



European Taxidermy Championships® | Salzburg 2018

Orchid Calcareous Oligotrophic

Bank vole *Myodes glareolus*, lizard orchid
Himantoglossum hircinum
and typical concomitant species



an exhibit by **Sebastian Brandt** and **Christian Blumenstein**
Participants from Germany | Category: Collective Artists





Kategorie: Collective Artists



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Christian Blumenstein, Polyethylen-Glucol-Präparate



Sebastian Brandt, Pflanzen-Modelle



artenreiches Orchideen-Kalkmagerrasen-Biotop



2. Description

The exhibit shows a small section of the species-rich calcareous oligotrophic grassland biotope with its characteristic flora and fauna as you can find it in Central Europe. The model of this unique ecosystem is completed with a visible cut-out of the associated geological substrate (epoxy resin-solidified specimen of an original soil profile).

Seven typical plant species have been reproduced with synthetic materials by means of a new manufacturing process developed by Sebastian Brandt to gain an exact copy of the originals:

- ▶ Lizard orchid *Himantoglossum hircinum*
(three exemplars)
- ▶ Meadow sage *Salvia pratensis*
(three exemplars, leaf rosettes),
- ▶ Waybread *Plantago major*
(four exemplars, leaf rosettes, dwarfed form),
- ▶ Creeping cinquefoil *Potentilla reptans*
(plants in bloom),
- ▶ Common hawkweed *Hieracium lachenalii*
(three exemplars, leaf rosettes)
- ▶ as well as three other dwarfed *Hieracium*-Species
(five exemplars in total, leaf rosettes)



2.

Three bank voles (*Myodes glareolus*, PEG specimen) exemplarily represent the typical fauna. Two of the mice – seemingly absorbed by gnawing away at some waybread (*Plantago major*) infructescences a few moments earlier – look attentively at the observer while being watched by the third exemplar.



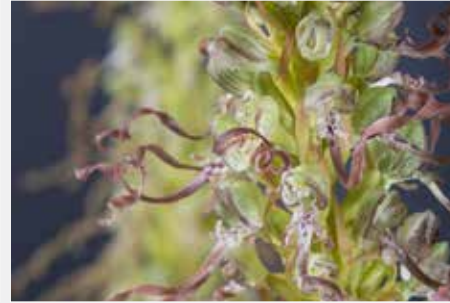
Furthermore, several typical insects (dry specimen) can be seen (sausage ground beetle *Carabus granulatus*, glistening jewel beetle *Anthaxia nitidula* und spring dor beetle *Trypocoptis vernalis*).



Overall, the exhibit simulates an authentic aesthetical impression of a literal ‚cut-out‘ of the complex calcareous oligotrophic grassland ecosystem inviting the viewer to search, discover, wonder and understand within the framework of modern knowledge transfer of natural history, which also raises awareness for an integrated protection of biodiversity.

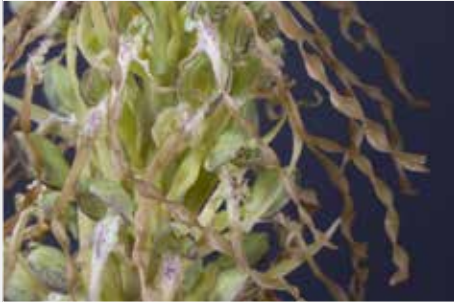


2.



Three tall inflorescences of the lizard orchid (*Himantoglossum hircinum*) dominate the scenery. This orchid is shown in three different forms, which document the range of variation of this thermophilic species.

Apart from the obviously diverse heights, one can see differences in the colour of the blossoms (reddish over brownish to greenish-yellowish) as well as in dimension and shape. The tallest example has unregularly angular-twisting blossom lips, especially in the lower part of the infructescence. The second largest exemplar features watch spring-like screw-shaped twisted lips with the third one striking a balance between the other two. The lip shape of this bizarre orchid is already being determined in the bud, depending on how these extremely extended lips lie before blossoming, which varies individually.



