

Formveränderungen reifender Mistelbeeren

Heidi Flückiger, Stephan Baumgartner

Path curves are fundamental constructions of projective geometry. They might also serve as single-parametric archetypal forms in the plant and animal kingdom. This hypothesis is based on the observation that a large variety of buds, cones, and eggs show a striking similarity to path curves. The outline of mistletoe (*Viscum album* L.) berries also follows a path curve geometry.

We investigated temporal changes in the shape of mistletoe berries by means of empirical determination of the corresponding path curve form parameter λ . Periods of observation reported here were several months in the years 1995, 1997 and 1998.

The existing hypothesis of a correlation of the form parameter λ with alignments of the moon with other planets was falsified. Correlation with various meteorological factors or with solar activity was also not found.

In contrast, a tentative hypothesis of a correlation between the shape of mistletoe berries and the position of the moon in the zodiac, based on the results of the year 1995, was verified in two successive years (1997 and 1998). It seems as if the λ value increases if the moon is situated in the astronomical zodiac signs Gemini, Cancer, Libra, Scorpio, Aquarius and Pisces ('Air' and 'Water' signs). Correspondingly, a position in the signs of Aries, Taurus, Leo, Virgo, Sagittarius and Capricorn ('Fire' and 'Earth' signs) is correlated with a decrease of the λ value. The results warrant further investigations.

Steigbilder mit Metallsalzlösungen nach Lili Kolisko – Ein Erfahrungsbericht mit Untersuchung der experimentellen Bedingungen

Václav Závěský

From capillary dynamolysis experiments with metal salt solutions, Lili Kolisko presented proof in several of her publications of the effect of planetary forces. Our difficulties with repeating these experiments prompted us to examine the experimental conditions. We focused our attention primarily on the aqueous composition of silver nitrate and iron(II) sulphate with or without additives, as these salts were used by Lili Kolisko to obtain her impressive series of capillary dynamolysis pictures. The patterns on the filter paper are formed by silver precipitates. The latter arise during the chemical reaction between silver nitrate and iron(II) sulphate. We observed that the patterns in the pictures, whose variations had been attributed to the effect of cosmic forces, are influenced by many physical and chemical factors. This is connected with the complexity of the reaction which is catalytic, photochemical and colloidal in nature. This makes it extremely sensitive and the experiments on filter paper can neither be standardised nor performed with controls. Such unmanageable experimental conditions bring into question whether they are suitable as proof, because the cosmic influences under investigation are indistinguishable from the terrestrial.

Bewegte Bilder – Bedeutungswelt zweier Wiesenfalter

Daniel Kuster, Johannes Wirz

Butterflies are fascinating creatures. Although most of us know little about their biological task in biotopes, they are greatly admired for their obvious contribution to the ensoulment of landscapes. What exactly does this concept mean? In the present study an attempt was made

to approach these animals by a variety of methods. In particular, single animal observations of the activities from two species living in extensively used grasslands, the Mazarine Blue (*C. semiargus*) and the Marbled White (*M. galathea*), were converted into ethochronograms, which allow for a clear distinction between frequent versus rare behaviours and reveal patterns of sequential activities that are species specific, as well as in unison with the particular environments. The results presented provide first steps towards the elucidation of the concept of ensoulment. It will be shown that the elaboration of spaces of soul activity (Seelentätigkeitsräume) by single species reveal their organ-like character and that their subsequent integration contributes to the whole atmosphere of grasslands in a way similar to the way instruments do in an orchestra, each contributing to the whole experience (Gesamterlebnis) of a symphony.

Verstehen verstehen

Peter Buck

In vol. 73 of this journal Johannes Köhl (2000), with reference to Rudolf Steiner's so-called Bologna lecture, described, how he experienced the 'I' when studying the behaviour of a gyroscope. He explicitly formulated the objective of his study: "not only to understand [the gyroscope] conceptually, but to understand in an experiencing manner (erlebend nachvollziehen)". As I failed to achieve this objective, I took the opportunity to produce what is called a 'phenomenographic analysis' of this process of non-understanding.

(Phenomenography is a recognised method in phenomenologic research of learning processes). As the method applied here of chaining non-understanding to understanding (Buck et al. 2002) may lead to a wider intersubjective understanding of both the gyroscope and the issue raised in Steiner's Bologna lecture, it was considered worthwhile publishing the results in this journal.

Since in phenomenography, understanding can only be investigated indirectly from texts, (written) texts by Steiner, Köhl, Feynman and the author were taken as a basis for describing the content and process of individual understanding of both the gyroscope and Steiner's statement. The discrepancy in Köhl's and Buck's understanding turned out to lie in Köhl's explanatory approach combined with his use of traditional scientific (physical) terminology and methods (which usually show a tendency towards eliminating individual experience) where Buck had expected a phenomenal descriptive approach. A second discrepancy turned out to lie in the phenomenon treated: whereas Köhl focused on the phenomenon 'behaviour of the gyroscope' (which is an abstract phenomenon), Buck had expected the 'gyroscope as an integral phenomenon' (which is closer to perception) to be discussed.

Although the means used by Köhl failed in the case of Buck's understanding, both individuals agreed in their self-appraisal of the 'location' of subject and object during a genuine understanding process: It is the [mathematical] relationship between subject and object that makes up the understanding process, thus any separation between the 'I' and the [mathematical or other] content of a cognition disappears on introspection of any genuine understanding process.