

FLOWFORM WATER RESEARCH

1970 – 2007

A Collation of Research and Related Ideas

Published by
Healing Water Institute



FLOWFORM WATER RESEARCH 1970 – 2007

Part Six **Design Research Colleagues and Bibliography**

Editorial Group

Dr Joachim Schwuchow PhD
John Wilkes ARCA
Prof. Costantino Giorgetti Eng.
Iain Trousdell BA
Alison Trousdell BA

Copyright © 2008

Healing Water Foundation (UK)
Healing Water Institute Trust (NZ)

ISBN-9780-473142230

Published by the
Healing Water Institute

www.healingwaterinstitute.org.nz

All rights reserved.

No portion of this publication may be reproduced or distributed in any form or by any means, or stored in a database or retrieval system without prior written permission

Design Research Colleagues

“Through the contemplation of ever-creating Nature we make ourselves spiritually worthy of participating in her activities.”

Johann Wolfgang von Goethe 1749 - 1832

Adorjan, Tibor. MEng. Supplied Icosidodecahedron for research.

Alspach, Peter. MSc. Water quality research in New Zealand.

Baxter, Mark. A.R.I.B.A. Flowform design and installation. Australia

Brown, Stuart. PhD, Reading University agriculture researcher

Burka, Uwe. Flowform use in Biological Purification.

Charter, Simon. Project management and execution, Flowforms and Biological purification.

Collinson, Patrick. Waldorf class teacher and upper school science teacher.

Colquhoun, Margaret. PhD, Biology, Director 'Life Science Trust' Pishwanten, Scotland.

Courtney, Paul. PhD, Former Brighton University lecturer, now free-lance maths teacher, researcher, translator, consultant. Proj. Geom Group.

Cuthbertson, David. BSc Biophysics, scientific advisor for the Holleman Stichting, a European organisation supporting biological transmutation research. Proj. Geom Group.

Damon, Betsy. Environmental art and water treatment, Flowform design in Chengdu, China.

Dewdney, Rob. M.Sc. Earlier Research and Installation, New Zealand

Dreiseitl, Herbert. Design and Research Collation, Water Management and Urban Design and PLanning

Giorgetti, Costantino. Prof., Eng. Planning, Trieste University. Director Healing Water Institute UK

Goodwin, Pearl, Rev. Biology (embryology) lecturer.

Greene, Jennifer. Early use of Flowform series in Biological Water Treatment

Hecht, Chris. Development support, research collation.

Huese, Arjen. G, Teacher on the Biodynamic Organic Agriculture Training at Emerson College for the last five years and is doing some research on the effect of the four etheric forces on plant forms. Student Flowform research.

Hoffmann, Thomas, Eng. Hydrologist. Flowform design, planning management and execution.

Jarvis, Kevin. BSc electronic engineering, Technical director, Equipe Electronics - Video displays for simulation and VR. Proj. Geom Group.

Joiner, Andrew. Flowform Biological purification, Design, Iris Water company.

Jones, Chris. Projective Geometry Group

Keis, Hanna, Flowform production and installation. Design Research

Klingborg, Arne, Rudolf Steiner Seminarier, Järna. First major Flowform project initiator.

Liess, Christian. Prof. at the University of Konstanz, Germany. Retired. Advisor . Now involved at the Institut für Strömungswissenschaften.

Lord, Robert. Maths degree, Lasur painter, Institute colour scheme. Member of a Trust interested in supporting the Institute research.

Loyter, Orit. B.Sc. Biology, Upper School Science teacher, contributor Biodynamic Training at Emerson College. Flowform research.

Mann, Christopher. Entrepreneur. Flowform development and research financial support.

Monzies, Michael. Flowform Design and installation, France.

Mueller, Peter, Wasserwerkstatt Dortmund, production and installation; supported design research.

Nott, Richard. BD agriculture course, Emerson, '87-'88. BA social psychology '97. Proj. Geom Group.

Proctor, Peter. Biodynamic research and installations.

Provines, Ian. Prototyping design in stone and ceramics.

Raab, Rex, A.R.I.B.A Earlier project planning advisor.

Raeside, Nick. MSc Forest Management. Company Director, Chairman BD Ass. UK.

