga Gobo rite).

The effects of various categories of psychoactive plants

Some Sotho and Zulu diviners use plants with stimulant or empathogenic (producing elation and euphoria) effects to aid divination. Ingestion of a small amount of *ubulawu*

containing *Myosotis afropalustris* C.H. Wright as the primary ingredient produces elation and stimulation (D. Millard pers. comm.). Similarly, the fresh or dried flowers of *Nymphaea nouchali* Burm.f. have empathogenic effects.

Some South African diviners (Sotho, Tsonga and Zulu) make the distinction between plants that produce hallucinations and those that induce dreaming (oneirogenics). Hallucinogens, such as *B. disticha*, are perceived by some diviners as drugs that yield 'impure' and arbitrary visions. Dream-inducing plants, such as *Silene undulata* Aiton and *C. mimosoides*, are believed to produce 'true visions' that elicit intuitive powers that normally arise only while sleeping.

The number of established hallucinogens listed in this article is limited. Many more, not yet researched, have reportedly similar qualities and it is my belief that hallucinogenic plant-use in southern Africa has been underestimated.

Junod (1962: 489) mentions two interesting cases of hallucinogenic plant use amongst the Tsonga for the exorcism and treatment of possessed people. In the second stage of exorcism, the rite of the Gobo basin, the patient has his or her face submerged into a basin filled with water in which certain plants are mixed. The patient is made to open his eyes which causes burning and produces a red space with black dots in the field of vision. This is done for a long time, after which the patient is said to have "crossed the sea". "He has seen everything. It is the drug that makes one see (*muri wa ku bonisa*). Some are said to have learnt divination by this Gobo ablution" (Junod 1962: 489).

Junod (1962: 495) further suggests the visionary nature of the plants used in this rite when he says: "The baptism in the calabash has helped him to cross the sea and to reach the land beyond, the land of miracles and of magic powers!" This is a characteristic description of hallucinogenic experience. The psychoactive ingredient is possibly *Casearia gladiiformis* Mast. (Junod 1962: 501).

Junod's second example concerns apprentice diviners from central Tsonga. The apprentice first practices in foreign villages to earn an animal. This animal is brought back to the initiating diviner and parts are cooked with a root called *banga*. Once cooked, the master and apprentice suck the broth with their lips and eat the meat without touching it, "the same as vultures do, which scent meat from far away." The heart of one of these birds has been cooked with the other drugs 'so that the new diviner will be able to dream of things which are far away and go straight to them.' He will be able to go and guess anything at once without fear or hesitation" (Junod 1962: 566). I observed something similar in Johannesburg, where an initiate Tsonga diviner who was struggling to divine prepared and drank a decoction of boiled chicken and certain plants. He subsequently experienced lucid dreams that promoted his divinatory powers. The diviner described the plants as having actions on his mind.

Researchers have described their own experiences with southern African psychoactive and hallucinogenic plants. Edith Turner (1992) describes her experiences with what she considered psychoactive plants in the *ihamba* (spirit) exorcism rituals among the Ndembu of Zambia. In this ritual, several plants were taken orally in the form of a cold-water infusion (cf. Appendix 2). These had a "loosening effect" which facilitated the "disinhibition of the psyche" and "triggered and liberated a rarely-used faculty" (Turner 1992: 71, 140, 198). Apart from feeling as if her head was swimming immediately after drinking the leaf medicine, Turner noted other unusual perceptual effects. Ndembu claim that the plants are crucial in that they give the "ability to see spirits" (Turner

1992: 171), which Turner experienced (Turner 1992: 131, 132, 149). *Vangueriopsis lanciflora* (Hiern) Robyns and a *Canthium* species were both ingredients in the leaf medicines. Both are reported to have psychoactive uses elsewhere in southern Africa (Gelfand *et al.* 1985).

James Hall (1994: 53) described his experience with a vision-facilitating medicine called *likhambi*, which is administered nasally. The visions elicited were likened to the *bhayiskhobho*. Hall also mentions an emetic made from a plant resembling a vine (possibly *Galium capense* Thunb.) with a red root bark that appears to have important 'visionary' uses in the Zulu rituals. These medicines were used specifically for eliciting divinatory powers as part of his initiation into divining.

Like some other researchers, I have experienced the psychoactive effects of traditional southern African preparations. While doing fieldwork in the Limpopo Province, I ingested a powder made from unidentified plants. My sleeping pattern was disturbed for two subsequent nights and I experienced a lucid dream containing profound personal symbolism. I believe that the chemicals in the plants interrupted my normal cyclical neurotransmitter activity during sleep, which resulted in enhanced dreaming.

Botany and chemistry of psychoactive plants

Investigation of the chemistry of plants used in divination is well worth while. The psychoactive status of many plants remains unknown and much research is required to understand the effects these plants have on consciousness. *Silene undulata* Aiton., for instance, is an *ubulawu* species used in the initiation and practice of Xhosa diviners (Hirst 1997). It is called *undlela zimhlophe*, "which literally refers to the way or path of white things or symbols" (Hirst 1997: 236). "The root contains toxic saponins which, when ingested at low dosage, only induce dream experience in highly sensitive subjects" (Hirst 1997: 236). Saponins are said to be responsible for the production of froth in *ubulawu* preparations. These saponins probably account for the reported psychoactive (oneirogenic) effects of *ubulawu*. If this is the case, it is fascinating that the indigenous healers of southern Africa have found ways of preparing plant medicines that concentrate in the froth the chemicals that elicit dreams. Saponins also irritate the mucosa and are therefore effective emetics. Emetics are used to induce trances needed for divining (Hutchings 1989). Other chemical groups of psychoactive interest include the alkaloids and diterpenoids (Sobiecki 2002).

Multifunctional uses

Many psychoactive plants used in divination have other medicinal uses. Factors influencing the psychoactive effect of a plant include its dosage, and its combination with other plants in a mixture. A psychoactive plant may not always produce a distinct psychoactive experience, unlike most hallucinogenic plants. For example, *Catha edulis* (Vahl) Forssk. ex Endl. is used in medicines in small doses with no perceptible psychoactive effects, but higher dosages can produce strong sensory alterations, including entoptic phenomena (M. Hirst pers. comm.).

Cross-cultural use

Some species are used in similar ways by southern Africans of different language groups. *H. integrifolius*, for instance, is used in similar ways by Sotho and Nguni speakers—for

eliciting divinatory powers. It is not yet possible to make generalisations on patterns of plant-use.

CONCLUSION

My intention with this article was to demonstrate that the use of psychoactive plants is indispensable to southern African indigenous healing. The diviners' plant knowledge and expertise should be part of the greater body of indigenous knowledge systems (IKS), to be preserved, studied and utilised. It is also hoped that these findings will serve to galvanise research into how psychoactive plants influence human consciousness and the potential applications thereof in medicine. Furthermore, I hope that southern African psychoactive plant-use can be placed within the global shamanic plant-use context, which is fast becoming an impetus for plant-based spirituality.

