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CHELONIA SCIENCE

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They Call Him Laser: Genetic Coincidence or Inherited Destiny?

An albino pancake tortoise

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Abstract

This article briefly discusses the origins of the parent animals involved in this pancake tortoise (*Malacochersus tornieri*) breeding group – which, as far as is known, were derived from captive-bred stock – and their husbandry, the latter of which has already been described in greater detail (Bidmon, 2012). In 2026, a mating between young individuals from this group resulted in the first hatching of an albino named "Laser." The following sections discuss his care and development during the first weeks of life, during which he has so far shown a color preference for certain flowers of his food plants and increased his weight from 14 g to 25.6 g.

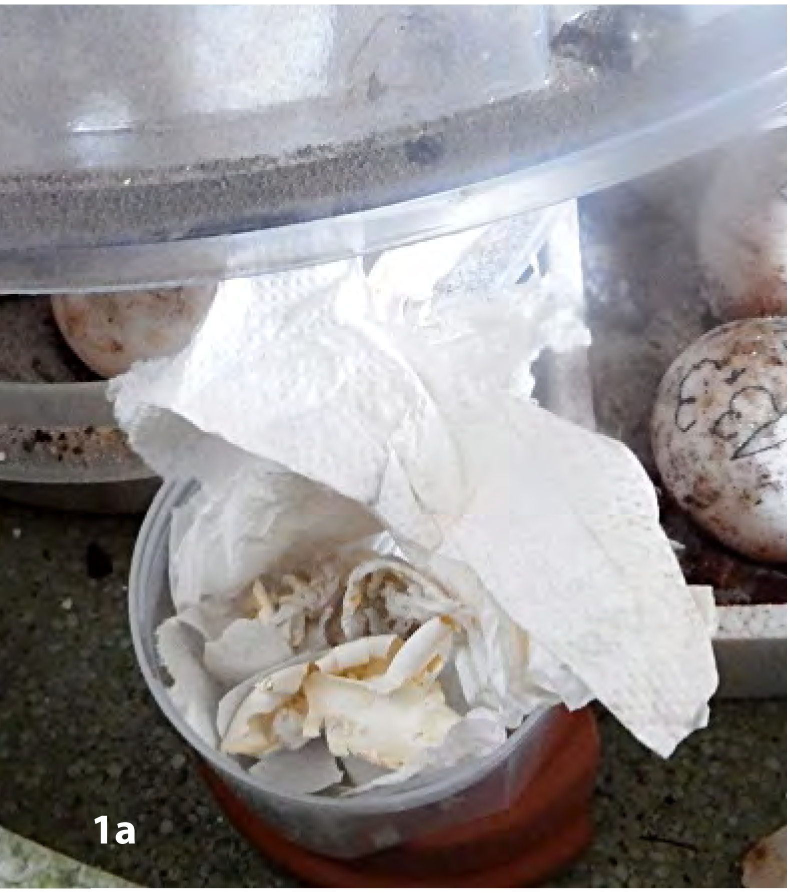


Fig. 1a-b: View inside the incubator showing the missing egg (a) and the hatchling found beneath it (b).

Introduction

I have been keeping pancake tortoises since 2003, having acquired my first specimens through the DGHT's Tortoise Working Group (AG Schildkröten). The board at the time, led by Thomas Vinke, had been asked to arrange for the rehoming of the tortoises of various species left in the estate of Dr. Braune, as he had lived alone. However, I then had to give one of the females back to someone who claimed he had provided her to Mr. Braune. Through the mediation of Hans Dieter Phillipen, I was given a small female. I kept a young male with normal coloration and a slightly lighter carapace, along with the female I had received, as a pair, separated from the others, and they grew up together—spending the summer in a sheltered outdoor enclosure with heated water canisters around which their shelter caves (crevices) were grouped (Bidmon, 2006, Bidmon & Jennemann, 2006).

Starting in 2007, regular egg-laying and reproduction began; in years with a very warm fall, this started as early as in the outdoor enclosure (see Chelonia-science video 1a-b), while in other years it continued in the indoor enclosure or, in most years, began there in the first place. Ultimately, I do not wish to go into further detail here but simply refer to Bidmon (2012), where both the parent animals and the rearing of the hatchlings are already described in detail.

Later, I received another small breeding pair from Frank van Loon in Belgium. I kept one pair of the latest juveniles for myself; the relatively small male was kept mainly because of his somewhat humped growth. I had apparently realized too late that his father had likely identified him as a male offspring at an early stage and, as a result, had driven him out of the optimal hiding crevices – a process that usually begins at the age of three – unlike the female juveniles. On October 14, 2025, I transferred these two offspring to indoor housing as usual, where, after about two to three weeks, the female began test burrowing in the substrate, which consisted of a base layer of charcoal (Bidmon, 2007), covered with straw pellets and an additional egg-laying area filled with fine-grained gravel and soil from the outdoor enclosure. Unfortunately, I was unable to find an egg there. It would have been the first laid by this female. The test burrowing ceased, and normal winter care began with fluctuating temperatures ranging from +23.5 ±1 °C at night to daytime temperatures of +27–29 °C, depending on weather conditions and sunlight, though higher temperatures occurred within the beam of the 70-watt UV lamp. However, the turtles usually only briefly utilized these higher temperatures in the early morning.

