

NORBERT HAHN

CURRICULUM VITAE

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Personal Data

- Date of birth: 28 April 1966
- Marital status: Single
- Nationality: Dual South African and British citizenship
- Languages: Afrikaans, English and German
- Driver's licence: Code C
- First Aid Level 2

Education

- 1985, National Senior Certificate Std 10

Higher Education

➤ Master of Science

- 2003, awarded the degree of MSc (Botany), *cum laude*, by the University of Natal, Pietermaritzburg for the thesis *Endemic Flora of the Soutpansberg* (Hahn 2003). Based on the preliminary findings of this study the Soutpansberg was recognised as one of the southern African centres of endemism (Van Wyk & Smith 2001)

➤ Philosophiae Doctor

- 2007, awarded the degree of PhD (Botany) by the University of Pretoria, for the thesis *Floristic diversity of the Soutpansberg, Limpopo Province, South Africa* (Hahn 2006).

Précis of projects and achievements

➤ Tree List of the Soutpansberg (Hahn 1994)

- Compilation of *Tree List of the Soutpansberg*, a comprehensive listing of the areas arborescent flora published under the auspices of the Western Soutpansberg Working Group. (Foreword by Prof. Braam van Wyk.)

➤ Herbarium Soutpansbergensis (ZPB) (Hahn 1999a)

- A personal herbarium established in 1990, included in Index Herbarium: Southern African Supplement (Smith & Willis 1999) and internationally accredited in Index Herbariorum database. The collection numbers approximately 5 000 specimens.

➤ Index of the Succulent Flora of the Soutpansberg (in prep)

- The Soutpansberg supports a succulent flora of 280 recorded taxa, 10 being endemic. The index will be finalised once a comprehensive photographic record has been completed.

➤ Comparative Study on the Arborescent Flora of the Soutpansberg

- This study formed an important precursor to my PhD thesis comparing the arborescent flora of the Soutpansberg with that of the Tswapong and Matopo Hills, the Eastern Highlands of Zimbabwe, the Wolkberg and the Waterberg

➤ Archæology

- 1992, under the guidance of Dr. John Vogel (the then Head of the C₁₄ dating division, CSIR) the National Monuments Council awarded me a lifetime permit to collect archæological artefacts on the farms Little Leigh, Morningsun and Zwarthoek (Hahn 1992a).
- Assisted the Rock Art Conservation Working Group in surveying for new sites.
- Assisted Warren Fish, the former archæologist at the Schoemansdal Museum, on archæobotanical matters concerning the early Iron Age. Undertaking of plant surveys on numerous archæological sites for Sidney Miller (archæologist at Thulamela, Kruger National Park).

Acted as botanical consultant at the second phase of the stabilisation of the Mapungubwe Cultural Landscape archaeological sites (Hahn 2006).

➤ **Soutpansberg Conservancy**

- Scientific committee member.

➤ **Vhembe Biosphere Reserve:**

- Founder member and scientific consultant from the inception of the initiative in 1993 and instrumental in compiling the IUCN nomination in 2006, and its inception in 2009.

➤ **Large scale habitat changes within the Soutpansberg Centre of Floristic Endemism — implications for the newly proclaimed UNESCO Vhembe Biosphere Reserve**

- This study aims to quantify the extent to which Soutpansberg habitats have been transformed from historic to novel ecosystems and the effect this has on the distribution of endemic plant taxa, unique floral assemblages and rare and endangered species. The results of the study will be used to inform conservation initiatives within the Vhembe Biosphere Reserve. This Post Doctoral study under the auspices of the University of Venda is pending NRF funding.