ACKNOWLEDGEMENTS

Helena Saayman for her passionate support and patient edit of this paper, Andre Croucamp for his invaluable advice, and continual support; Mama Maponya, a valuable healer and friend, for her insights; Professor Thea de Wet, Department of Anthropology and Development Studies, University of Johannesburg, for her assistance and encouragement; Professor David Lewis-Williams for his help and encouragement; Dr Vivienne Williams for her advice and support and for kindly providing me with her lexicon of plant names; Anne Hutchings for all her support. Many thanks to the indigenous healers who made this research possible: Mr Mgomazulu from Sodwana; Mhlongo and Clifford Mudumo from Mai Mai market, Johannesburg; Anne Naidoo; Monica from Mautse valley, Free State; Gladise Tau and her daughter, Mpai, for their patience and willingness in allowing me to survey their muti shop in Johannesburg; Joseph from Germiston; Ms Nhlengethwa from Natalspruit, Johannesburg; Mrs Madisebo from Kathlehong district; Lulama Masinga, Joyce Khwela, Mr Solomon Mahlaba, Benedict Sebushi, and Ms Nonkazimlo Podile. Other thanks go to Dale Millard; Mrs M. Sobiecki, for her translations of Laydevant's article, Graeme Cumming for his assistance and support; Farida Dollie; Professor L.C. Posthumus for his linguistic assistance; Dr Manton Hirst; Dr Nigel Gericke; Ms Penny Bernard; Ms Noluthando Netnou for her translation of *Umongo Wolwazi* by C.J. Manana; Professor Tony Trail; and to any other healers I may unintentionally left out of this list.

APPENDIX 1

Plants used in divination in southern Africa

Information is arranged as follows:

Botanical name, exotics*

Specimen voucher

Plant family

Vernacular name/s of ethnic group/s using plant^b

Part used

Preparation/route of administration/related usage/informant/reference^d

Voucher specimens were identified by staff at the Charles E. Moss Herbarium, Johannesburg.

^bGroups using the plant: (Af)=Afrikaans: SA; (B)=Tswana: SA; (Cho)=Chopi: Mozambique/Capriivi; (E)=Europeans: SA; (G)=Griqua: SA; (Ka)=Kuanyama Ambo: Namibia; (Kg)=Kgatla (a Tswana dialect): Botswana; (K)=Khoi: SA; (Lob)=Lobedu (a dialect of Northern Sotho): SA; (Nd)=Ndembu: Zambia/Angola/Zaire; (P)=Pedi: SA; (S)=Sotho (This language group includes Northern Sotho, South Sotho and Tswana): SA; (San)=San: SA/Namibia/Angola; (Sh)=Shona: Zimbabwe; (Ts)=Tsonga: SA; (V)=Venda: SA; (X)=Xhosa: SA; (Z)=Zulu: SA.

^dReferences: 1: Boulos 1983; 2: Broster 1981; 3: Bryant 1966; 4: Callaway 1991; 5: Chaumeil & Chaumeil 1979; 6: Cunningham 1988; 7: Dobkin de Rios 1986; 8: Dornan 1929; 9: Duke 1985; 10: Eiselen 1932; 11: Emboden 1989; 12: Gelfand *et al.* 1985; 13: Gerstner 1938; 14: Gerstner 1941; 15: Harner 1973a; 16: Harner 1973b; 17: Hirst 1990; 18: Hirst 2000; 19: Hulme 1954; 20: Hutchings *et al.* 1996; 21: Iwu 1993; 22: Jacot Guillarmod 1971; 23: Jacot Guillarmod 1982; 24: Johnston 1972; 25: Junod 1962; 26: Katz 1982; 27: Krige 1940; 28: Laydevant 1932; 29: Laydevant 1933; 30: Laydevant 1939; 31: Lee 1979; 32: Loeb *et al.* 1956; 33: Mabogo 1990; 34: Manana 1968; 35: Mönning 1967; 36: Neuwinger 1996; 37: Oliver-Bever 1986; 38: Palmer & Pitman 1972; 39: Phillips 1917; 40: Pooley 1993; 41: Pujol 1990; 42: Schultes & Hofmann 1992; 43: Simon & Lamla 1991; 44: Sobiecki 2002; 45: Turner 1992; 46: Van Wyk *et al.* 1997; 47: Van Wyk & Gericke 2000; 48: Watt 1967; 49: Watt & Breyer-Brandwijk 1962; 50: Winkelman & Dobkin de Rios 1989.

Adenopodia spicata (E.Mey.) C.Presl

Fabaceae

ibobalubobo (Z)

Root

Infusions are taken orally by diviners as emetics to increase divining powers (Z) [20].

Agapanthus campanulatus F.M. Leight.

Alliaceae

leta-la-phofu (S), *ubani* (Z)

Root

Ubulawu preparations are used in the initiation of indigenous healers in South Africa (Z) [20], (S) [22]. Also used to treat people “who have the spirit”, a type of psycho-spiritual illness (S) [28]. Used by diviners in South Africa to induce dreams of the ancestors (N. Podile pers. comm.).

Agrostis bergiana Trin.

Poaceae

yoang ba phorora (S)

Parts used unknown

Used when working the divining bones (S) [39].

Albizia suluensis Gerstner

Fabaceae

Common name unknown (X), *ingweb'enkulul unyazangoma* (Z)

Parts used unknown

A stirred macerate is taken orally by healers to induce trances (Z) [20]. Used for nervous complaint (Z) [40]. An unidentified species called *uyazangoma* is used to treat fits (X) [43].

Alepidea amatymbica Eckl. & Zeyh. Var. *amatymbica*

Apiaceae

lesoko (S), *ikhathazo* (Z)

Aerial parts, root

The dry rhizome and roots are smoked, or powdered and taken as a snuff by South African diviners to assist divination and communication with the ancestors [47]. It is used to help prevent nervousness (Z) [41]. It is used as a lotion to wash the divining bones (S) [22].

Argyrolobium tomentosum (Andrews) Druce

Fabaceae

umadlozana ompofu (Z)

Root

Root infusions are taken by diviners as emetics to sharpen their vision (Z) [19].

Bauhinia bowkeri Harv.

Fabaceae

Voucher specimen: *Sobiecki 5*

umdlanlovu (Z)

Bark

An emetic by unspecified groups in South Africa, and can produce weak hallucinations (L. Mponya pers. comm.). It is used to assist divination (L. Masinga pers. comm.). A powerful muti used by healers in South Africa as a snuff before sleeping to “open the mind” (Z) (C. Mdumo pers. comm.).

Boophone disticha (L.f.) Herb.

Amaryllidaceae

leshoma (S), *incwadi* (X), *incotho* (Z)

Bulb

Bulb decoctions, which are toxic, are used in small amounts as a hallucinogen to aid divination in South Africa (Z) [44]. Bulbs are also used as narcotics (S), (X) [49]. Unspecified groups use a weak decoction of the bulb scales as a sedative for violent, psychotic patients [47]. Described as “arousing the spirits” in Zimbabwe [12].

Boscia albitrunca (Burch.) Gilg & Gilg-Ben.

Capparaceae

umvithi (Z)

Bark, root

Roots are used for medical and magical purposes (Z) [40]. Uses for epilepsy in South Africa have been recorded [48]. The bark is used in the initiation of diviners in South Africa as an *ubulawu* preparation, the froth of which is eaten, to “see things”, indicating possible psychoactive effects (hallucinogenic activity) and enables “the ancestors to speak through you” (M. Tau pers. comm.).

Brachylaena discolor DC.

Asteraceae

ipahlalisdulilumphaphla (Z)

Root

Used by diviners to communicate with the ancestral spirits (Z) [20]. Indigenous healers in South Africa ingest root infusions for divinatory purposes (D. Millard pers. comm.). *Brachylaena elliptica* (Thunb.) DC has uses in treating hysteria in South Africa [44].

