

THE PROMISE IN PROMISSION

Promission, an ecologically friendly solution to the age-old need to dispose of human remains in a respectful and effective manner, was devised in 1997 by Susanne Wiigh-Mäsak, a Swedish biologist (see page 6). Cremation - itself adopted as a solution to groundwater pollution from graveyards and legal from 1884 - has become, over the last 40 years, the most commonly used method in the UK, yet it causes significant environmental damage. However, a solution may be at hand. Promission is exciting attention around the globe as different cultures, faith groups and governments see how this new alternative can fit with traditional rituals and beliefs while contributing an answer to present concerns relating to land scarcity and degradation, air and water pollution and fossil fuel use.

Promission is the application of cryogenics (freeze-drying) and composting to the disposal of human remains. From the funeral to complete re-absorption into nature takes between six and twelve months. This is described below and illustrated on page 5.

THE PROCESS

Stage 1

After the funeral service the body in the coffin is removed into a chamber where it will be frozen to -18°Celsius in an ordinary mechanical freezer. This will take between 24 and 48 hours. Once the body has been cooled to -18°C, it is ready to be placed on to a moving platform that will transport the coffin through the different stages of the process; this part of the process takes place within a sealed unit, the Promator.

Stage 2

The coffin is first weighed to determine how much liquid nitrogen will be required to freeze the body to -196°C; the calculation will be carried out automatically by specially designed weighing machines and based on 1kg liquid nitrogen per 1kg of body weight. This cooling process will take 2 hours and the liquid nitrogen will meanwhile evaporate into the atmosphere in its natural gas form of nitrogen.

Stage 3

Once the body has reached -196°C it will be mechanically transported onto a belt which will give off small, 5 millimetres, vibrations. This part of the process takes approximately 60 seconds.

Stage 4

The powder will then move into a vacuum chamber where clean water (70% of the body's composition) will evaporate and be dispersed into the atmosphere as natural steam.

Stage 5

The dry powder passes through electrical currents which will extract any metals that exist. The metals will be placed in a container ready to be recycled.

Stage 6

The dry powder residue, which will weigh approximately one third of the original body weight, still within the sealed unit, will be placed into a shallow bio-degradable coffin. The coffin may be lined with an iron net that will rust away; this would protect the remains from disturbance by animals etc. Iron is a natural mineral found in soil and is not harmful to the environment.

Stage 7

• Burial: the coffin will be buried to a depth of about half a metre. In approximately 6 to 12 months the remains and the coffin will have become part of the life giving nutrients of the soil. It is suggested that a plant or tree be placed on the grave to absorb the nutrients and become a symbol of the person or just a possibility for new life.

• Cremation: alternatively it will be possible for the remains (the organic, metal-free, dry powder) to be cremated in a smaller incinerator / furnace, if it is important for religious or other

reasons that the body be reduced to ashes. The ashes can then be scattered or buried in a biodegradable urn. A 'Mini Cremator' has recently been developed which does not emit mercury or dioxin and can be part of a Promatorium.

THE COSTS

FINANCIAL

Building: The costs of building a Promator are comparable to a new Cremator with abatement equipment (&AE) - the latter is required by UK law by 2013 to deal with 50% of mercury emissions. (Mercury is a highly toxic heavy metal found in dental fillings and has been linked to damage to the brain and nervous system.)

• Process: The cost of promission is estimated to be similar to cremation. In 2004 Swedish figures were an average of €250 for cremation and an estimate of between €240 and €295 for promission. It is not clear if burial is included in these figures but any burial space will be comparable to that for a large urn and the costs of digging a shallow grave less than that for the current standard depth. Fossil fuels are a major cost in cremation, which requires 900°C temperatures for c. 1.5 hours, and are beginning to run out, bringing increasing costs and problems in the long term. Producing liquid nitrogen is much cheaper, estimated in 2006 as costing £10 on average per promission.

ENVIRONMENTAL

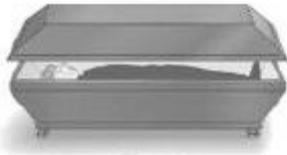
• Footprint: The space needs of the Promator are similar to that of a Cremator &AE, with the addition of space for the liquid nitrogen bulk storage tank. However Crematoria may need increased storage space in future (see later section 'Custom and Practice').



photo: Yucel Tellci
www.tellgraf.com

PROMESSON ILLUSTRATED

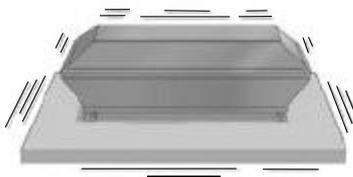
Stage 1 : The body is frozen down to -18 °C.