Fig. 2a–b: The characteristics of an albino (a) and its first bath (b).

Move to the outdoor enclosure and its consequences

On April 13, 2026, due to favorable weather conditions, all turtle species were transferred from this room back to their respective preheated outdoor enclosures (Bidmon, 2006). Since then, the indoor area has not been heated, so the room temperature likely fluctuated between 14 °C and 22 °C depending on weather conditions and morning sunlight. This was followed by the cleaning of the indoor enclosures, a process that takes several weeks since I rely on the compost waste pickup to dispose the approximately 600 liters of substrate. I start with the enclosures for the larger species, as they accumulate the most damp substrate, which must be removed before mold begins to grow. The enclosures of the pancake tortoises are actually always the last to be cleaned, since the substrate remains relatively dry and clean if any damp substrate around the food and water bowls is removed immediately.

So it wasn't until mid-May that the substrate from the two pancake enclosures was ready for disposal. While scooping out the substrate, I found a single egg lying on the shovel in the rearmost crevice of the male, nestled among three larger chunks of charcoal. At first, I wanted to dispose of it right away, since I could no longer mark its location and because I thought it had died during the cold spell indoors. But as luck would have it: The shell was snow-white and it didn't smell. So I placed it on a kitchen towel and put it in the lid of a clear-coat spray can that was still sitting on the shelf, then placed it in the incubator (+32 ^{0}C) with the *Astrochelys radiata* eggs without much expectation. I realized that it was probably too humid in there for *Malacochersus* eggs, but I didn't want to turn on a new incubator just for a single egg with uncertain prospects. A week later, the top of the egg looked a bit gray, but this could be wiped off like dust, and there was no noticeable odor.