Brunsvigia radulosa Herb.

Amaryllidaceae

lematla (S)

Parts used unknown

The plant is used to wash the divining bones to “give greater accuracy”. (S) [22].

Cannabis sativa L.*

Cannabaceae

dagga (Afr), marijuana (E), *matokwane* (S), *umya* (X) *insangu* (Z)

Leaf

In South Africa its use for medicinal, recreational and spiritual purposes is widespread among healers and non-healers from various ethnic groups. South African diviners sometimes smoke the leaf with other plants to aid divination (L. Masinga pers. comm.).

Canthium ciliatum (Klotzsch) Kuntze

Rubiaceae

umevana (Z)

Root

Roots are used as a substitute for *Turraea floribunda* Hocsht. in emetics to induce trances before divining dances (Z) [14]. Other *Canthium* species have psychoactive uses in Zimbabwe [12].

Casearia gladiiformis Mast.

Samydaceae

pskamafura (Ts), *umjuluka* (Z)

Parts used unknown

The initiate diviner is administered a decoction

containing this plant, through the eyes, in the Tsonga Gobo basin ritual. Divining powers are learnt through this ritual, with psychoactive effects being reported (Ts) [25]. A plant called *umjuluka* is said to be used for mental disorders (Z) [34].

Chamaecrista mimosoides (L.) Greene

Fabaceae

Common name unknown (X),

umboniselalimbubu yotaboni (Z)

Root

Powdered root infusions are taken orally to remember dreams (Z) [19], and the plant is also used to induce sleep (X) [43]. South African diviners use an emetic made from the roots to induce dreams of the ancestors (L. Maponya pers. comm.). “The *Cassia* genus contains a number of substances that have sedative, depressant, and toxic effects” [9]. !Kung Bushmen may use *Cassia* species to facilitate the induction of trance states (that are used for divining) (San) [50].

Chenopodium ambrosioides L.*

Chenopodiaceae

tlhatlhabadimo (Ts)

Leaf

Used by South African diviners in a mixture that is burnt to invoke the ancestors (*ebaso la madloze*) and can be used as a snuff that has an intoxicating action (Ts) (M. Tau pers. comm.). *Tlhatlhabadimo* means ‘to call the ancestors’. Leaves are used as medicines in Zimbabwe for madness and convulsions [12]. Used in rainmaking rituals together with other psychoactive plants such as *Datura stramonium* L.* and *Avonia rhodesica* (N.E.Br.) G.D.Rowley (B) [8].

Crabbea acaulis N.E.Br

Acanthaceae

letsoejane (S)

Parts used unknown

Used by diviners when working the divining bones (S) [22].

Crabbea hirsuta Harv.

Acanthaceae

letsoejanelmereko (S)

Root

This plant is commonly used in conjunction with the divining bones (S) [49]. Unspecified groups in Zimbabwe use the roots administered in porridge for madness [12].

Cynodon dactylon (L.) Pers.

Poaceae

tsangadzi (Sh)

Root

The root is infused with the whole plant of *Diplolophium zambesianum* Hiern and other ingredients and taken orally by diviners in Zimbabwe to “arouse the spirits” [12].

Cyperus fastigiatus Rottb.

Cyperaceae

mothoto (S)

Whole plant

An ingredient of a special horn-medicine used in the diviners initiation ceremonies (S), [28]. *Cyperus* species are known to contain simple indoles and the species *Cyperus esculentus* L. is used for its psychoactive properties by the Chinese [20]. A *Cyperus* species is used in North Africa for nervous troubles and as a sedative [1]. *Cyperus* species are used in South America as hallucinogens by the Jivaro Indians, and as admixtures in other hallucinogenic brews, by the Yagua Indians of the Peruvian Amazon [5]; [15].

Datura stramonium L.*

Solanaceae

iloyiliyolilyoye (Z)

Leaf, root

The powdered roots and leaves are inhaled as snuff to aid divining in South Africa (Z) [20]. Other psychoactive uses are on record [44].

Dianthus albens Aiton

Caryophyllaceae

Common names unknown

Root

An infusion of the crushed root is taken orally during the initiation of diviners to induce vivid dreams related to the ancestral spirits or spirit animals (*isilo*) (X) [2].

Dianthus crenatus Thunb.

Caryophyllaceae

umzimalisidala (Z)

Root

Cold water root infusions are taken as emetics by diviners to clear their vision and sharpen their divining faculties (Z) [19]. Used by indigenous healers in South Africa as an *ubulawu* preparation that is taken orally to induce dreams (M. Hirst pers. comm.).

Dianthus mooiensis F.N. Williams

Caryophyllaceae

Voucher specimen: *Sobiecki* 11

Common name unknown (S), (X), *tjanibeswe* (Z)

Root

Sold in the Johannesburg muti markets as a lucky charm potion (pers. observ.). Used by healers in South Africa as an emetic to allow for communication with the ancestors in dreams (Nonkazimlo pers. comm.; Mhlongo pers. comm.). It is used in South Africa as a snuff that opens ones mind to ideas (G. Tau pers. comm.).

Dioscorea dregeana (Kunth) T. Durand & Schinz

Dioscoreaceae

isidakwalingcololilabatheka (Z)

Bulb

A bulb decoction is combined with the hallucinogen *Boophone disticha* in a mixture that is used to aid divination in South Africa. Decoctions of the tuber have numerous other psychoactive uses, for example, in treating hysteria and insanity (Z) [49] [3].

Diplolophium zambesianum Hiern

Apiaceae

Common names unknown

Whole plant

The whole plant of *D. zambesianum* is infused with the root of *Cynodon dactylon* and other ingredients and taken orally by diviners in Zimbabwe to “arouse the spirits” [12].

Dolichos pratensis (E. Meyer) Taubert

Fabaceae

letomoko (S)

Parts used unknown

Used by diviners in ‘working’ the divining bones (S) [22].

Entada rheedii Spreng.

Fabaceae

umbhone (Z)

Seed

Tobacco smoked in a pipe made from the seed has been reported to cause vivid dreaming [47]. Traditionally used by diviners in South Africa to remember dreams (Z) (C. Mudumo pers. comm.).

Erythrophleum lasianthum Corbishley

Fabaceae

umkhwangulumbhemise (Z)

Bark

A snuff made from the bark has a mild drugging action on a person (Z) (M. Tau pers. comm.) and is also used for treating hysteria (Z) [41]. It is used to aid divination (L. Masinga pers. comm.), and in spiritual rituals, including poison ordeals, in Africa. It is used to increase the potency of palm wine in unspecified parts of Africa [38]. Seeds and bark contain erythrophleine that has analgesic and powerful vasoconstriction properties [20].

Euclea coriacea A. DC.

Ebenaceae

balikokotana (S)

Parts used unknown

Used by diviners to wash the divining bones to give them accuracy (S) [22]; [39].

Euclea divinorum Hiern

Ebenaceae

Common names unknown

Parts used unknown

Reported to have uses in African divination practices, hence the species name *divinorum*. Its psychoactive properties are used by unspecified groups in South African indigenous medicine [47], and it is used for psychiatric purposes elsewhere in Africa [21].

Ferraria glutinosa (Baker) Rendle

Iridaceae

gaise noru noru (San)

Parts used unknown

This plant was reported by Lee [31], and Katz [26] as having psychoactive properties to aid the novice to enter *kia* or the trance state that was used for divining (San) [50]. At present, no psychoactive uses are said to occur by the San groups in the Ghanzi district of Botswana (A. Trail pers. comm.).