Sassoon, Judyth. PhD, A.R.C.S. Biology, University Research, Bern CH, Bath UK, Marine Biology, Palaeontology. Lecturer and Flowform research advisor.

Schikorr, Freya. Horticulture. Early Plant and Biodynamic research.

Schwenk, Wolfram. Institut für Strömungswissenschaften, Herrischried, Germany

Sedgman, Phil. Water treatment and effluent research, Australia.

Simmonds, Neil. teacher of Tai Chi. Member of Projective Geometry Group

Schwuchow, Joachim M. PhD, Engineering and Biology, Research on gravity responses in plants. HWI research collaborator.

Tighe, Martin. MSc Biochemistry

Thomas, Nick C. MIEE, MRAeS, C.ENG, Researcher, Projective Geometrician, Nettlestone Laboratory, Kings Langley, Herts, UK. HWI research collaborator.

Trousdell, Iain. BA, Dip Tchg, A.T.C.L, Flowform Designer, pioneer Agricultural Flowform uses, Waldorf teacher, director Healing Water Institute UK and NZ.

van Dijk, Paul. Flowform Design prototyping and development.

van Mansfeld, Jan Diek. Prof., Dr. Sc., Mondriaanlaan 67 6708, NK Wageningen, Netherlands. Warmonderhof research project.

Weidmann, Nick. BSc (secretary), Flowform Designer, Healing Water Institute UK

Wells, Nigel. Flowform Designer, agricultural and educational applications. Virbela Studio, Sweden.

Wilkes, John. A.R.C.A (Hons) Flowform concept originator. Director Flowform Design Ltd., and Healing Water Institute UK

Wilkes, Thomas. Flowform ceramic production.

Bibliography

“We must learn to see in Nature not only what is ready made
(and therefore dying) but also what is new becoming in her life.
We have to liberate imagination from the bondage
of the finished forms of space.”

George Adams 1894 – 1963

Adams, George (1965) *Physical and Ethereal Spaces*. Rudolf Steiner Press.
The Garden City Press Limited. Letchworth. Hertfordshire. England

Adams, George and Olive Whicher (1979) *The Plant Between Sun and Earth*.
Verlag Freies Geistesleben. Stuttgart.

Alexandersson, Olof (1982) *Living Water*. Turnstone Press Limited.
Wellingborough. Northamptonshire.

Alleslev, Flemming (1987) *Naturlig Vandbehandling*, Biologisk
Projektarbejde, Århus Universitet

Baker, R. (1983) *Nature* 301, 78

Barker, Janet (2005) *Steigbilder, Capillary Dynamolysis, An imaging method*,
Ita Wegmann Klinik, Arlesheim, Switzerland

Bartholomew, Alick (2003) *Hidden Nature. The Startling Insights of Viktor
Schauberger*. Floris Books. Edinburgh

Belon, P, J Cumps, M Ennis, PF Mannaioni, M Roberfroid, J Sainte-Laudy, FA
Wiegant (1999) *Inhibition of human basophil degranulation by successive
histamine dilutions: results of a European multi-centre trial*. *Inflammation
Research* 48(13):17-18

Belon, P, J Cumps, M Ennis, PF Mannaioni, M Roberfroid, J Sainte-Laudy, FA
Wiegant (2004) *Histamine dilutions modulate basophil activation*.
Inflammation Research 53(5):181-8

Benveniste, J (1998) *From Water Memory Effects to Digital Biology*,
<http://www.digibio.com>

Block EF (2004) *The Whole Is Greater Than The Sum Of Its Parts*. *Journal of
Bioelectromagnetic Medicine*, Vol.10

Bohm, David (1980) *Wholeness and the Implicate Order*. Routledge and Kegan Paul, London
Bortoft, Henri (1996) *The Wholeness of Nature – Goethe’s Way of Science*. Floris Books. Edinburgh

Briggs, John and David Peat (1984) *Looking Glass Universe – The Emerging Science of Wholeness*. William Collins Sons & Co. Ltd, Glasgow

Brückmann Sabine, Franz-Theo Gottwald, Michael Glück, Alexandra Hoesch, Ernstfried Prade, Hans-Dirk Struwe (1992) *Lebendiges Wasser*, Schweisfurth-Stiftung

