

All the representatives of the Loranthaceae mistletoes in South Africa are epiphytic (plants growing on another plant) shrubs that parasitize mainly trees. Seeds are taken to the tops of the trees by fruit-eating birds where they germinate - the plants obtaining nutrients and water through specialized absorptive suckers (haustoria) which penetrate the host and tap into the xylem tissue.

Two species *Pedistylis galpinii* and *Erianthemum dregei* cause odd flower-like outgrowths of the host tissue which are called woodroses. Made up entirely of host tissue, woodroses are most conspicuous once the parasite has died and its soft wood has disintegrated. The formation of a woodrose, a wound-response, could be caused by a hormonal host response, or it could be a result of the penetration by the haustorium.

Mistletoes seem to 'choose' their host trees ('tree-host specificity') by means of a chemical produced by the host which triggers germination. Only members of the Loranthaceae have been observed to produce woodroses - the quality of the woodrose being determined by the host.

Some are distinguishable by colour and growth-form. For example, the commonest one occurring on the marula (*Sclerocarya birrea*) is rosy to cream in colour, turning dark brown when harvested once the parasite has died. The growth-form is highly variable and can be tubular or disc-like. The open disc-like woodroses obtained from the

WOODROSES

Some parasitic mistletoes produce flower-like outgrowths at the point of attachment to the host tree.

In the central Mpumalanga (formerly the Eastern Transvaal) lowveld local people harvest these outgrowths, remove the mistletoe, and sell the remaining ornate host tissue (the woodrose) as a curio.

by Catherine Dzerefos,
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jackal berry (*Diospyros mespiliformis*) are dark brown irrespective of the state of the parasite before harvesting. Woodroses of a harvestable size are rarely found upon the black monkey orange (*Strychnos madagascariensis*) and are very unusual as they are highly convoluted, black inside and whitish-grey outside.

In the central Mpumalanga lowveld the two woodrose-producing mistletoe species are harvested from trees by cutting the supporting tree branch. The softer wood of the parasite is separated from the harder host wood with a panga. Nails, metal hangers with flattened points, and screwdrivers are used to reveal the intricate striations of the host tissue. Sandpaper, steel wool, and water or a steel brush are used to obtain a smooth clean finish. Harvesters generally

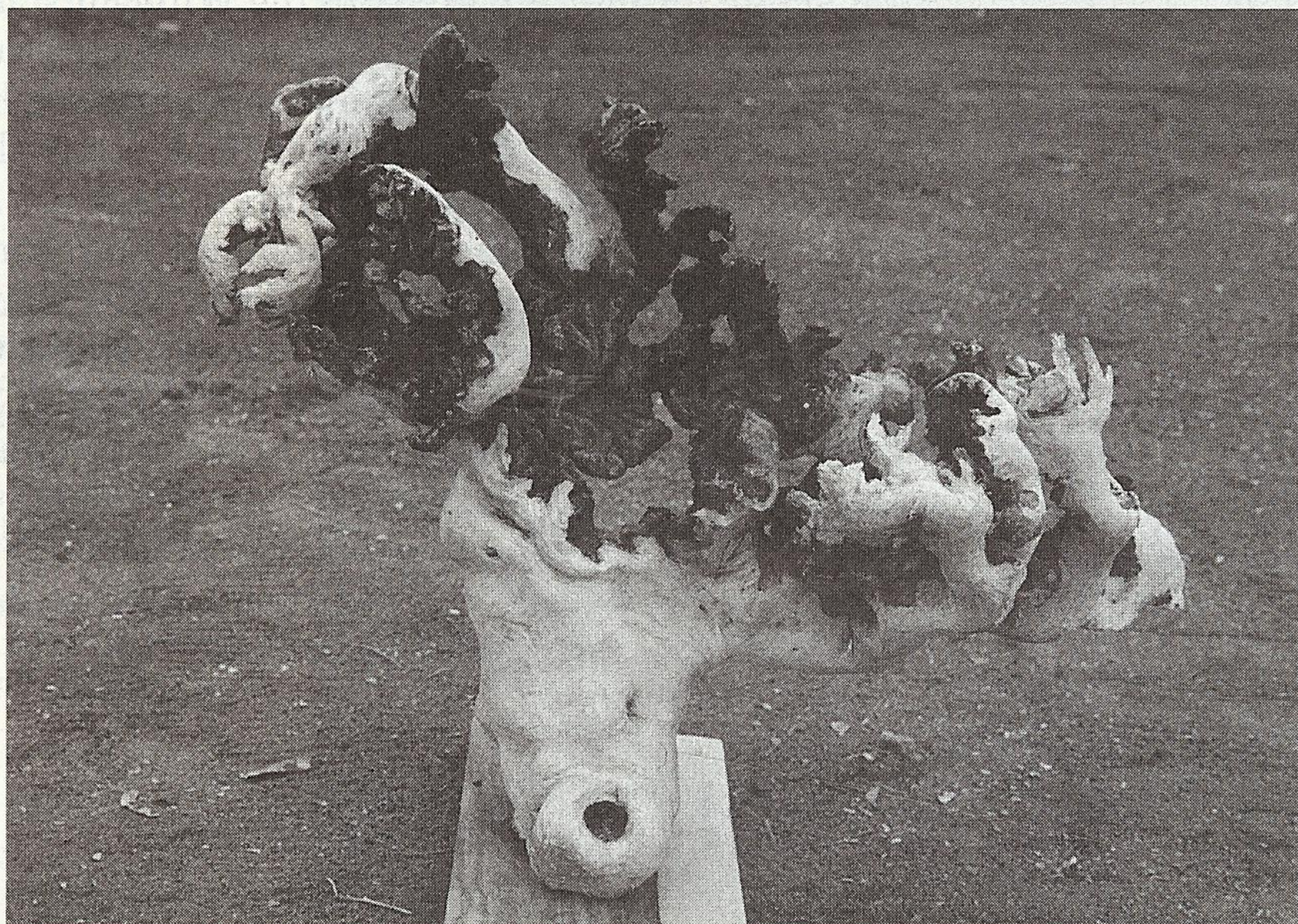
display the open end of the woodrose by attaching a stand on the remains of the branch and may varnish it. Large specimens may be fitted with light or oil-lamp fittings.