Galium capense Thunb. subsp. *garipense* (Sond.)
Puff

Rubiaceae

seharanelmabone (S)

Parts used unknown

Used in an *ubulawu* preparation, that is taken orally, for those “with the spirit” making the patient dream and curing them of their psychological or spiritual illness (S) [28]. Mabone connotes “to see”, and the plant is said to be used in divination in South Africa (L. Maponya pers. comm.).

Galium mucroniferum Sond. var. *dregeanum* (Sond.)

Puff

Rubiaceae

seharanelmali-a-phalla (S)

Parts used unknown

Unspecified parts are made into a decoction that is drunk by diviners, enabling them to see the meaning of the divining bones clearly (S) [22]. One of the four vines used in the initiation of diviners (S) [22].

Geranium incanum Burm.f

Geraniaceae

hlapi-e-kholotlako (S)

Parts used unknown

Used by diviners when the divining bones are being worked (S) [22].

Gnidia capitata L.f.

Thymelaeaceae

setelethopa (S)

Parts used unknown

Provides a divinatory torch to discover thieves or other ‘malefactors’ (S) [22].

Haplocarpha scaposa Harv.

Asteraceae

papetloane (S)

Parts used unknown

Used by diviners when consulting the divining bones (S) [22].

Helichrysum decorum DC. and *Helichrysum aureonitens* Sch.Bip.

Asteraceae

imphepholimpepo (Z)

Aerial parts

H. aureonitens is thought to be used by *izangoma* to induce trance (Z) [20], while *H. decorum* is used to induce trance by inhaling smoke from burning plants (Z) [20]. Callaway [4] describes how eating *imphepho* is considered vital to the proper initiation of a Zulu diviner.

Helinus integrifolius (Lam.) Kuntze

Rhamnaceae

Common name unknown (P), *phelotheri* (S), *ubhubhubhu* (Z)

Leaf, stem, root

An infusion is taken orally in the initiation of diviners to “strengthen his memory and give the initiate keen powers of observation” (P) [35] (Z) [3]. Similar uses of an unidentified plant called *phelotheri* are reported among the Bamasemola (S) [10]. It is taken orally

in *ubulawu* mixtures, together with *Dianthus* species, for communicating with the ancestral spirits (Z) (pers. observ.; N. Podile pers. comm.). It has it used for treating hysteria in Zulu medicine [3].

Hermannia depressa N.E.Br.

Sterculiaceae

molekolsetljane (S)

Parts used unknown

Used in divination to indicate the illness and treatment required (S) [22].

Heteropyxis dehniae Suess.

Heteropyxidaceae

inkiza wyntaba (Nd), *mubanda* (Sh)

Leaf

Leaves are chewed and the smoke inhaled by diviners in Zimbabwe to “arouse the spirits” (Nd), (Sh) [12].

Hibiscus pusillus Thunb.

Malvaceae

semameloana se seholo (S)

Parts used unknown

A favourite plant used by diviners (S) [39].

Hippobromus pauciflorus (L.f.) Radlk.

Sapindaceae

Common name unknown (X), *uqhume* (Z)

Bark, root

Roots are used as love charms, for headaches, hysterical fits and by diviners to induce trances (Z) [20]. The diviner rinses his nose with the froth prior to falling into a trance (Z) [49]. Used in South Africa to *phalaza* (vomit) and to induce dreams of the ancestors (N. Podile, pers. comm.). Bark powder is used in *ubulawu* preparations together with roots of *Rubia petiolaris* DC. and *Silene undulata* Aiton in the initiation of diviners (X) [2]. This *ubulawu* is used to induce dreams and communications with the ancestors (X) [2].

Hyparrhenia filipendula (Hochst.) Stapf

Poaceae

zhengezhu (Sh)

Root

Root infusions are taken orally by diviners in Zimbabwe to “arouse the spirits” [12].

Indigofera flavicans Baker

Fabaceae

naiego (San)

Parts used unknown

Thought to have been used by the !Kung Bushmen to facilitate the induction of trance states [50]. Psychoactive uses are reported for other *Indigofera* species in southern Africa [44].

Ipomoea alba L.*

Convolvulaceae

Common names unknown

Seed

Unspecified groups in South Africa crush two to four seeds in water and the resulting liquid is taken orally at night to induce vivid dreams, while the seeds of an unknown Convolvulaceae are used to induce dreams and communication with the ancestors [47].

Ipomoea oblongata E.Mey. ex Choisy
Convolvulaceae

mothokho (S),
Parts used unknown

An ingredient of a special horn-medicine used in the diviners initiation ceremonies (S) [28]. The Sotho use the leaves as a snuff mixed with tobacco in Lesotho [22]. *Turbina* species are culturally important New World hallucinogens [42].

Limosella africana Glück
Scrophulariaceae

pua metsi (S)
Parts used unknown

Used by diviners when working with the divining bones (S) [22], [39].

Lobelia dregeana (C.Presl) A.DC.
Lobeliaceae

napshane ea phiri (S)
Parts used unknown

Popular with diviners who wash their divining bones in a preparation from the plant to make them more accurate (S) [39].

Lobellia erinus L.
Lobeliaceae

ma-lan'a konyanaltsoinyane (S)
Whole plant

Diviners wash the bones with a lotion prepared from the plant to make them more accurate (S) [22].

Maesa lanceolata Forssk.
Maesaceae

Voucher specimen: *Sobiecki 6*
umaguqulishithendeluphopho (Z)

Bark

Used together with other plants in a special *ubulawu* mixture that is taken orally for communicating with the ancestral spirits (Z) (Mhlongo pers. comm.). The bark is used as a stimulating beverage by the Masai [20] and it is used in *ubulawu* preparations in KwaZulu-Natal [6].

Massonia jasminiflora Burch. ex Baker
Hyacinthaceae

lematlana (S)
Parts used unknown

Used in divination to find lost objects (S) [22], [23].

Monadenium lugardiae N.E.Br.
Euphorbiaceae

mhlebe (Z)
Root

Roots are swallowed by diviners in the Piet Retief area in South Africa to enable them to “see visions and to prophesy under its influence”, before important meetings, thus producing hallucinations (Z) [49].

Mundulea sericea (Willd.) A.Chev.
Fabaceae

mosilathlou (Kg), *mukundandou* (V)
Parts used unknown

Unspecified parts of this toxic plant are used as a

divining medicine (Kg) [49]. Considered to be a very powerful magical plant by the Venda [33].

Myosotis afropalustris C.H.Wright
Boraginaceae

lephukhuphukhu (Z), *sethuthu* (S)
Whole plant

Preparations are taken orally in the initiation and training of diviners to develop their memory and make initiates mentally fit for their work, as well as to treat “people with the spirit”, a type of psycho-spiritual illness (S) [28]. Decoctions made from the plant are used to treat hysteria in South Africa [49].

Nemesia pubescens Benth.
Scrophulariaceae

bohomo-ba-litaola (S)
Parts used unknown

Used to wash the divining bones to make them more accurate (S) [22].

Nicotiana tabacum L.*
Solanaceae

fodyayechikwarimba (Sh)
Leaf

The leaf is made into a snuff by southern African diviners at the start of divination, and is also made as a traditional offering to the ancestors [47]; (Sh) [12].