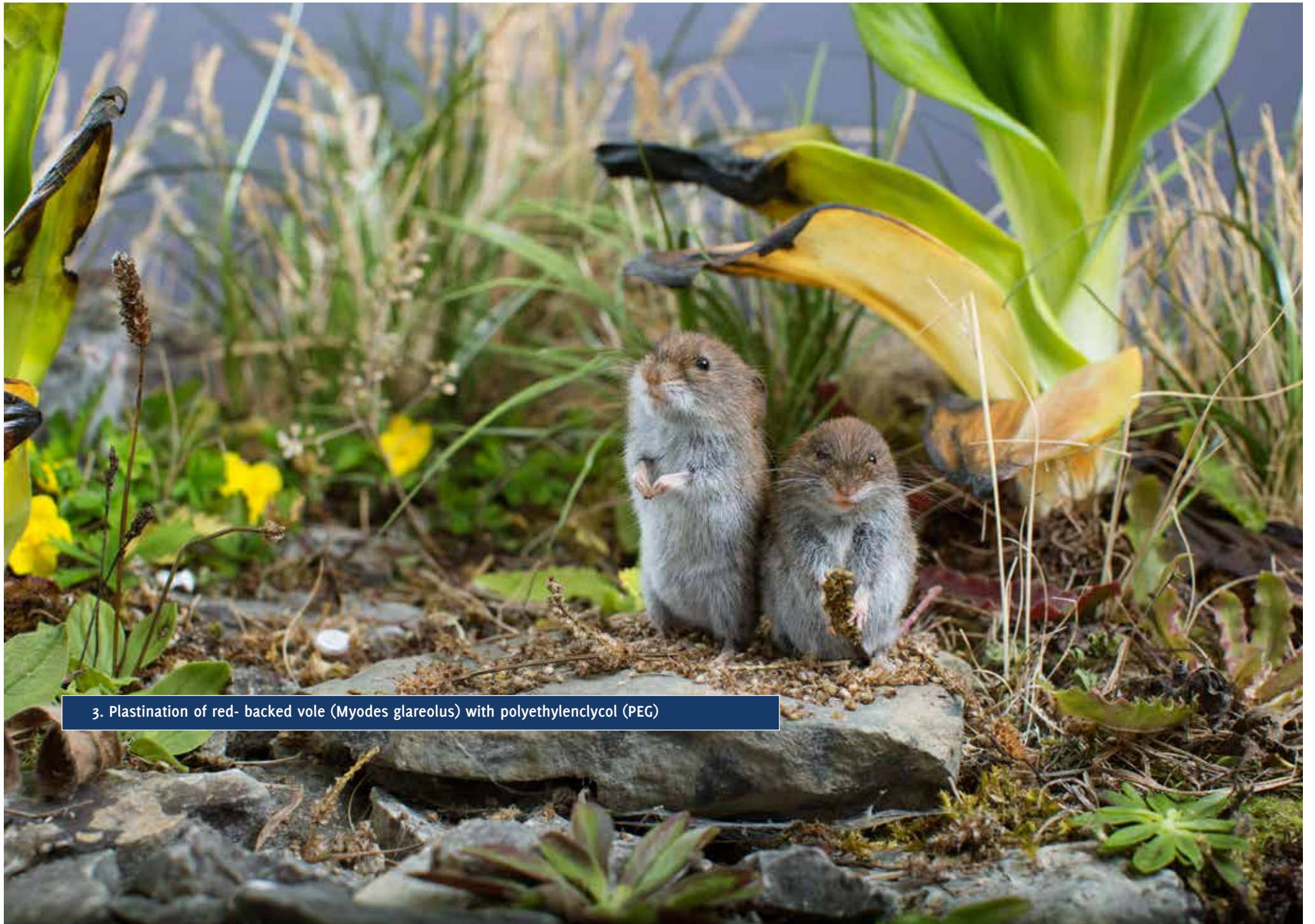
2

Furthermore, the yellow-brownish leaves of the orchids catch the observer's eye. Due to its Mediterranean origin, *Himantoglossum hircinum* is a so-called winter-leave-plant, which means that in autumn, the two-tuberous plant pushes up the new leaf rosette out of the root tuber generated in spring. The leaves partially freeze at the edges, partially survive winter-time and wilt completely when the shooting of the new inflorescence starts in June of the following year. After flowering and during ripening of the seeds, the new growing season starts with the generation of a new root tuber.