The curio trade is being supplied with woodroses from the Mpumalanga lowveld, Swaziland and southern Mozambique although the distribution of both species is known to be wider. The price depends on size (which ranges from 10-50 cm across, although specimens almost 1 m wide

can be found). Sales provide some income for families in rural areas with an under-developed economy and few employment possibilities. Recently, there has been some interest in the development of an export trade in woodroses to supply florists in Europe.

Traditional healers in the lowveld use water in which the host-parasite complex has been soaked to induce vomiting, cleanse the gall bladder, and restore appetite. Powdered mistletoe leaves have been used to bring good fortune, to treat nervous system disorders, and as male aphrodisiacs. It is well known locally that mistletoe branches should not be used to make fires as inhalation of the smoke causes glandular swelling.

Viscin from mistletoe seeds is used by children for making bird traps. The fruit wall is removed and the viscous layer is collected in the mouth by removing and spitting out the seed. When enough viscin has been collected it is



A rare woodrose found on *Strychnos madagascariensis*.
Photo: C. Dzerefos.

wound around the branches of trees or shrubs and grains, seeds, or insects are used as bait to entice birds. Children catch lilac-breasted rollers and night-jars in this manner for food. The viscin can also be used as a substitute for 'prestik' to fix pictures onto walls.

The New Zealand woodrose, a proliferation of root-host tissue, came under discussion at the CITES plants committee meeting held in May 1994 as it was reported that international trade had placed the species in peril. It was recommended that further market research be conducted and that national legislation be passed to protect the species. As infrastructure and marketing skills improve in rural areas the African woodrose could also become sought after and so research into the distribution, growth, regeneration, and harvesting practices needs to be conducted.

Survival in rural South Africa has long meant intimate dealings with the environment such that indigenous knowledge sometimes surpasses what has been documented and researched. J. Visser's book was the only reference I found which specifically mentions woodroses formed by an aerial parasite. Research is presently being done through the Wits Rural Facility in Mpumalanga where information gathered from mistletoe harvesters and retailers is linked to distribution data and the growth of the woodrose-producing population in order to make recommendations for sustainable utilization of woodroses in the future. 🌿

Further reading

Visser, J. (1986). *South African parasitic flowering plants*. Juta, Johannesburg.

About the author

Catherine Dzerefos is working on her M.Sc. through the University of the Witwatersrand at their Rural Facility in Mpumalanga. Working at the interface of rural development and scientific research, Catherine has investigated indigenous edible foods in the Bushbuckridge area and is also involved with waste recycling projects with rural school environmental groups.



Above.
A harvester preparing a woodrose for sale.

Right.
The mistletoe, *Erianthemum dregei* in flower on the host sickle bush (*Dichrostachys cinerea*).

Photos: C. Dzerefos.



THE WITS RURAL FACILITY

The Wits Rural Facility (WRF) was founded in 1989 to provide a rural venue for the University of the Witwatersrand where staff and students could research and learn about rural issues, thereby contributing to rural development. Numerous traditional disciplines are represented at the WRF such as the biological sciences, engineering and education. In addition there are some innovative programmes of direct benefit to communities, such as water information and income-generation projects. WRF is in Mpumalanga, mid-way between Nelspruit and Tzaneen on the Orpen Road leading to the Orpen Gate of the Kruger National Park. It has close links with communities living in the former homelands of Lebowa and Gazankulu.

For more information regarding possible student trips or prospective sabbaticals, contact Prof. J. Gear at the Wits Rural Facility, Private Bag X420, Acornhoek, 1360. Tel (01528) 33991, fax (01528) 33992.