Capra, Fritjof (1991) *The Tao of Physics*. Flamingo. Caledonian International Book Manufacturing Ltd. Glasgow

Chapman DS, PR Critchlow (1967) *Formation of Vortex Rings from Falling Drops*. J. Fluid Mech. 29: 177-185

Coats, Callum (1996) *Living Energies*. Gateway Books, Bath, UK

Davenas, E, F Beauvais, J Arnara, M Oberbaum, B Robinzon, A Miadonna, A Tedeschi, B Pomeranz, P Fortner, P Belon, J Sainte-Laudy, B Poitevin & J Benveniste (1988) *Human basophil degranulation triggered by very dilute antiserum against IgE*. Nature 333(6176): 816-18

De Jonge, Gerdien B (1982) *Oriënterend onderzoek naar de invloed van stromingsbewegingen in zgn. Wirbela Flowforms op het zelfreinigend vermogen van organisch belast slotwater*, Onderzoeksverslag 1978-81, Wirbela Waterprojekt Warmonderhof, Kerk-Avezaath

Del Giudice Emilio, Giuliano Preparata (1994) *Coherent dynamics in water as a possible explanation of biological membranes formation*. J of Biol Phys 20: 105-116

Del Giudice Emilio, Giuliano Preparata, Giuseppe Vitiello (1988) *Water as a Free Electric Dipole Laser*. Phys Rev Lett 61: 1085 - 1088

Edwards, Lawrence (1982) *The Field of Form*. Floris Books. Edinburgh

Edwards, Lawrence (1985) *Projective Geometry*. Rudolf Steiner Institute. Phoenixville. Pennsylvania

Edwards, Lawrence (1993) *The Vortex of Life. Nature’s Patterns in Space and Time*. Floris Books. Edinburgh

Emoto, Masaru (1999) *The Messages from Water*, Hado Kyoikusha Co., Tokyo, Japan

- Endres, Klaus-Peter and Wolfgang Schad (2002) *Moon Rhythms in Nature – How Lunar Cycles Affect Living Organisms*. Floris Books. Edinburgh
- Engqvist, Magda (1970) *Gestaltkräfte des Lebendigen. Die Kupferchlorid-Kristallisation, eine Methode zur Erfassung biologischer Veränderungen pflanzlicher Substanzen*. Vittorio Klostermann, Frankfurt, Germany
- Engqvist, Magda (1977) *Die Steigbildmethode, Ein Indikator für Lebensprozesse in der Pflanze*, Vittorio Klostermann, Frankfurt, Germany
- Epstein, Irving R (2007) *Can Droplets and Bubbles Think?* Science 315 (5813): 775-776
- Fuerstman Michael J, Piotr Garstecki, George M. Whitesides (2007) *Coding / Decoding and Reversibility of Droplet Trains in Microfluidic Networks*. Science 315 (5813): 828
- Fyfe, Agnes (1967) *Moon and Plant, Capillary Dynamic Studies*, Society for Cancer Research, Arlesheim, Switzerland
- Geiger Wolfgang, Herbert Dreiseitl (1995) *Neue Wege für das Regenwasser, Handbuch zum Rückhalt und zur Versickerung von Regenwasser in Baugebieten*. R. Oldenbourg Verlag GmbH, München, Germany
- Goethe, Johann Wolfgang von (1993) *The Metamorphosis of Plants*. Bio-Dynamic Farming & Gardening Association. New York
- Gross, Peter (2000a) *Geniales Wunderwesen Wasser*. <http://www.wasserinformationen.de/wasserinformationen/erfahrungen/index.html>
- Gross, Peter (2000b) *Wasser*. <http://www.wasserinformationen.de/wasserinformationen/erfahrungen/index.html>
- Hagel, Ingo (1983) *Unbehandeltes, Flowform-behandeltes und gepumptes Wasser im Pflanzenversuch*, Emerson College, Forest Row, Great Britain
- Hatschek, Emil (1919) *A Study of the Forms Assumed by Drops and Vortices of a Gelatinising Liquid in Various Coagulating Solutions*. Proc. Roy. Soc. Ser. A, Vol. 95 No. 669: 303-316
- Hoesch, Alexandra et al. (1992) *Lebendiges Wasser [Living Water]*. Schweisfurth-Stiftung. Munich. Germany
- Jahnke, Dittmar (1993) *Sensibles Wasser Nr. 2, Morphologische Typisierung von Tropfenbildversuchen und Tropfenbildern, und Morphologische Unterscheidungs-merkmale für die Auswertung von Wasserqualitäts-Untersuchungen mit der Tropfenbildmethode*, Verein für Bewegungsforschung e.V., Institut für Strömungswissenschaften, Herrischried, Germany