The extremely species-rich ecosystem calcareous oligotrophic grassland represents the habitat not only for the lizard orchid but for many other plant species of which only a very limited selection can be shown here. An aspect visualized by the exhibit is the multi-level structure of this open-land biotope, which remains hidden to the hiker who is only able to see it from above. Like trees in a miniature forest, the tall infructescences of the lizard orchid tower over the voles' visual field. Slightly lower lies the brake of grasses and herbs and at the very bottom the low ground vegetation, often times a residue of young flowering plants' lower leaf rosettes, mosses and lichens in the degrading substrate of dead plant matter. Every level has its own - often times hiding animal inhabitants, all perfectly adjusted to the respective environment.

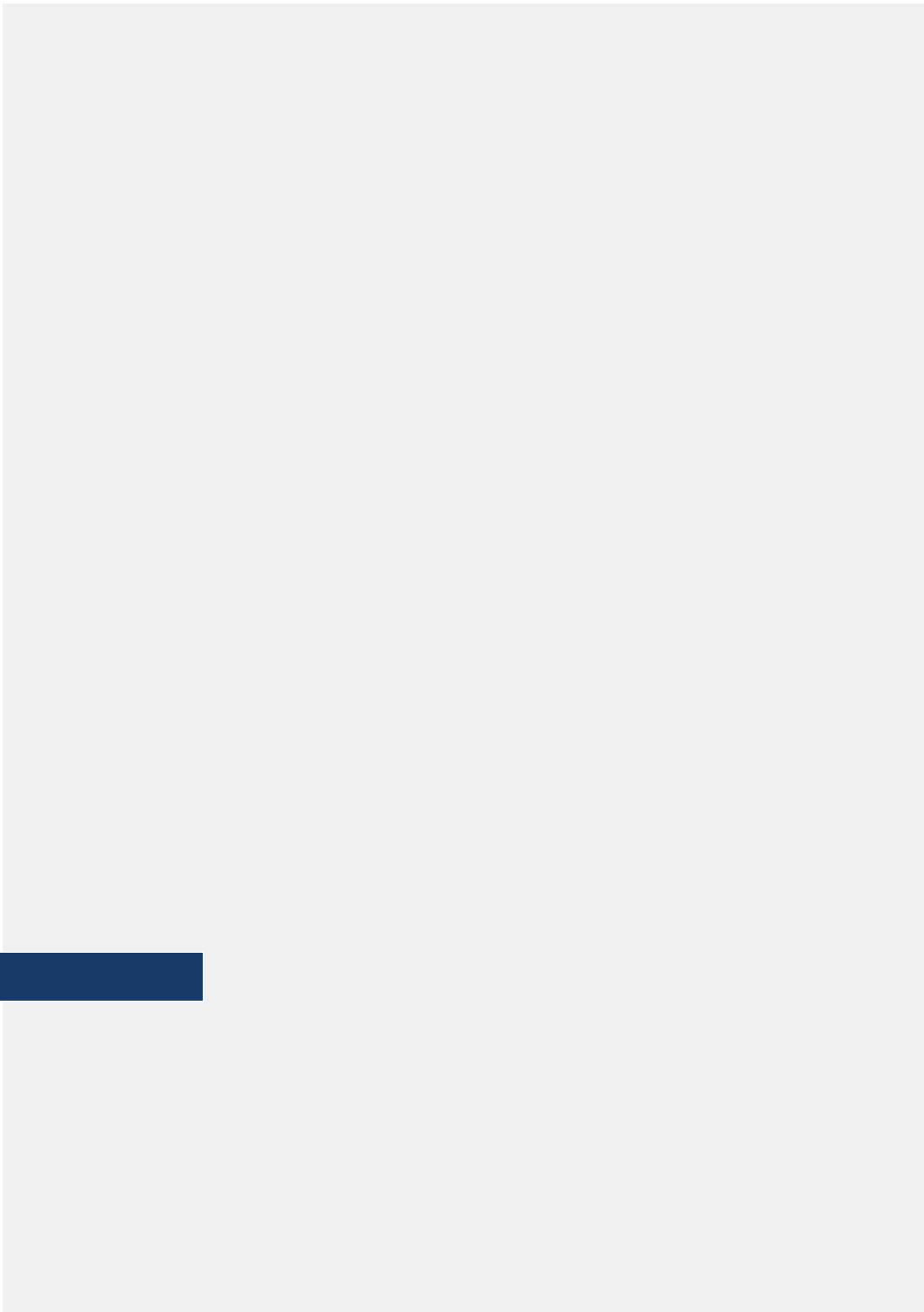




3. Plastination of red- backed vole (*Myodes glareolus*) with polyethylen glycol (PEG)



4. New ways in plant preparation



4.