Nymphaea nouchali Burm.f.
Nymphaeaceae

izibu (Z)
Flower

Dried flowers or tinctures are used by South African diviners, producing stimulant, aphrodisiac and euphoriant effects in low doses [47]. Sold on the Johannesburg muti markets for inducing visions related to the ancestors (Z) (pers. observ.). Flowers were believed to have been used in ancient Egypt as a narcotic to induce shamanistic trances [11].

Ocimum americanum L. var. *americanum*
Lamiaceae

amakha (Nd)
Leaf

Leaves are rubbed on the face in Zimbabwe to “arouse the spirits” and are also used with other plants to treat madness and convulsions in Zimbabwe [12].

Pentanisia prunelloides (Klotzsch ex Eckl. & Zeyh.)
Walp subsp. *latifolia* (Hochst.) Verdc.

Rubiaceae
setima mollo (S)

Parts used unknown

An ingredient of a special horn-medicine used in the diviner’s initiation ceremonies (S) [28].

Philenoptera violaceae (Klotzsch) Schrire
Fabaceae

mbhandu (Lob), Common name unknown (Ts)
Parts used unknown

Tsonga diviners make a drink for “trial by ordeal” from the pounded root or leaves of this tree together with the leaf of *Datura stramonium**. This plant may

have psychoactive properties, as do the other “trial by ordeal” plants such as *Erythrophleum lasianthum* and *Securidaca longipedunculata* Fresen. that are used in southern Africa. The divining dice of the Lobedu, a Northern Sotho group, were reportedly left overnight in an infusion made from this plant so that divination could occur [27].

Phragmites australis (Cav.) Steud.

Poaceae

qoboi (S)

Root

An ingredient of a special horn-medicine used in the diviners initiation ceremonies (S) [28].

Phygelius capensis E.-Mey. ex Benth.

Scrophulariaceae

mafifi matso (S)

Parts used unknown

It is used as an ingredient of a special horn-medicine used in the diviner’s initiation ceremonies (S) [28]. Medicines made from the plant together with *Ledebouria cooperi* (Hook.-f.) Jessop are used in initiation ceremonies to inebriate Sotho boys usually causing them to appear stunned and stupefied and to go to sleep (S) [20].

Phyllanthus reticulatus Poir.

Euphorbiaceae

intaba yengwelmunyuswane (Z)

Rootbark

An emetic is used to conceal secrets from southern African diviners [38]. The root bark together with other ingredients is prepared as an *ubulawu* to give clear and penetrating vision (Z) [20].

Pittosporum viridiflorum Sims

Pittosporaceae

kgalagangwemosetlela (S)

Root

Root infusions are taken orally for accuracy in divining (S) [20], [39]. Unspecified groups use root decoctions that are reported to ease pain and produce restfulness, while the bark is reported to produce a powerful action if taken in excess [49].

Polygala gymnoclada MacOwan

Polygalaceae

lehlokoana la balimo/mohlabeho o moholo (S)

Parts used unknown

Used when working the divining bones. Most *Polygala* species are said to be used in this way (S) [39]. The vernacular names mean “the piece of grass of the ancestors” and “the strong stimulant” (S) [39].

Psoralea pinnata L.

Fabaceae

unhlongani (Z)

Root

Cold water infusions from roots, mixed with roots of *Helinus integrifolius*, are made into *ubulawu* preparations, and taken as emetics by diviners as part of their initiation [3].

Rhoicissus tridentata (L.f.) Wild & R.B.Drumm. subsp. *cuneifolia* (Eckl. & Zeyh.) Urton.*

Vitaceae

Voucher specimen: *Sobiecki- 2*

morara o moholo (S)

Parts used unknown

Used by diviners with *Myosotis afropalustris* C.H.Wright in *ubulawu* preparations that are taken orally to treat a psycho-spiritual illness termed “having the spirit” (S) [28], [29]. It is one of the four vines used in the initiation of diviners (S) [22], [23], [30]. Unspecified parts are used by the Lobedu, a Northern Sotho group, for epilepsy and by the Masai as a nerve stimulant [48].

Rubia cordifolia L. subsp. *conotricha* (Gand.) Verdc.

Rubiaceae

seharane (S)

Parts used unknown

Decoctions of unspecified parts are traditionally taken by diviners to facilitate divining by giving them insight into the messages of the divining bones (S) [22], while the plant is reputed to have analgesic effects [49].

Rubia petiolaris DC.

Rubiaceae

Ubulawu ububomvulimpendulo (X)

Root

Ubulawu preparations using the roots are taken orally by initiate diviners to induce dreams of the ancestors (X) [2]. Other admixtures used include; *Silene*, *Hippobromus* and *Dianthus* species all having literature indicating similar oneirogenic (dream inducing) uses.

Sclerocarya birrea (A.Rich.) Hochst. subsp. *caffra* (Sond.) Kokwaro

Anacardiaceae

umganu (Nd), *mupfura* (Sh)

Root

An infusion made with the root, mixed with twigs of *Loranthus* species, is taken orally by diviners to “arouse the spirits” in Zimbabwe [12].

Securidaca longepedunculata Fresen.

Polygalaceae

mudla-ndlopfu (Cho), Common name unknown (Sh)

Voucher specimen: *Sobiecki 3*

Root

Used with *Sphedammocarpus pruriens* (A.Juss.) Szyszyl. subsp. *pruriens* for treating people believed to be possessed by evil spirits (Cho) [49]. The tree was used in southern Africa as an ordeal poison in the same manner as *Datura* species [25]. The powdered root is mixed in porridge that is eaten for epilepsy and convulsions, and is washed with to “arouse the spirits” in Zimbabwe [12]. The roots are used for mental disorders by the Venda [33]. Sedative, tranquillising and anti-convulsant properties have been described [37]. Thought to have been used by the !Kung for trance induction (that was used for divining) [50].

Silene bellidiodes Sond.

Caryophyllaceae

Voucher specimen: *Sobiecki* 10
gwayana (Z)

Root

Root infusions are taken as an emetic or taken orally in small quantities in South Africa to induce “true” dreams related to the ancestors (Z) (C. Mudumo pers. comm.). Used as love charm emetics (Z) [20].

Silene pilosellifolia Cham. & Schltld.

Caryophyllaceae

popoma (Z)

Root

Roots are used as an *ubulawu* preparation, taken orally to produce dreams relating to the ancestral spirits in South Africa (Z) (G. Tau pers. comm.).

Silene undulata Aiton

Caryophyllaceae

undlela zimhlophe (X), (S)

Root

Roots are used in *ubulawu* preparations, taken orally, in the initiation of diviners, producing lucid dreams related to the ancestral spirits (X) [17], [18]. The plant is used as a medicine in treating many diseases particularly fevers and delirium (S) [49].

Siphonochilus aethiopicus (Schweinf.) B.L. Burtt. (Schweinf.)

Zingiberaceae

khirugulu (Lob), *isiphephetho* (Z)

Rhizome

A *Siphonochilus* species is chewed by diviners before divining and is said to impart insight and power to the novice diviner (Lob) [27]. A number of psychoactive uses have been reported for this plant including treating hysteria (Z), [13], epilepsy and insomnia [47]. South African diviners use a powder of the rhizome, which is sprinkled onto the divining bones to increase the accuracy of divination (B. Sebushi pers. comm.). There are reports that *Kaempferia galanga* L. (Zingiberaceae) is used as a hallucinogen and medicine in New Guinea [42].