Commissioned Projects

- 1986–1994, nominated Natural Heritage Sites in collaboration with the Districts Development Council Subcommittee on Environmental Affairs.
- 1994, members of the previous committee were co-opted by the Western Soutpansberg Conservation Working Group. My portfolio became that of environmental advisor with special emphasis on the flora of the region.
- 1993, ESCOM commission to conduct plant surveys along a servitude running parallel to an existing 132 kV power line extending from Louis Trichardt to Messina.
- 1993 undertaking of plant surveys for the CSIR Biosphere Concept for the Soutpansberg, funded by the Department of Environmental Affairs (Hahn 1993).
- 1994, commissioned to conduct the plant identification of the Ecological Baseline Survey for the Matotwane Dam Project, initiated by the Venetia Mining Corporation.
- 1997, completion of an identification guide to the Rare and Endangered Flora of the Tshikondeni Mining Concession (Hahn 1997). From this study *Pavetta tshikondeni* was discovered and subsequently named after the Tshikondeni Mine (Hahn 1999b).
- 2000, field assessment of *Aloe vossii* to assess its IUCN Red List Criteria and to review its CITES status. This work was commissioned by the National Botanical Institute with funding provided by the British Cactus and Succulent Society (Hahn 2000).
- 2000–2002, submission of a project proposal in collaboration with Dr. Hans Hahn for a Greenhouse Reducing, Sustainable Development Projection to the Johannesburg Climate Legacy (JCL). The project, titled "Demonstration of Environmentally Sustainable Energy by Gasification of Biomass and Waste" (Project 13), was awarded its certificate of compliance in 2002 by the JCL.
- 2002, conducted a detailed survey of trees and shrubs for the Molozi Trust (Hahn 2002).
- 2002–2003, field assistant to Theo Mostert, researching his doctoral thesis on the vegetation ecology of the Soutpansberg and Blouberg areas in the Limpopo Province, African Vegetation and Plant Diversity Research Centre, Department of Botany, University of Pretoria.
- 2004, eradication of alien vegetation from wetlands in collaboration with the national Working for Water project initiated by the Department of Water Affairs and Forestry.
- 2005, compiled *Plant Species List, Towards a Vegetation Survey for the Utility of Spider diversity as a Surrogate, Measure to General Biodiversity*, commissioned by Dr. E. Stam, University of Venda, School of Environmental Sciences (Hahn & Mvundza 2005).

- 2005, (ongoing) assisting Dr S. Foord in field work for the South African National Survey of Arachnida (SANSA).
- 2006, compiled plant lists of the Mapungubwe Cultural Landscape for Archae-Info Northern Province as part of the Mapungubwe Rehabilitation Project (Hahn 2006).
- 2006, technical installation of cables and headgear for winching of materials used in rehabilitation work for Archae-Info Northern Province as part of the Mapungubwe Rehabilitation Project.
- 2006, preparation of the Vhembe Biosphere Reserve Nomination to IUCN. My involvement concerned the presentation of the biodiversity section, work with Geographic Information Systems (GIS) from which maps were generated, graphics and layout of the final document.
- 2006 collaboration with Dr S. Foord conducted the first Arachnid transect across the Soutpansberg. From this study the *Western Soutpansberg Arachnid Transect Tree List* was compiled (Hahn 2007). As a result of this study the Soutpansberg's known scorpion diversity was increased from 11 to 20 taxa.
- 2007, guniting operation for Mananzi Civils at a new adit at the Tshikondeni Coalmine, including installation of fixed ropes, design and implementation of techniques and safety procedures for construction work at height.
- 2008, compiled the Vegetation Survey of Marius 732 MS, Portion 1, Makhado Municipality Limpopo Province.
- 2010, assisted Benny Lemaire (Co-evolution in bacteriophilous *Psychotria* (**Rubiaceae**) and Brecht Verstraete from the Katholieke Universiteit, Belgium, Plant Systematics Laboratory, with their doctoral field work as South African expert on the family **Rubiaceae**.

