

The Language of Nature

By James Lee and Jannebeth Röell

In his book *About Formative Forces in the Plant World*, Dick van Romunde discusses the spiritual collaboration between Johann Wolfgang von Goethe, who united art and beauty with a rigorous scientific approach to observing nature, and Rudolf Steiner, who took on the task to provide Goethe's scientific method with a philosophical foundation. Van Romunde's major contribution is to take his readers on a journey of exploration through the plant world, teaching them to speak the language of nature along the way. Our experience in nature has become more meaningful through the study of this work. On a professional level, our work as an environmental engineer and as anthroposophical nurse has been noticeably enlivened and augmented by the new capacities we have developed along this path.

In the darkness of the earth, the seed is awakened from its dormant slumber through the influence of water, warmth, and the forces that will facilitate growth and form. The plant's stem quickly springs out of the earth toward light as roots push downward toward the center of the earth. This process of expansion and orientation occurs through the interaction of elemental forces. The effect of moisture on a plant's growth can be observed by placing the leaf of a Bryophyllum on a wet paper towel. Offsets will soon form at the edge of the leaf and appear as small examples of the mother plant, with earth seeking roots sprouting below. Similarly, the familiar bean quickly sprouts when brought into a moist environment.

Water can also be seen to influence the *form* of a plant, notably the shape of the leaf. Forces interact through water and air to influence the creation of leaf forms, which have either a spreading or a pointed gesture, with myriad variations in between. Take the example of the Giant Water Lily. Its round leaf is connected at the center to a stem from which veins radiate in all directions to the margin. The gesture of this palmate or radiant veined leaf form is like the upwelling of water from a spring, spreading outward from the source. The formative principle here described may be referred to as a spreading force. The Giant Water Lily is dominated by swelling forces, the materializing effect of which can be experienced in its large round form.

Contrast this with the Chive, which has a narrow, tube-like leaf bearing a strong kinship with a stem. The veins of this leaf are totally parallel and go in the direction of the pointed tip. The stem of the garden onion has an enlarged surface that enables it to produce greater amounts of carbohydrates through the process of photosynthesis. Both of these parallel veined examples are typical of monocotyledons and show the effect of what may be called a suctioning force. Suctioning forces have the tendency to dematerialize by diminishing surface area.

A relation can be seen between the watery swelling forces that form the leaf of the Giant Water Lily and the suctioning forces that influence the formation of the Chive. A large variety of leaf forms result when these formative forces interact. Between the extremes

are a variety of leaf shapes that exhibit the formative influence of both spreading and suctioning forces. This play between watery and airy forces results in leaf-shape transformations that can easily be observed during a walk through nature. Take the Yellow Pond Lily; its more oval shape and eccentric placement of the petiole point to an influence of the suctioning force that is not so strongly present in the Giant Water Lily. The leaf of the Plantain Lily is parallel veined like the Chive, but the spreading forces have considerably widened its leaf blade.

A plant's leaves are quickened in the power of the air's light-filled presence. The first leaves are simple and usually without noteworthy definition. Some plants, such as rosemary and lavender, stay at this phase, and the leaves higher on the stem look similar to those lower down. Other plants undergo an evolution in form, with leaves at different levels along the stem exhibiting considerable differences in shape. The compound lower leaves of the Burnett Saxifrage, for example, are composed of feather veined leaflets that have a toothed margin to which the side veins are directed. The higher compound leaves, in contrast, have diminished surface areas and such deep indentations that the segments are inclined to become compound as well. The surface area of the small grass-like, slender leaf segments at the highest levels of the plant has diminished even further. In this example we can observe leaf transformations from the moist zone just above the roots to the drier zone just below the flower.

Higher on the plant, through the might of the sun, a fire process progressively transforms the petals of the flower into stamens so a fruiting process can begin. Warmth, which transforms the sap of the plant, is needed for the creation of the finer substances that are the material of the flower petals and the basis for the play of color and fragrance. It is from this warmth that the genesis of the new plant begins, and the plant mostly draws warmth from the radiance of the air. The nectar that is treasured by the pollinating insects also belongs to these watery substances, and the bees make honey from it. This high level of refining and ennobling of substance can only be achieved through the intake of warmth. The gesture of the form in the flower petals shows in general how a plant opens itself to new influences from the outer world. It is through fire that the process of renewal takes place.

These insights into the transformations of leaf, stem, and flower result from careful observation of the forms we encounter in nature. An intimate and lucid awareness of the nature of a plant can be attained through continued observation, unencumbered by questions of the intellect about causes or other conceptual associations. This first, phenomenological step can lead one to a second, where the experience is deepened through the activity of creating an accurate inner image of what was observed. Such an imagination can be enhanced by repeated meditative surrender to the memory image. Through this inner work, the plant is able to tell something about itself, something Goethe called the "gesture language" of nature.

Every plant carries the leaves belonging to its own being. Its formative forces can only be taken up in our consciousness when we first carefully and patiently observe the plant and then repeatedly contemplate on the acquired image for some time. Through this method,

a soul warmth arises in our feeling life through which the plant with its leaves becomes dear to us. Only then do we begin to approach the image of the formative forces. The leaf itself begins to give us a picture of its formative forces. An exclusively schematized approach such as we find today in mainstream science does not allow this process to occur. In developing a phenomenological approach to plants, a schematic presentation only becomes meaningful at the end of contemplation, not at the beginning.

Through all this, water is the selfless carrier of the forces in nature. Water mobilizes and transports minerals into the realm of life, where the forces carried by the air stimulate the process of growth and reproduction. On a world scale, plants take up and transpire vast quantities of water, discharging ennobled seeds of the hydrologic cycle that will distribute vitality across the earth wherever they may fall.