Kilner, Philip (1984) *The Single Cavity Flowform*. The Goetheanum Vol.5, No.1. Dornach. Switzerland

Kolisko, Eugen and Lily (1978) *Agriculture of Tomorrow*. Kolisko Archive Publishing, Bournemouth, England

Kristiansen UR, HE Berntsen, T Lunde, C Thaulow, A Rørdal (1993) *Sound Measurements on a Sevenfold Flowform*. The Water Research Group in Trondheim, Norwegian Hydrodynamic Laboratories, University of Trondheim, Norway.

Kröplin, Bernd (ed.) (2001) *Welt im Tropfen - Gedächtnis- und Gedankenformen im Wasser*. Gutesbuchverlag ISD. Universität Stuttgart. Germany

Lauterwasser, Alexander (2003) *Wasser Klang Bilder*. AT Verlag. Aarau - München. Germany

Ludwig, Wolfgang (1991) *Alle Lebensprozesse sind unmittelbar mit dem Wasser verbunden. Daher kommt dem Wasser in der Umweltproblematik eine besondere Stellung zu*. In: Talkenberger, Peter P., Treven, Michael: *Umweltmedizin - Ein neues Zeitalter der Gesundheit*, Möwe Verlag, Idstein, pp 71-79

Marrin, West (2002) *Universal Water. The Ancient Wisdom and Scientific Theory of Water*. Inner Ocean Publishing Inc., Maui, Hawaii

Mæhlum, Trond (1991) *Økologisk Avløpsrensing, 1. Bruk av konstruerte våtmarker for rensing av avløpsvann i Norge, 2. Effekten av strømningsformer (Flowforms) for lufting biodammer om vinteren, 3. Wastewater treatment by constructed wetlands in Norwegian climate: Pretreatment and optimal design*, Jordforsk, Norges Landbrukshøgskole Ås

Nickel, Erwin (1968) *Die Reproduzierbarkeit der sogenannten "empfindlichen Kupferchloridkristallisation"*, Bulletin der Naturforschenden Gesellschaft Freiburg, Bull. Soc. Frib. Sc. Nat. Vol.57, Fasc. II, Universitätsverlag Freiburg, Switzerland

Paul JB, CP Collier, RJ Saykally (1997) *Direct Measurement of Water Cluster Concentrations by Infrared Cavity Ringdown Laser Absorption Spectroscopy*. J.Phys. Chem. A 101: 5211-5214

Pearsaal, Joanna and Bryan Innes (2000) *Natural Swimming Pool*. Natural information. Newsletter for the Permaculture Institute of NZ. Auckland. New Zealand

Peitgen, Heinz-Otto, Hartmut Jürgens, Dietmar Saupe (1992a) *Fractals for the Classroom Part 1: Introduction to Fractals and Chaos*. Springer-Verlag. Berlin -Heidelberg - New York -Tokyo

Peitgen, Heinz-Otto, Hartmut Jürgens, Dietmar Saupe (1992b) *Fractals for the Classroom Part 2: Complex Systems and Mandelbrot Set*. Springer-Verlag. Berlin -Heidelberg - New York -Tokyo

Peitgen, Heinz-Otto and Peter H. Richter (1986) *The Beauty of Fractals: images of complex dynamical systems*. Springer-Verlag. Berlin -Heidelberg - New York -Tokyo

Peitgen, Heinz-Otto and Dietmar Saupe, (eds) (1988) *The Science of Fractal Images*. Springer-Verlag. Berlin -Heidelberg - New York -Tokyo

Pfeiffer, Ehrenfried (1931) *Studium von Formkräften an Kristallisationen*. Dornach. Schweiz

Pfeiffer, Ehrenfried (1935) *Empfindliche Kristallisationen als Nachweis von Formkräften im Blut*. Emil Weises Verlag. Dresden