Skills and abilities

➤ Field work

- Cartography and navigation: use of a dumpy level and theodolite and the manipulation of data; competent in the use of GPS (global positioning system) including differential correction; familiarity with other navigating and mapping technologies including compass and alidade.
- Mountaineering, including recreational and working at height to gain access to extreme natural and man-made work environments for plant surveys and machine work. Assisted in local mountain rescue operations.
- Personnel management on projects involving in excess of 20 workers.
- Organisation of and assistance in the preparation and completion of field trips up to 5 weeks long
- Field Botany: identification of plants and preparation of herbarium specimens; Plant surveys ecological, phytogeography and impact assessments. Have planned and overseen botanical and zoological research projects.
- Conversant with the collecting and preparation of invertebrate specimens.
- Archæology: field assessment of Archæological sites, both Stone Age and Iron Age cultures, in the Soutpansberg and Limpopo Valley.
- Field guide to local and foreign hiking and tour groups. Undertaking of off-road expeditions and vehicle recovery.
- Large group culinary skills. 20 people for up to 2 weeks or single bush meals up to 100 persons.

➤ Machine operator

- Extended use of agricultural vehicles, backhoes (TLB), workshop and other machinery.

- Driving of off-road vehicles (4 x 4) for over 25 years. Operation of vehicles from quad-bikes to Mercedes Benz UNIMOGs.
 - Experienced chainsaw operator. Actively involved in the eradication of alien vegetation over the past 24 years.
- **Curation of herbarium and archival collections;**
- Curation of the Herbarium Soutpansbergensis for 18 years, mounting specimens and compiling and updating its specimen database which is linked to a comprehensive southern African GIS and mapping system.
- **Software and computer skills**
- Configuration of hardware and the installation of operating systems and software based on personal computer technology. Knowledge on the installation of networking systems.
 - Mapping: OziExplorer 3.953f GPS Mapping Software; Fugawi 3 GPS Mapping Software.
 - GIS: IDRISI ver. 2 for Windows; ARC View 3.3 and the following plugins: 3D Analyst, Spatial Analyst, Image Analyst, Hawth's Analysis Tools and ARC Gis 9.3 ArcInfo,
 - Data bases: DBase 4 & 5 and its integration with ArcView and ARC GIS; Microsoft Access 2007.
 - Word processing: Microsoft Word 2007; SunSystems Star Office.
 - Web designs; Macromedia Dreamweaver CS3.
 - Desktop publication: 12 years of experience with Ventura, now Corel Ventura 10, in the compilation of high end reports, manuals and scientific books; Corel Draw 13 mostly used for the generation of vector based illustrations and maps.
 - Digital photo editing; Adobe Photoshop CS3 and Corel Photo Paint 13; Used for photo editing and enhancing, also used to scan and compile maps for use in OziExplorer and Ventura.
 - 15 years experience in the scanning of photos, slides, negatives and archival material. Other than private collections I have also copied archival material from the Hugh Exton Collection, Pietersburg Museum; Louis Trichardt Municipal Archive; McGregor Museum Kimberly Duggan Cronin photographic collection; National Archive of South Africa, Pretoria and the Merensky Library Africana section, University of Pretoria.
- **Hand-work**
- Metal work; welding, cutting, bending and manufacture of various articles. Woodwork and carpentry and the operation of most workshop machinery including hand tools.
 - Electrical installations including the establishment of solar powered systems and involvement with various alternative energy concepts.
 - Plumbing; household systems including solar water heating; installations of borehole pumps, piping and tank stands.
 - Knowledgeable in the overhaul of vehicle and generator, petrol and diesel motors. Additionally, can rebuild machine components and especially well versed in the maintenance and service of light and medium commercial and agricultural vehicles, particularly four wheel drives.
- **Photography**
- 1995–1996, underwent professional courses in large format photography under Mr. B. Cnoops FPPSA (Fellow in Professional Photography Southern Africa).
 - Specialisation in botanical photography *in situ*, with emphasis on macro photography; skilled in black & white and colour photography; practical knowledge of developing, printing and enlarging.