Sisyranthus huttoniae (S.Moore) S.Moore.

Apocynaceae

umfanozacile omhlophe (Z)

Parts used unknown

Uses related to the ancestral spirits are recorded (Z) [20].

Stachys aethiopica L.

Lamiaceae

bolao ba litaolla/bokhatha (S)

Aerial parts

It is burnt in the hut of a person suffering with feverish delirium and is soothing (S) [39]. Used in divination rituals.

Stephania abyssinica (Quart. Dill. & A.Rich.) Walp. var. *tomentella* (Oliv.) Diels

Menispermaceae

lesibo (S)

Parts used unknown

Used in divination to discover lost things or secret matters (S) [39]. *S. abyssinica* is known to have

psychoactive properties and tranquillising effects, but its psychoactive use in southern Africa is unknown [20]. Other species are used in East Africa as sedatives, and isoquinoline and aporphine alkaloids have been shown to have narcotic properties [37].

Strychnos henningsii Gilg

Strychanaceae

manono (Z)

Bark

Small pieces of bark are chewed by initiate healers to produce dreams related to the ancestral spirits in South Africa (L. Maponya pers. comm.). This plant is used together with *Turraea floribunda* Hochst. for various pains (Z) [20].

Synaptolepis kirkii Oliv.

Thymelaeaceae

uvuma-omhlophe (Z)

Root

Root infusions are used for epilepsy by the Karanga in east Africa [49] and as ritual emetics and body washes to assist diviners in South Africa to ‘see’ in a metaphysical sense (Z) [47].

Tulbaghia capensis L.

Alliaceae

Voucher specimen: *Sobiecki* 1

umwelela (X)

Clove

Reportedly used as an admixture with the hallucinogen *Boophone disticha* for divination in South Africa (G. Tau pers. comm.). Other *Tulbaghia* species are used for fits and restlessness in Transkei in South Africa (X) [20], as well as reported uses for madness [12]. *T. capensis* may have similar sedative properties or uses that may mitigate unpleasant side-effects such as anxiety or panic experienced with *Boophone disticha* hallucinations.

Turraea floribunda Hochst.

Meliaceae

umadlozana (Z)

Root

Root preparations are taken orally by diviners to enter the ‘neurotic’ state needed for divining dances (Z) [20].

Typha capensis (Rohrb.) N.E.Br.

Typhaceae

mositla (S)

Parts used unknown

An ingredient of a special horn-medicine used in the diviners initiation ceremonies (S) [28].

Xysmalobium undulatum (L.) Aiton f.

Apocynaceae

leshokhoa (S)

Parts used unknown

An ingredient of a special horn-medicine used in the diviner’s initiation ceremonies (S) [28]. Used to treat hysteria in South Africa [44].

APPENDIX 2

Plants used in indigenous healing rituals in southern Africa
and their psychoactive effects

Information is arranged as follows:

Botanical name, exotics *

Specimen voucher

Plant family

Vernacular name/s of ethnic group/s using plant^b

Part used

Preparation/route of administration/related usage/informant/reference^d

Voucher specimens were identified by staff at the Charles E. Moss Herbarium, Johannesburg.

^bEthnic groups using the plant: (Af)=Afrikaans: SA; (B)=Tswana: SA; (Cho)=Chopi: Mozambique/Capriivi; (E)=Europeans: SA; (G)=Griqua: SA; (Ka)=Kuanyama Ambo: SW Africa; (Kg)=Kgatla (a Tswana dialect): Botswana; (K)=Khoi: SA; (Lob)=Lobedu (a dialect of Northern Sotho): SA; (Nd)=Ndembur: Zambia/Angola/Zaire; (P)=Pedi: SA; (S)=Sotho (This language group includes Northern Sotho, South Sotho and Tswana); (San)=San: SA/Namibia/Angola; (Sh)=Shona: Zimbabwe; (Ts)=Tsonga: SA; (V)=Venda: SA; (X)=Xhosa: SA; (Z)=Zulu: SA. SA=South Africa.

^dReferences: 1: Boulos 1983; 2: Broster 1981; 3: Bryant 1966; 4: Callaway 1991; 5: Chaumeil & Chaumeil 1979; 6: Cunningham 1988; 7: Dobkin de Rios 1986; 8: Dornan 1929; 9: Duke 1985; 10: Eiselen 1932; 11: Emboden 1989; 12: Gelfand *et al.* 1985; 13: Gerstner 1938; 14: Gerstner 1941; 15: Harner 1973a; 16: Harner 1973b; 17: Hirst 1990; 18: Hirst 2000; 19: Hulme 1954; 20: Hutchings *et al.* 1996; 21: Iwu 1993; 22: Jacot Guillarmod 1971; 23: Jacot Guillarmod 1982; 24: Johnston 1972; 25: Junod 1962; 26: Katz 1982; 27: Krige 1940; 28: Laydevant 1932; 29: Laydevant 1933; 30: Laydevant 1939; 31: Lee 1979; 32: Loeb *et al.* 1956; 33: Mabogo 1990; 34: Manana 1968; 35: Mönnig 1967; 36: Neuwinger 1996; 37: Oliver-Bever 1986; 38: Palmer & Pitman 1972; 39: Phillips 1917; 40: Pooley 1993; 41: Pujol 1990; 42: Schultes & Hofmann 1992; 43: Simon & Lamla 1991; 44: Sobiecki 2002; 45: Turner 1992; 46: Van Wyk *et al.* 1997; 47: Van Wyk & Gericke 2000; 48: Watt 1967; 49: Watt & Breyer-Brandwijk 1962; 50: Winkelman & Dobkin de Rios 1989.

Albizia adianthifolia (Schumach.) W. Wright var.
adianthifolia

Fabaceae

Voucher specimen: *Sobiecki 4*

muvhadangoma (V)

Parts used unknown

Unidentified parts are taken orally to induce dreams and improve the memory (V) [33].

Avonia rhodesica (N.E.Br.) G.D.Rowley.

Portulacaceae

Common name unknown (B), *tirika* (Sh)

Parts used unknown

A beer additive in Zimbabwe, and is reported to have hallucinogenic and narcotic activity [12], [47]. Used in rainmaking rituals together with other psychoactive plants such as *Datura stramonium** and *Chenopodium ambrosioides* (B) [8].

Anisophyllea boehmii Engl.

Anisophylleaceae

mufungu (Nd)

Leaf, bark

The bark is boiled and the leaves are made into a cold-water infusion that is taken orally together with other plants as a drinking medicine in the Ihamba (spirit) exorcism ritual (Nd) [45]. Psychoactive effects were experienced after the infusion was taken [45].

Canthium inerme (L.f.) Kuntze

Rubiaceae

muhotuhotu (Nd)

Leaf

Unspecified parts are prepared into a cold-water infusion that is taken orally with other plants as a drinking medicine in the Ihamba (spirit) exorcism ritual (Nd) [45]. Psychoactive effects were experienced after the infusion was taken [45].

Commiphora africana (A.Rich.) Engl. var. *africana*

Burseraceae

Common name unknown (San)

Leaf

The *Diamphidia vittatipennis* beetle larvae eat the leaves of this tree, and produce diamphidia toxin which is used as an arrow poison. However, ingested or smoked, it is non-toxic to mammals and it is reported that the dried and powdered larvae are smoked together with tobacco by the San causing them to fall into a state of drunkenness and hallucination [36]. This plant may have had uses in aiding trance among the San.