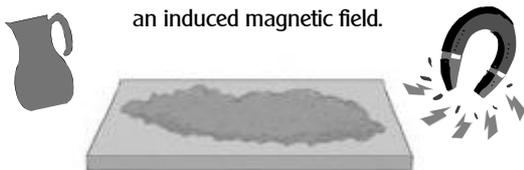
Stage 2: The coffin with the deceased is lowered into liquid nitrogen. The body becomes very firm and brittle.



Stage 3: The coffin and the body are exposed to a light vibration, disintegrating into dust.



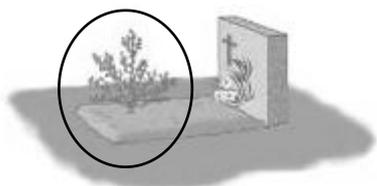
Stages 4 & 5: Water is removed by vacuum, then mercury and other metals are separated using an induced magnetic field.



Stage 6: 20 - 30 kg of the powder now remains. This is put into a coffin made from maize or potato starch.



Stage 7: The starch coffin is buried shallowly and will turn into compost in 6 - 12 months' time. A tree can be planted on the grave as a living memorial. It will then absorb the nutrients given off. (Conventionally, a gravestone could be erected.)



adapted from: http://promessa.se/illustration_en.asp

The Promise in Promession - continued from p4

- **Pollution:** UK / EU targets for cutting mercury emissions from cremation when enacted, still allow for 50% of emissions to continue. In 1990 a Swedish research study found that mercury vapour from the cremation of one person with an average number of fillings was enough to poison the fish in five 10-acre lakes. It is estimated that Crematoria are responsible for c. 16% of the UK's total mercury emissions and without change, by 2020 Crematoria would become the UK's biggest contributor to mercury emissions. The burning of fossil fuels and glues and plastics (used in standard coffins) releases other air pollutants. Promession does not produce any harmful emissions; the nitrogen released in promession is a natural (78%) component of air, with an inexhaustible supply, and is harmless on release.
- **Global warming:** Fossil fuel combustion as used in cremation contributes to global warming. (The energy required to create liquid nitrogen is significantly less than that required by a Cremator.) A Promatorium's energy needs are less and it could be built with its own renewable energy source.
- **Infection:** Pathogens are generally killed in cremation but remain in promession; this is the same as with burial and provides no greater risk. This has been investigated and confirmed by the Swedish National Board of Health and Welfare.

CUSTOM AND PRACTICE

Promession will take longer than burial and at least a day more than current Crematorium practice. Burial usually follows directly upon the funeral service. Cremation is usually the same or next day after the funeral but industry standards permit up to 3 days and as cost-savings are sought, this may become more common. If bodies were stored longer between the funeral and cremation, then Crematoria would need additional cold storage space which would increase their space needs. Promession is estimated to take 2 - 4 days. Promains can be stored indefinitely if sealed in a vacuum container; they begin to disintegrate only on contact with moisture. They are therefore quite portable from the Promatorium to a more distant burial site.

CURRENT USE OF PROMESSON

No Promator exists at the moment. The method of promession has been successfully trialled using animal remains and the world's first Promator plus Mini Cremator is expected to be installed in Sweden by the end of 2007. Delays have been caused by the sheer innovative nature of this process and that laws may need to be changed, but support and momentum abounds. The Swedish government has authorised trials using human bodies, 60% of the Swedish population in a recent poll stated they would consider choosing promession and since 2003 the (Lutheran) Church of Sweden has advised the public that promession is an acceptable burial method.

Many other countries have expressed interest and the English local authority of Crewe & Nantwich are actively planning for a Promatorium by 2010. Some change to English Law is likely to be required and the UK Home Office has already been in discussions with Crewe & Nantwich Council with this actively in view.

THE POSITION IN SCOTLAND

An article on promession in the 'Scotsman' of 14th October 2005 gave the following: "Although officials south of the Border believe [promession] would breach English cremation laws, legal experts and church leaders in Scotland said they had no objection to the new method of disposing of the dead. Professor (Emeritus) Kenyon Mason, an expert in forensic medicine and pathology, medical law and medical ethics, said: "So long as you don't interfere with public health and safety, there are very few rules and

continued on p6

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Our ecological burial reduces environmental impact on some of our most important resources; our water, air and soil. At the same time it provides us with deeper insights regarding the ecological cycle, and greater understanding of and respect for life on earth.

