



Florianne Koechlin
PLANT WHISPERS

A journey through
new realms of science

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Translated from the German

by Thomas Rippel

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The author

Florianne Koechlin, born 1948, is trained in biology and chemistry and authored and edited several books on plant behaviour: *Zellgeflüster*, *PflanzenPalaver*, *Mozart und die List der Hirse*, and *Jenseits der Blattränder*. She made many interviews with researchers, farmers, philosophers, and scientists who are working to unravel the secrets of plants. In her role as a former member of the Federal Ethics Committee on Non-Human Biotechnology (ECNH), she has extensively discussed the topic about how the new insights could affect our relationships to plants. www.blaueninstitut.ch.

The translator

Thomas Rippel, born 1988, studied environmental sciences at the University of Melbourne and international business at the University of Nottingham Ningbo China. In 2012 he started a vocational training to become a biodynamic farmer. He is a writer on sustainable agriculture on

his blog *SwissBioFarmer.com*, and he published articles and made translations of academic papers. Thomas Rippel currently resides in Zug, Switzerland. He was assisted by Mary Ann Richardson (MPH, DrPH).

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Introduction

Plants use fragrances to communicate above and below ground. With a language of “fragrances”, they warn each other of pests and drought and purposefully attract beneficial insects. They coordinate their own behaviour and engage in lively relationships with the environment and peers. Not only do plants support relatives, harass strangers, and make alliances, they also learn from and remember their experiences. Information and nutrients are exchanged among plants through a vast, underground root and fungal networks – a plant internet of unimaginable size.

This fantastic world of plants has drawn me under its spell and is my reason for embarking on a journey to find people working to uncover the secrets of plants.

I have met researchers studying the striking abilities of plants for language by analyzing plant hormones and fragrances. Following rigorous standards of academia, their experiments with leaf-eating robots have identified over one hundred fragrances used in communication by the lima bean. I visited researchers examining the complex relationship networks in soil. Their evidence shows that the millet does in fact feed neighbouring flax plants with sugar compounds. Other researchers discovered that plants respond to sound waves produced by chewing caterpillars and defend themselves. Are plants really capable of listening?

Many scientists regard the plant as a type of biological automaton with pre-programmed, genetically determined reactions. With many recent discoveries, however, such explanations can no longer suffice. A plant is more than an automaton, and we are just at the beginning of this journey to find out just how much more.

New findings are slowly filling the gaps in our ecologically based world view. This suggests that everything is in one way or another linked with everything else; nothing works in an isolated way; and genes do not in

fact play an overarching role in the processes of life. Thanks to unprejudiced observation and improved analytical tools and experiments, we are gaining insights into the infinitely complex and dynamic networks that make up life.

But what is the point of knowing that all of us – plants, animals, and humans – are involved in co-evolutionary processes and interdependencies? What does this idea of interconnectedness mean for agriculture, now facing enormous challenges with climate extremes, eroded soils, and finite resources for increasing human demands?

At the end of my journey, one question arose: Why are plants valued so differently from animals in our society? At least “higher” animals are no longer viewed as objects. They have certain rights, and regulations are in place for species-appropriate animal husbandry. Do not plants deserve respect and rights also?

This book contains a collection of interviews and articles from my German books *PflanzenPalaver* (2008), *Mozart und die List der Hirse* (2012), and *Jenseits der Blattränder* (2014), as well as a few new texts.

Florianne Koechlin, October 2015