Datura metel L.*

Solanaceae

mondzo (Ts), *iloyi* (Z)

Parts used unknown

Unspecified parts are taken to induce hallucination in the final rite of the Tsonga girls puberty school. The use of the plant and its hallucinogenic effects

are believed to aid spiritual contact [24]. *Mondzo*= 'to see'.

*Eleutherine bulbosa** (Miller) Urban

Iridaceae

abanqonqosilababomvu (Z)

Bulb

The plant is believed to be used by indigenous healers for its magical and hallucinatory properties (Z) [20].

Ipomoea tricolor Cav.

Convolvulaceae

Common names unknown

Seed

In Zimbabwe unspecified groups chew 200 to 500 seeds to induce hallucinations [12].

Justicia flava (Vahl) Vahl.

Acanthaceae

impela (Z)

Root

Roots are used in magic ceremonies in South Africa (Z) [20]. *Justicia* species are added to a hallucinogenic snuff in Colombia and Brazil and may contain N,N-dimethyltryptamine.

Ochna pulchra Hook. f.

Ochnaceae

musengu (Nd)

Bark, leaf

A bark decoction is made into drinking medicine, and leaves are used as a wash for patients bodies in the Ihamba (spirit) exorcism ritual (Nd) [45]. Psychoactive effects were experienced after the infusion was taken [45].

Scelotium tortuosum (L.) N.E.Br.

Mesembryanthemaceae

kanna (K)

Aerial parts

The prepared plant material is chewed, with numerous psychoactive uses on record for this plant notably as a mood enhancer and anxiolytic (K) [47].

Its role in San trance induction has been convincingly demonstrated in a recent paper by Mitchell and Hudson (2004).

Sphedamnocarpus pruriens (A.Juss.) Szyszyl. subsp.

pruriens

Malpighiaceae

pupuma (Cho)

Parts used unknown

Unspecified parts are used by the Chopi with *Securidaca longepedunculata* for people believed to be possessed by evil spirits (Cho) [49]. Roots are used for mental disorders by the Venda [33].

Vangueriopsis lanciflora (Hiern) Robyns.

Rubiaceae

musoli (Nd)

Bark, leaf

The tree of revelation. The bark is boiled and the leaves are made into a coldwater infusion, that is taken orally, together with other plants as a drinking medicine in the *ihamba* (spirit) exorcism rituals (Nd) [45]. Roots are used to treat madness in Malawi [12].

Xylopiya odoratissima Welw. ex Oliv.

Annonaceae

mututambulolu (Nd)

Root

Scraped roots are boiled and the juice is taken orally with other ingredients in the Ihamba (spirit) exorcism rituals (Nd) [45]. Psychoactive effects were experienced after the infusion was taken [45]. *Xylopiya aethiopica* (Dunal) A.Rich is said to contain the alkaloid anonaine that resembles morphine in action [49].

Ziziphys mucronata Willd. . subsp. *mucronata*

Rhamnaceae

chikwata (Nd)

Root

Used with other plants as a drinking medicine in the Ihamba (spirit) exorcism rituals [45]. It has analgesic effects [20].

REFERENCES

- Ashton, E.H. 1943. *Medicine, magic and sorcery among the Southern Sotho*. Cape Town: Rondebosch Publishers, University of Cape Town.
- Boshier, A.K. 1973. African apprenticeship. In: Angoff, A. & Barth, D., eds, *Parapsychology and anthropology*. Proceedings of an international conference held in London, England, August 29–31. New York: Parapsychology Foundation, Inc.
- Boulos, L. 1983. *Medicinal plants of North Africa*. Algonac, Michigan: Reference Publications Inc.
- Broster, J. 1981. *Amagqirha: religion, magic and medicine in Transkei*. Cape Town: Via Africa.
- Bryant, A.T. 1966. *Zulu medicine and medicine men*. Cape Town: C. Struik.
- Callaway, H. 1868. *The religious system of the Amazulu*. Springvale, Natal: J.A. Blair.
- Callaway, H. 1991. The initiation of a Zulu diviner. In: Peek, P.M., ed., *African divination systems: ways of knowing*. Bloomington and Indianapolis: Indiana University Press.
- Chaumeil, J. & Chaumeil, J.P. 1979. Chamanismo yagua. *Amazonia Peruana* 2 (4): 35–69.
- Cunningham, A.B. 1988. *An investigation of the herbal medicine trade in Natal*. Report 29. Pietermaritzburg: Institute for Natural Resources.
- De Korne, J. 1994. *Psychedelic shamanism: the cultivation, preparation and shamanic use of psychotropic plants*. Port Townsend: Loompanics Unlimited.
- De Smet, P.A.G.M. 1996. Some ethnopharmacological notes on African hallucinogens. *Journal of Ethnopharmacology* 50: 141–46.