SUSANNE WIIGH-MÄSAK

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Main sources:

[www.promessa foundation.org/index.php?ID=11](http://www.promessa.foundation.org/index.php?ID=11)

http://promessa.se/index_en.asp

http://www.crewe-nantwich.gov.uk/community_life_events/cemeteries_and_crematorium/promession.aspx

there is nothing to stop you burying your aunt at the bottom of the garden if you wish." Tight guidelines on cremation have been introduced because the body is completely destroyed, which could have implications in crime cases. Prof Mason said promession created similar legal concerns, but would not be covered under cremation legislation. "Since it would not be covered by cremation law, I don't see why it shouldn't happen, as long as it is not offending against public health or local government regulations. Sooner or later we're going to have to stop burying people because all the space will be taken up. It seems to me that it is just as proper to have a casket containing ashes or powder as a body, so ethically it seems quite all right" A spokesman for the Church of Scotland said: "There do not appear to be any theological implications with this method of disposal, but it sounds like an appropriate thing from an environmental viewpoint."

The minutes of the sixth meeting of the Review of Burial and Cremation Legislation Review group held on 6th February 2006 record that two members of the Scottish Executive Public Health Division were attending a promession seminar in Crewe on 15th February 2006 (joining 70 UK local authorities) and would draft a paper for the next meeting in April 2006. Unfortunately the website has not been updated since then, so this paper and the group's comments are not publicly available. It appears that the Group has not yet formally reported on its Review to the Scottish Government.

THE PROMISE?

Promession has been tested to: confirm that it works ecologically; consider whether it meets public health and environmental requirements; see if it meets with public and several faith groups' approval. Traditional burial is now running out of space and the 'chemical desert' that manicured cemeteries offer, destroys healthy biodiversity.

"Natural' burials which create or maintain organically managed woodlands are of great benefit to the planet and can be more personalised for mourners, but for those who do not want burial, or who need to transport remains some distance, promession's mimicking of nature's methods and its success in minimising damage to the environment promises to offer a powerful alternative to cremation. While it is essential that existing Crematoria are improved at great cost to minimise their emissions, when the building of a new Crematorium is being planned (as currently in the Scottish Borders) it seems appropriate to debate publicly whether or not a much less polluting and more environmentally friendly Promatorium with Mini Cremator should be built instead.

The group pushing for legal acceptance of cremation back in 1874 declared "...we desire to substitute some model [for burial] which shall rapidly resolve the body into its component elements, by a process which cannot offend the living, and shall render the remains perfectly innocuous. *Until some better method is devised* [my emphasis] we desire to adopt that usually known as cremation." Promession does seem to be that 'better method' as many now find cremation's pollution of our environment and contribution to global warming, offends. If you consider the promise in promession is the disposal of our dead in a respectful way in keeping with nature's intended processes and one which benefits the health and wellbeing of both people and planet, then this is the time to contact MSPs and local Councillors and ask for that public debate.

HEATHER JOHNSTON

SUSANNE WIIGH-MÄSAK
INVENTOR OF PROMSSION



photo: www.crewe-nantwich.gov.uk

Susanne Wiigh was born on August 9, 1956 in Gothenburg, Sweden. Her mother, Karin, was a homemaker and administrator, and her father, Erik, headed the bacteriological laboratory for the biggest milk company in Sweden. He introduced Susanne and her younger brother, Lars, to microbiology at an early age and they both worked in his lab during their summer holidays. She became interested in ecology at the age of 17.

In 1979, after graduating from the University of Gothenburg with a BA in biology, Susanne moved to the island of Lyr, off the west coast of Sweden, and married Peter Mäsak. Susanne taught courses on ecological cultivation and composting while continuing her love of gardening.

From 1981 Susanne was employed as an environmental engineer at a petrochemical company in nearby Stenungsund and had her three children during the following eight years. She remained at the petrochemical company for 15 years, but her gardening never stopped. "During my last summer on the job, I brought flowers, cuttings, plants and various vegetables to work with me every day, for co-workers who had bought them to order. The switchover sort of snuck up on me until I suddenly realized, 'Wow, this must be what I really want to do.'"

She seized an opportunity to expand her organic gardening into a full-time business and in 1997 opened a store and an educational centre. For her efforts to provide ecologically approved produce in such a sparsely populated area, she received national media attention and numerous awards, including from the Swedish King Carl XVI Gustaf for her contribution to ecological awareness.

Having pondered the question of eco-friendly and respectful body disposal for 20 years, Susanne applied her scientific understanding of decomposition and realised that a new way of disposing of human remains was possible and desirable. Since publicising this in 2001 she has been in demand worldwide to introduce and explain this innovation.

adapted from: www.memorialsocietybc.org/docs/Wiigh.pdf

NEW CONCEPT - NEW LANGUAGE

Ms Wiigh-Mäsak created *promession* from Italian *promissione*, to swear to the truth. The place where the funeral is held and the process takes place has been named *promatorium*, a blend of *promession* and *crematorium*.

The resulting powder is called *promains*, by analogy with the US term *cremains* for the ashes of a cremated person, itself a blend created from *cremation* *remains*.

Daily Telegraph, 28 September 2005