Membership and affiliations to organizations

- 1999, registered as a consultant to the Department of Water Affairs and Forestry, category: Forest and forest product research and development.
- 2000, listed in *Plant Taxonomic Expertise* (Mössmer & Willis 2000)
- Have acted as liaison and guide to both the Botanical Society of South Africa and the Pretoria Horticultural Society during outings.

Awards

- 1997, the Northern Province Department of Education, Arts, Culture and Sports awarded me a certificate recognising my work in the realm of natural heritage.

Publications

➤ Senior author

- HAHN, N.** & BREDENKAMP, G.J. 2007. **Lamiaceae**. *Rabdosiella leemannii*, a new species from the Limpopo Province of South Africa. *Bothalia* 37(1): 37–40.
- HAHN, N.** & MAVUNDZA, S. 2005. *Plant Species List, towards a Vegetation Survey for the Utility of Spider diversity as a Surrogate Measure to General Biodiversity*. Unpublished report, commissioned by the University of Venda, School of Environmental Sciences.
- HAHN, N.** (Specialist in trees and shrubs) 1994. C.K. Willis (ed.), *Ecological Baseline Survey, Matowane Dam*.
- HAHN, N.** 1992a. Application for Permit of collected Archaeological Artefacts from Little Leigh. National Monuments Council, Cape Town, South Africa.
- HAHN, N.** 1992b. Little Leigh rock shelter. *The Digging Stick* 9(2): 5–7.
- HAHN, N.** 1993. Plant Survey of the Louis Trichardt — Messina Power Line. *Louis Trichardt — Messina 132 Kraglyn, Omgewingsinvloedstudie*.
- HAHN, N.** 1994. *Tree list of the Soutpansberg*. Fantique Publishers, Pretoria.
- HAHN, N.** 1995. *Commiphoras* of the Soutpansberg. *Plantlife* 13: 16–18.
- HAHN, N.** 1997a. **Rubiaceae**. A new species of *Vangueria* from the Soutpansberg. *Bothalia* 27(1): 45–48.
- HAHN, N.** 1997b. *Rare and Endangered Flora of Tshikondeni*. In-house manuscript for Tshikondeni Mining Company (Pty) Ltd.
- HAHN, N.** 1997c. Plant diversity statistics of the Soutpansberg. *SABONET News* 2(3): 106–109.
- HAHN, N.** 1999a. Herbarium Soutpansbergensis. *PlantLife* 20: 32–32.
- HAHN, N.** 1999b. A new species of *Pavetta* from the Soutpansberg, South Africa. *Bothalia* 29(1): 107–109.
- HAHN, N.** 2000. Field Assessment of *Aloe vossii*, for assessing its IUCN Red Listing Criteria and to review the CITES status. Commissioned by the National Botanical Institute, Kistenbosch.
- HAHN, N.** 2002a. *Molozzi Trees & Shrubs*. In house manuscript for The Molozzi Trust.
- HAHN, N.** 2002b. A second species of *Brachystegia* for South Africa. *SABONET News* 7(2): 110.
- HAHN, N.** 2002c. Tshikondeni Botanical Hot Spot. *PlantLife* 27: 34–36.
- HAHN, N.** 2002d. *The Endemic Flora of the Soutpansberg*. M.Sc. thesis (Botany), University of Natal.