- Dobkin De Rios, M. 1986. Enigma of drug-induced altered states of consciousness among the !Kung Bushmen of the Kalahari desert. *Journal of Ethnopharmacology* **15**: 297–304.
- Dold, T & Cocks, M.L. 1999. *Imithi yamasiko*—culturally useful plants in the Peddie District of the Eastern Cape with specific reference to *Olea europaea* subsp. *africana*. *PlantLife* **21**: 24–6.
- Dornano, S.S. 1929. Rainmaking in South Africa. *Bantu Studies* **3**: 185–189.
- Duke, J. 1985. *Handbook of medicinal herbs*. Boca Raton, Florida: CRC Press.
- Eislen, W.M. 1932. The art of divination as practised by the Bamasemola. *Bantu Studies* **1**: 1–4.
- Emboden, W. 1989. The sacred journey in dynastic Egypt: shamanistic trance in the context of the narcotic water lily and the mandrake. *Journal of Psychoactive Drugs* **21**: 61–75.
- Gelfand, M., Mavi, S., Drummond, R.B. & Ndemera, B. 1985. *The traditional medical practitioner in Zimbabwe*. Harare: Mambo Press.
- Gerstner, J. 1938. A preliminary checklist of Zulu names of plants with short notes. *Bantu Studies* **12** (3): 215–236, (4): 321–342.
- Gerstner, J. 1941. A preliminary checklist of Zulu names of plants with short notes. *Bantu Studies* **15** (3): 277–301, (4): 369–383.
- Hall, J. 1994. *Sangoma: my odyssey into the spirit world of Africa*. New York: Simon & Schuster.
- Hammond-Tooke, W.D. 1998. Selective borrowing? The possibility of San shamanic influence on Southern Bantu divination and healing practices. *South African Archaeological Bulletin* **53**: 9–15.
- Harner, M.J. 1973a. *The Jivaro*. Garden City: Anchor Press and New York: Doubleday.
- Harner, M.J. ed. 1973b. *Hallucinogens and shamanism*. London: Oxford University Press.
- Hirst, M. 1990. *The healers art: Cape Nguni diviners in the township of Grahamstown*. PhD thesis, Rhodes University.
- Hirst, M. 1997. A river of metaphors: interpreting the Xhosa diviner's myth. In: McAllister, P., ed., *Culture and the commonplace: anthropological essays in honour of David Hammond-Took*. Johannesburg: Witwatersrand University Press.
- Hirst, M. 2000. Root, dream and myth. The use of the oneirogenic plant *Silene capensis* among the Xhosa of South Africa. *Eleusis: Journal of Psychoactive Plants and Compounds* **4**: 119–50.
- Hoernlé, A.W. 1937. Magic and medicine. In: Schapera, L., ed., *The Bantu speaking tribes of South Africa: an ethnographical survey*. London: Routledge.
- Hulme, M.M. 1954. *Wild flowers of Natal*. Shuter and Shooter, Pietermaritzburg.
- Hutchings, A. 1989. A survey and analysis of traditional medicinal plants as used by the Zulus, Xhosa and Sotho. *Bothalia* **19**: 111–23.
- Hutchings, A., Scott, A.H., Lewis, G., & Cunningham, A.B. 1996. *Zulu medicinal plants: an inventory*. Pietermaritzburg: University of Natal Press.
- Iwu, M.M. 1993. *Handbook of African medicinal plants*. Florida: CRC Press.
- Jacot Guillarmod, A. 1971. *Flora of Lesotho*. Lehre: J. Cramer.
- Jacot Guillarmod, A. 1982. *A list of Sesotho Plant names with corresponding scientific names*. Lesotho: Ministry of Agriculture.
- Johnston, T.F. 1972. *Datura fastuosa* L. Its use in Tsonga girls' initiation. *Economic Botany* **26**: 340–51.
- Junod, H.A. 1962. *The life of a South African tribe*. Volume 2. Second edition. New York: University Books Inc.
- Katz, R. 1976. Education for transcendence. In: Lee, R., & Devore, I., eds, *Kalahari hunter-gatherers*. Cambridge, Massachusetts: Harvard University Press.
- Katz, R. 1982. *Boiling energy: community healing among the Kalahari !Kung*. Cambridge, Massachusetts: Harvard University Press.
- Kohler, M. 1941. *The izangoma diviners*. Pretoria: Government Printers.
- Krige, E.J. 1940. *Medicine, magic and religion of the Lovedu*. DLitt thesis, University of the Witwatersrand.
- Kuper, H. 1942. *An African aristocracy: rank among the Swazi*. London: Oxford University Press.
- Lambrecht, I. 1998. *A psychological study of shamanic trance states in South African shamanism*. PhD thesis, University of the Witwatersrand.
- Lamla, C.M. 1975. Present day diviners (*ama-gqira*) in the Transkei. MA dissertation, University of Fort Hare.
- Laydevant, F. 1932. Religious or sacred plants of Basutoland. *Bantu Studies* **6**: 65–9.
- Laydevant, F. 1939. Initiation du medecin-sorcier en Basutoland. *Anneli Latern* **3**: 99–139.
- Laydevant, F. 1946. La costume du hlonpho. *Africa* **16** (2): 83–91.
- Lee, R. 1979. *The !Kung San: men, women and work in a foraging society*. Cambridge: Cambridge University Press.
- Liengme, C.A. 1983. A survey of ethnobotanical research in South Africa. *Bothalia* **14** (3 & 4): 621–9.
- Loeb, E.M., Koch, C. & Loeb, E.M.K. 1956. Kuanyama Ambo magic. Part 6. Medicinal, cosmetic and charm flora and fauna. *Journal of American Folklore* **69**: 147–74.

- Luna, L.E. 1984. The concept of plants as teachers among four mestizo shamans of Iquitos, North Eastern Peru. *Journal of Ethnopharmacology* **11**: 135–56.
- Mabogo, D.E.N. 1990. *The ethnobotany of the Vhavenda*. MSc dissertation, University of Pretoria.
- Manana, C.J. 1968. *Umongo wolwazi: African medicinal herbs*. Mayville, Durban: Pinetown Printers.
- Mayer, A. 1995. Bees and the baneful Rhododendron: Mad honey! *Archaeology* **48** (6): 32–40.
- Mitchell, P. & Hudson, A. 2004. Psychoactive plants and southern African hunter-gatherers: a review of the evidence. *South African Humanities* **16**: 39–57.
- Mönnig, H.O. 1967. *The Pedi*. Pretoria: J.L. Van Schaik Publishers.
- Neuwinger, H.D. 1996. *African ethnobotany: poisons and drugs: chemistry, pharmacology, toxicology*. London: Chapman & Hall.
- Oliver-Bever, B. 1986. *Medicinal plants in tropical West Africa*. London: Cambridge University Press.
- Ott, J. 1998. The delphic bee: Bees and toxic honeys as pointers to psychoactive and other medicinal plants. *Economic Botany* **52** (3): 260–6.
- Palmer, E. & Pitman, N. 1972. *Trees of southern Africa*. Volume 2. Balkema, Cape Town.
- Phillips, E.P. 1917. A contribution to the flora of the Leribe Plateau and environs. *Annals of the South African Museum* **16** (1): 1–379.
- Pooley, E. 1993. *The complete field guide to trees of Natal, Zululand and Transkei*. Durban: Natal Flora Publications Trust, Natal Herbarium.
- Pujol, J. 1990. *Naturafrika—the herbalist handbook*. Durban: Jean Pujol Natural Healers Foundation.
- Ratsch, C. 1987. Der Rauch von Delphi. Eine ethnopharmakologische Annäherung. Curare: *Zeitschrift für Ethnomedizin* **10**: 215–28.
- Schultes, R.E. & Hofmann, A. 1992. *Plants of the gods: their sacred, healing and hallucinogenic powers*. Rochester, Vermont: Healing Arts Press.
- Schweitzer, R.D. 1977. *Categories of experience among the Xhosa*. MA dissertation, Rhodes University, Grahamstown.
- Simon, C. & Lamla, M. 1991. Merging pharmacopoeia: understanding the historical origins of incorporative pharmacopoeial processes among Xhosa healers in Southern Africa. *Journal of Ethnopharmacology* **33**: 237–42.
- Sobiecki, J.F. 2002. A preliminary inventory of plants used for psychoactive purposes in southern African healing traditions. *Transactions of the Royal Society of South Africa* **57** (1 & 2): 1–24.
- Turner, E. 1992. *Experiencing ritual. a new interpretation of African healing*. Philadelphia: University of Pennsylvania Press.
- Van Wyk, B.-E., Van Oudtshoorn, B., & Gericke, N. 1997. *Medicinal plants of South Africa*. Pretoria: Briza Publications.
- Van Wyk, B.-E. & Gericke, N. 2000. *People's plants*. Briza Publications, Pretoria.
- Watt, J.M. 1967. African plants potentially useful in mental health. *Lloydia* **30**: 1–22.
- Watt, J.M. & Breyer-Brandwijk, M.J. 1962. *The medicinal and poisonous plants of southern and eastern Africa*. Second edition. Edinburgh: E. & S. Livingstone.
- Werry, J.S. & Aman, M.G. 1993. *Practitioner's guide to psychoactive drugs for children and adolescents*. Plenum Publishing Corporation.
- Williams, V.L. 2007. *The design of a risk assessment model to determine the impact of the herbal medicine trade on the Witwatersrand on resources of indigenous plant species*. PhD Thesis, University of the Witwatersrand.
- Williams, V.L., Balkwill, K. & Witkowski, E.T.F. 2001. A lexicon of plants traded in the Witwatersrand *umuthi* shops, South Africa. *Bothalia* **31**: 71–98.
- Winkelman, M. & Dobkin De Rios, M. 1989. Psychoactive properties of !Kung Bushmen medicine plants. *Journal of Psychoactive Drugs* **21**: 51–9.