Pollack, Gerald H (2001) *Cells, Gels and the Engines of Life*, Ebner and Sons, Seattle

Prakash, Manu and Neil Gershenfeld (2007) *Microfluidic Bubble Logic*. Science 315 (5813): 832

Presti, D & Pettgrew, J (1980) Nature 285, 99

Prigogine, Ilya (1980) *From Being to Becoming: Time and Complexity in the Physical Sciences*. W.H. Freeman and Co. San Francisco

Proctor, Peter (1989) *Biodynamics, A New Direction in Farming and Gardening in New Zealand* Random House

Proctor, Peter (1997) *Grasp the Nettle*. Random House

Rasmus, Jansson (1998) *Dowsing: Science or Humbug?* (revised Jan 1999)

Rocard, Y (1981) La Recherche 12, 792

Rogers WB (1858) *On the Formation of Rotating Rings by Air and Liquids under Certain Conditions of Discharge*. Am. J. Sci. Arts. Sec. Ser. 26: 246-58

Schauberger, Viktor (1955) *Implosion statt Explosion*. In: *Implosion. Biotechnische Nachrichten*. Verein für Implosionsforschung und Anwendung e.V., Zell a.H., Germany, Sept 2006, Vol. 153: 7-20

Schauberger, Viktor (1998a) *Nature as Teacher – New Principles in the Working of Nature*. Gateway Books, Bath, U.K.

Schauberger, Viktor (1998b) *The Water Wizard – The Extraordinary Properties of Natural Water*. Gateway Books, Bath, U.K.

Schauberger, Viktor (2000) *The Energy Evolution – Harnessing Free Energy From Nature*. Gateway. Gill & Macmillan Ltd. Dublin

Schiff, Michel (1995) *The Memory of Water*. Thorsons. Hammersmith. London.

Schikorr, Freya (1990) *Wheat Germination Responses To Flowform Treated Water*, Star and Furrow 74: 15-22

Schikorr, Freya (1994) *A Comparison Of Different Methods Of Stirring The Biodynamic Field Preparations*, Star and Furrow 82: 12-16

Schmidt, Georg W (1984) *Aufbau lebensfähiger Naturbereiche als Gestaltungsaufgabe in bedrohten oder zerstörten Landschaften*. Lebendige Erde Nr. 2, Darmstadt, p. 54-65

Schneider, Michael S (1995) *Constructing the Universe – The Mathematical Archetypes of Nature, Art and Science*. Harper Perennial. New York.

Schönberger Christian, Christian Liess (1995) *Wirksamkeit der Flowforms, Zusammenstellung und Auswertung der bis 1994 durchgeführten Untersuchungen über die Wirkung der Virbela-Flowforms*, Atelier Dreiseitl, Überlingen, Germany

Schwenk, Theodor (1967) *Bewegungsformen des Wassers*, Verlag Freies Geistesleben, Stuttgart, Germany

Schwenk, Theodor (1989) *Water – The Element of Life*. Anthroposophic Press. Bell's Pond. Hudson. New York.

Schwenk, Theodor (1996) *Sensitive Chaos. The Creation of Flowing Forms in Water and Air*. revised 2nd ed. Rudolf Steiner Press. London. (First edition: Das Sensible Chaos 1962, Verlag Freies Geistesleben, German)

Schwenk, Wolfram (ed.) (2001) *Sensibles Wasser Nr. 6, Schritte zur positiven Charakterisierung der Wassers als Lebensvermittler*. Verein für Bewegungsforschung e.V., Institut für Strömungswissenschaften, Herrischried, Germany

Seamon, David and Arthur Zajonc (eds.) (1998) *Goethe's Way of Science: A Phenomenology of Nature*. State University of New York Press.

Selawry, A and O (1957) *Die Kupferchlorid-Kristallisation in Naturwissenschaft und Medizin*, Gustav Fischer Verlag, Stuttgart, Germany

Sernbo Krister, Lars Fredlund (1991) *Avloppsbehandling i biologiska dammar*, Järna

Sheldrake, Rupert (1988) *The Presence of the Past*. Hartnolls Limited, Bodmin, Great Britain

Smith, CW (1987) *Electromagnetic Effects in Humans*, in '*Biological Coherence and Response to External Stimuli*', Springer-Verlag, Berlin

Smith, Howard J (1974) *A Study of Some of the Parameters Involved in the Drop Picture Method*. Bericht 111/1974. Max-Planck-Institut für Strömungsforschung. Göttingen.