- HAHN, N.** 2003a. Botanical Diversity. In: *A First Synthesis of the Environmental, Biological & Cultural Assets of the Soutpansberg* p. 27–28. Soutpansberg—Limpopo Biosphere Initiative.
- HAHN, N.** 2003b. Endemic Flora. In: *A First Synthesis of the Environmental, Biological & Cultural Assets of the Soutpansberg* p. 29–33. Soutpansberg—Limpopo Biosphere Initiative.
- HAHN, N.** & Mavundza, S. 2005. *Plant Species List Towards a Vegetation Survey for the Utility of Spider diversity as a Surrogate Measure to General Biodiversity*. Unpublished report, commissioned by the University of Venda, School of Environmental Sciences.
- HAHN, N.** 2006a. *Floristic diversity of the Soutpansberg, Limpopo Province, South Africa*. PhD Thesis, University of Pretoria, Pretoria.
- HAHN, N.** 2006b. *Mapungubwe Cultural Landscape, Plant List*. Unpublished report.
- HAHN, N.** 2007a. *Goni Shaft (Tshikondeni) peripheral trees and shrubs*. Unpublished report, Subcontractor, Mananzi Sivil, Gunniting at Height.
- HAHN, N.** 2007b. *Western Soutpansberg Arachnid Transect Tree List*. Unpublished report, commissioned by the University of Venda, School of Environmental Sciences.

➤ **Co-author**

- CHE SSELET, P., HARTMANN, H.E.K, **HAHN, N.**, BURGOYNE, P. & SMITH, G.F. 1996. *Revision of Khadia — a Mesembryanthemaceae genus of ethnobotanical significance*. The South African Association of Botanist Year congress.
- CHE SSELET, P., HARTMANN, H.E.K, **HAHN, N.**, BURGOYNE, P., SMITH, G.F. 1998. Taxonomic notes on the genus *Khadia* (**Mesembryanthemaceae / Aizoaceae**). *Bothalia* 28(1): 25–33.
- MOSTERT, T.H.C. BREDE NKAMP, G.J., KLOPPER. H.L., VERWEY, C., MOSTERT, R.E. & **HAHN, N.** 2008. Major Vegetation Types of the Soutpansberg Conservancy and the Blouberg Nature Reserve, South Africa. *Koedoe* 50(1): 32–48.
- ROSMARIN, J., GAIGER, I. & **HAHN, N.** 1998. The Western Soutpansberg Conservancy, towards a proposed policy framework and implementation strategy. Unpublished report.
- TSHIVHANDEKANO, P.G., FOORD, S.H., **HAHN, H.** 2007. *Arachnid diversity along a North-south transect in the Soutpansberg: a proposed long-term monitoring site*. Poster presentation: 33rd Meeting of the Zoological Society of South Africa, “The sixth extinction – conserving zoological diversity”, in Potchefstroom, South Africa, 8-13 July.
- WEISSER, P. J., **HAHN, N.**, VAN DER WAAL, C., TSHISIKHAWE, P., & TODD, C. B. 2003. Vegetation. In: *A First Synthesis of the Environmental, Biological & Cultural Assets of the Soutpansberg* p. 24–26. Soutpansberg—Limpopo Biosphere Initiative.
- WINTER, P. & **HAHN, N.** 1999. *Khadia media*. *Aloe* 36(1): 16–19.

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- MÖSSMER, M. & WILLIS, C.K. 2000. Plant taxonomic expertise: an inventory for southern Africa. *Southern African Botanical Diversity Network Report* no. 10. SABONET, Pretoria.
- VAN WYK, A.E. & SMITH, G.F. 2001. *Regions of Floristic Endemism in South Africa* p. 134–139. Undaus Press, Hatfield South Africa.
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- R.R. KLOPPER & G.F. SMITH 2009. *Aloe hahnii*, a new species in the section *Pictae*, in the Soutpansberg Centre of Endemism, Limpopo Province, South Africa. *Bothalia* 39(1): 98–100.

Referees

- Prof. Abraham van Wyk, PhD, University of Pretoria Department of Plant Science, Curator of HGWJ Schweickerdt Herbarium, e-mail: braam.vanwyk@up.ac.za, tel: +27 12 4202545
- Prof. George Bredenkamp, PhD, University of Pretoria Department of Plant Science, e-mail: ecoagent@mweb.co.za, tel: +27 12 4203121.
- Prof. Gideon Smith, PhD, Chief Director, Research and Scientific Services, South African National Biodiversity Institute, e-mail: smithg@sanbi.org, tel: +27 12 843 5187.
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