Water as an open system

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Water is by nature formless and passive, and only shows its particular qualities when interacting with its surroundings. These qualities constitute its significance in the context of nature and teach us to handle water correctly.

Water has become a museum exhibit recently. This gives me pause for thought, as generally speaking museums concern themselves with things that are not (any longer) part of people's everyday experience. And now water in its natural diversity falls into this category, which for me is eloquent evidence of man's alienation from the elemental basis of his life.

We banish water from our environment and allow it to appear for certain purposes only. And so we only perceive it out of context, in specific functions: as a medium between tap and sink, as a drink in a bottle, as rain in the street, as sewage in a sewer, as an attraction in a museum, and in recent years as a flood as well. The links, common to all, archetypal, water's context and its significance in nature are foreign to us. And yet we are talking about the most important basis of our existence, which cannot be replaced by anything else – and not about any old raw material or cultural factor.

Deliberately drawing attention to water has become a cultural activity that would have been difficult to imagine in earlier days. The following remarks about some of water's characteristics are offered to this end.

When trying to describe water using everyday concepts we are immediately confronted with an unexpected problem: as a liquid, water has no shape of its own. It is formless and unconfined, has no hardness or sound of its own – not metallic, not wooden, not bright, not dull. It also has no colour of its own, no smell, no taste of its own.

We also cannot also understand water fully with our five senses: all these can tell us is what it is not and what it doesn't have. And so just as it runs away between our fingers it runs away between our definitions. This is a challenge to reflect and to rethink.

No shape of its own: If water is placed in a container it fills it up and adopts its shape. At the top it always ends as a free waterlevel that adjusts itself to the parallel with the ideal horizon, the surface of the earth. It adapts to its surroundings, down to its very form. If you tilt the vessel, the surface of the water remains horizontal – unlike fixed bodies, whose form is retained when they are twisted and turned. And so for water its situation, its equilibrium is more important that its form – when it is released, it again tries to create a horizontal surface.

No hardness of its own: Water cannot be polished. But you can submerge yourself in it without resistance or throw objects like stones into it. It gives way, accepts these objects and surrounds them.

No sound of its own: When pouring water into a tall glass we notice that the colour and pitch of the sound depend on how full the glass is, in other words on the air-space in the cavity. This also applies to the plashing, murmuring and glugging sound of a brook.

No taste of its own: And yet it is only the moist film of water on our tongues and in our noses that conveys all the nuances to us. We cannot smell or taste anything if our tongue and nose dry up.

Everything that comes into being or passes away, everything that is combined or separated as a material in nature does so only with the aid of water: substances dissolve in it. 'Substances can have an effect only in solution' could be a free re-statement of an old chemical principle. All natural management of substances lives with and on water: in the atmosphere, in the ground, in rocks, and in the waters themselves; in living creatures in breathing and feeding, excretion, regulation, growth, regeneration and reproduction. There is no life without water. Water always mediates, without itself being entirely subsumed in the products of the reactions. It is there to show other things to their best advantage and to convey other things.

As a chemical combination of hydrogen and oxygen, water is defined as H_2O. But pure H_2O does not occur in nature, and not even in the laboratory: in its pure chemical form water is such a powerful solvent that it immediately combines with other substances at the moment it comes into being and dissolves and absorbs at least traces of these. Even the substance we call pure water is always more than H_2O – because it is always open to its surroundings, and is always interacting with them. This is why it is so vulnerable and so in need of protection.

If substances go into solution or are watered down they lose their own form and spatial confinement and gradually fill – together with all the other substances dissolved in it – the whole spatial content of the water that is dissolving them. In their dry and solid form they were distinct from each other within their own forms; now these limitations are lifted and the substances can develop their functional chemical qualities and enter into intimate relationships with each other. In the course of this they adopt an almost weightless condition of floating in the water. Weight loss as a result of buoyancy – divers are always disoriented by the equal pressure from all directions when under water – means being exposed to forces coming from all directions in the surrounding area, a universal balance of forces. Water in water is in this universally open condition.

Running water is a material continuum. It behaves as a coherent whole, not as a material made up of individual par-