True-to-nature, three-dimensional preparations of plant material for exhibition purposes have not been readily achievable so far. Results from traditional procedures like dehydrating compression, sand drying and polyethylene glycol (PEG) impregnation don't satisfy modern-day expectations. For sure it is why convincing plant preparations are still difficult to find in natural museums' exhibitions today.

The difficulties of plant preparation lie in the material quality of a plant's organism, particularly of the lesser reinforced low-fibre parts like leaves, blossoms and herbaceous sprout elements. The very special, transparent colouring of Sebastian Brandt's plant models is not based on superficially applied pigments (e. g. by using airbrush colours for subsequent coloration) but either on a process in which pigmented deposits inside the transparent tissue of the plant are created, or on the structural features of light refraction inside the plant matter.

The volume of these organs is made up almost entirely of water and gas with only a small portion of stabilizing tissue. The organism begins to disintegrate shortly after the extraction. Once the withering process has begun, the plant rapidly loses its natural volume and with it its structure and colouring – a process everyone can easily observe with an ordinary flower bouquet. To this day, the degradation process of plant material cannot be entirely stopped, not even by state-of-the-art conservation methods. Only the experimental work of zoological taxidermists Rainer Michelson (Gera / Germany) and Klaus Wechsler (Bremen / Germany) in the early 2000's opened up new ways through using more modern moulding techniques where mitigating the effects of degradation isn't the objective but producing a microscopically accurate three-dimensional depiction.

4.



All steps, from the extraction of the original plant to the finished model, are carried out in a laborious manual procedure.

This innovative procedure yields a synthetic cast of the plant so nature-identical that even the close range observer is barely able to tell the difference between model and living plant. Models are long-lasting in a museum's environment and can be shown in individual display cases.



4.

For the modern nature museum and other comparable institutions, this opens up new and unimagined ways of reaching a wide public audience with natural-historical education and information on nature conservation efforts. Worth mentioning is the conservation aspect of this new reproduction procedure:.



4.



This new procedure enables the visitor to examine a variety of the most diverse orchid and other plant species from a very close range. Visitors can be made aware of the particular ecological role of orchids as indicators of intact eco-systems and of the necessary conservation efforts to protect this species. Natural biotopes can be presented to a wider audience without being harmed by the resulting traffic.

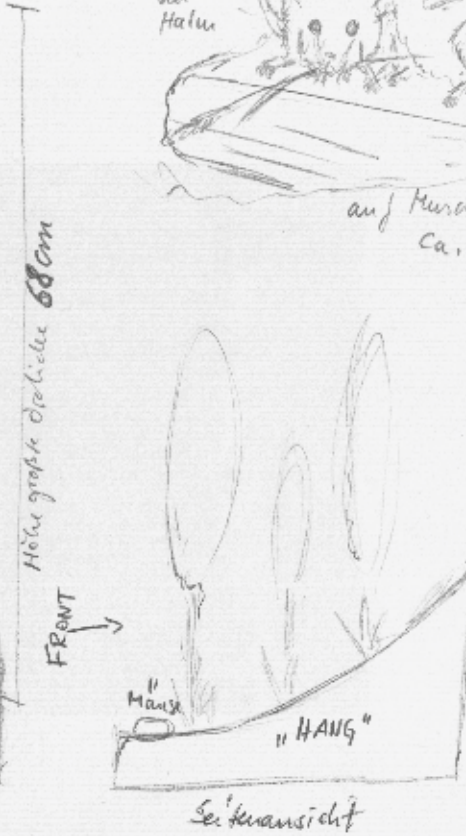
Another improvement of this procedure is the fact that, contrary to traditional reproduction methods, samples of the original plant needs to be extracted only once. This new procedure allows the production of several models off of the same original in almost nature-identical quality. This way, species conservation goals are being honoured at the same time.

Skizze: Bocksriemenmoos - 29.6.17

Diorama mit
Mäusen + Hummel

Mäuse: (Vorschlag)

Schnüffelt nach oben/hinten



Mäuse sitzen
auf Stein im Vordergrund
nahe bei Orchidee Ⓐ

S. Brandt

5. Manufacture of an orchid calcareous oligotrophic grassland exhibit

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