Smith, Howard J (1975) *The Hydrodynamic and Physico-Chemical Basis of the Drop Picture Method*. Bericht 8/1975. Max-Planck-Institut für Strömungsforschung. Göttingen.

Spencer, Tod (1995) *A Study of the Effectiveness of Flowforms and their Suitability for Greywater Recycling*. Integrated Project in Conservation Technology, Southern Cross University, Australia

Steiner, Rudolf (1938) *The Agricultural Course*. Koberwitz, Silesia, 7th to 16th June 1924. Rudolf Steiner Publishing Co., London.

Steiner, Rudolf (1975) *Spiritual Science and Medicine*. Lectures in Dornach from 21st March to 9th April 1920. Rudolf Steiner Publishing Co., London.

Steiner, Rudolf (2000) *Nature's Open Secret: Introductions to Goethe's Scientific Writings*. Rudolf Steiner Press. London

Strid, Martin (1984) *Rhythmisk Strömning – En Studie av Virbela Flödesformer*. Tekniska Högskolan i Luleå. Examensarbete. Luleå. Sweden.

Strube, Jürgen and Stolz, Peter (1999) *Verbesserte Wasserqualität zum Brotbacken durch simulierten Bergbach mit Flowformen*. [Improved quality of water for baking bread] Dipperz. Kwalis Qualitätsforschung. Fulda.

Szent-Gyorgyi, A (1988) *To See What No One Has Thought*, Biological Bulletin 175: 191-241

Tebbut THY (1992) *Principles of Water Quality Control*. Pergamon Press. Oxford

Thomas, Nick C (1983) *Flowform Rhythms*. Science Forum No.4: 16-19. Science Group of the Anthroposophical Society in Great Britain.

Thompson, D'Arcy (1942) *On Growth and Form*. Cambridge University Press. Cambridge.

Thomson JJ, HF Newall (1885) *On the Formation of Vortex Rings by Drops Falling into Liquids, and some Allied Phenomena*. Proc. Roy. Soc. 39: 417

Thun, Maria (2003) *The Biodynamic Sowing and Planting Calendar*. Floris Books. Edinburgh.

Thun, Maria and Matthias (2004) *The Biodynamic Sowing and Planting Calendar*. Floris Books. Edinburgh.

Thun, Maria and Matthias (2006) *The Biodynamic Sowing and Planting Calendar*. Floris Books. Edinburgh.

Tingstad, Annette (2002) *Quality and Method. Rising Pictures in Evaluation of Food Quality*. Gads Forlag. Copenhagen.

Trousdell, Iain (1991) *Virbela Flowforms & Biodynamic Preparations Stirring*, Hastings, NZ

Trousdell, Iain (1989) *Flowform Design Types and Oxygenation. Healing Water Institute NZ proceedings*. Hastings, NZ

Van Mansfeld JD (1986) *To Whom it May Concern*, Warmonderhof, Kerk-Avezaath, Holland

Wagenaar, Walter (1984) *Beweging: Sturing In Levensprocessen van het Water? Wirbela Waterprojekt Warmonderhof*. Onderzoeksverslag. Kerk-Avezaath.

Wilkens, Andreas, Michael Jacobi, Wolfram Schwenk (2005) *Understanding Water*. Floris Books. Edinburgh.

Wilkes, John (1993) *Flow Design Research Relating to Flowforms*. in: *Chaos, Rhythm and Flow in Nature*. The Golden Blade 46. Floris Books. Edinburgh.

Wilkes, John (2001) *Water as a Mediator for Life*. In: *Elemente der Naturwissenschaft*, Naturwissenschaftliche Sektion am Goetheanum, Dornach, Switzerland, Vol.74: 34-51

Wilkes, John (2003) *Flowforms: The Rhythmic Power of Water*, Floris Books, Edinburgh (2nd Edition 2005)

Worrall, Peter (1992) *The Reed Bed Revolution*. Landscape Design 208: 16-18