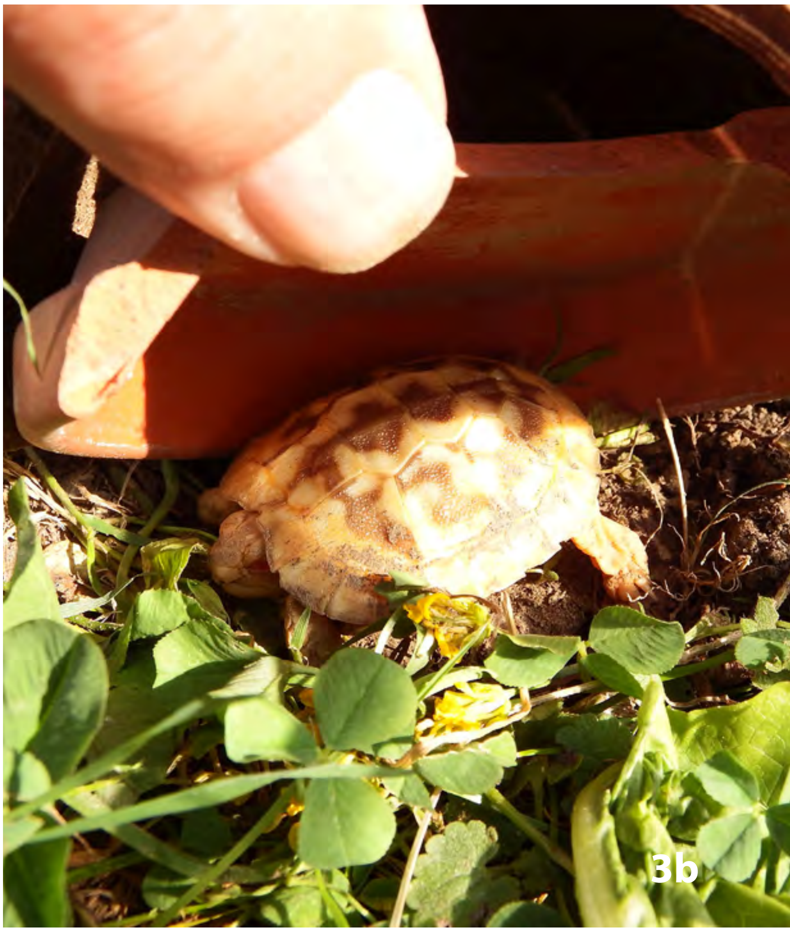


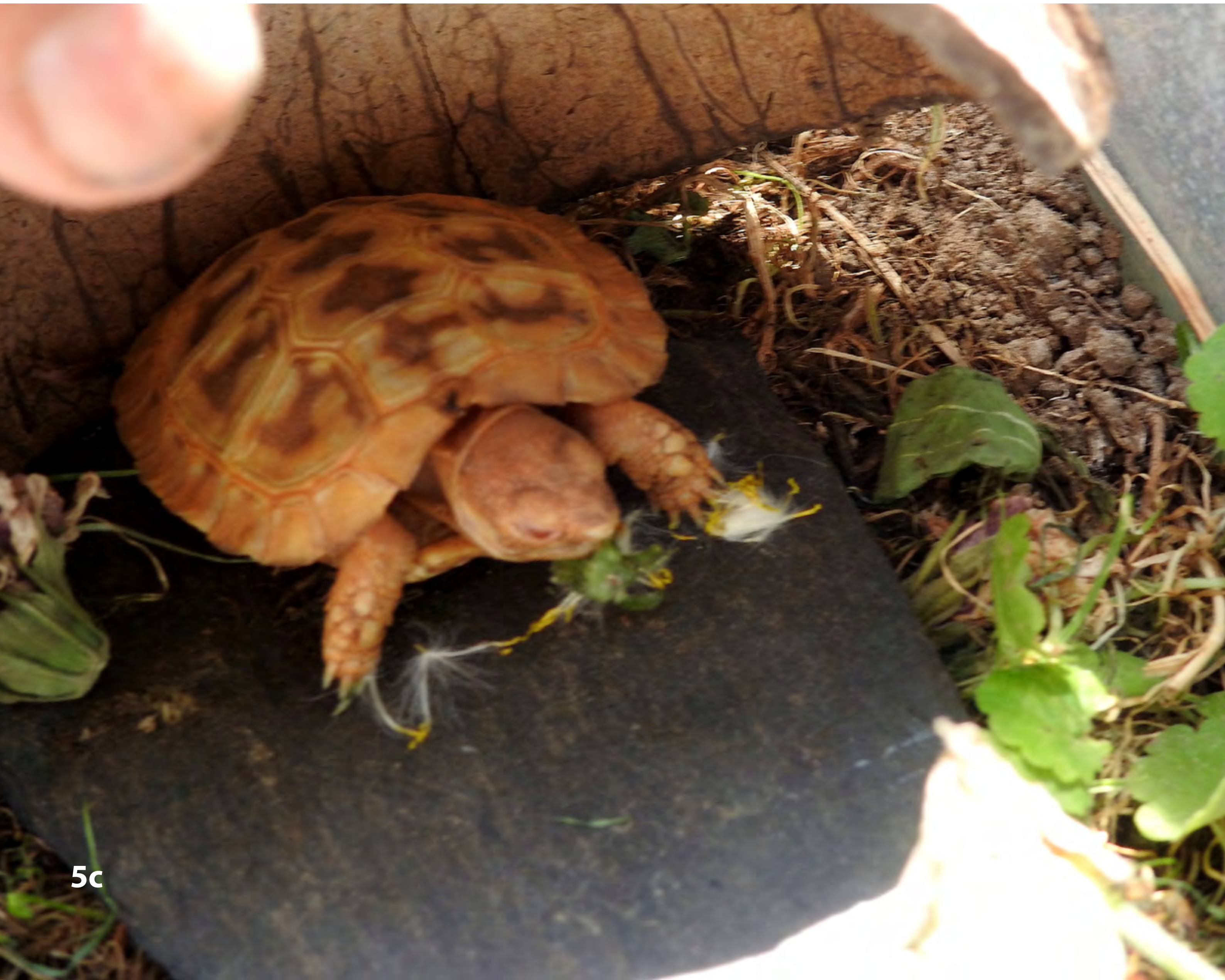
Fig. 3a–b: The first, quickly set up terrarium (a) and the setup completed a little later with a small, milled-out flower pot saucer and the coconut shell placed on top of it. This two-chambered shelter setup has proven effective, as the tortoise can seek out the lowest crevice under the flower pot saucer when temperatures get too warm. Because pancake tortoises prefer a hard surface with some contact with the ceiling, the upper gap is always used at optimal temperatures. Since warm air always rises and flows away, this setup ensures that the gap under the flower coaster does not overheat. The use of the crevices can be well observed on hot days when the small enclosure is in the garden. At the same time, a similar daily rhythm can be observed as described by Mohamed et al. (2026).

Fig. 4: As previously observed with the hatchlings, the last rapeseed blossoms from the garden enclosures also served as their preferred food here. (See also the video 5.)

The Unexpected

On Sunday, May 31, while watering the plants in the room, I glanced into the incubator and was surprised to find that the egg had disappeared (Fig. 1). Then came the surprise: Under the kitchen towel sat an exceptionally pale hatchling on eggshell fragments. Upon closer inspection, it was clear that the navel hadn't quite closed yet and the eyes were clear and bright red (Fig. 2). It weighed 14 g and measured 45 mm in body length, which corresponded to the average measurements of normally pigmented, newly hatched juveniles, so this albino could be placed in a quickly set-up rearing tank after a bath (Fig. 3). Later, my grandchildren named the hatchling "Laser." It also quickly became clear that he was not blind, as he usually preferred the yellow flowers over the reddish or white ones when given a choice and would deliberately head toward them.

Fig. 5a–c: The hatchling, however, developed a preference for freshly picked field sow thistle (*Sonchus arvensis*) blossoms in the morning, which it chose even when multiple food options were available; some blossoms were even taken back to one of its its roost (c) (See videos 7a-c).



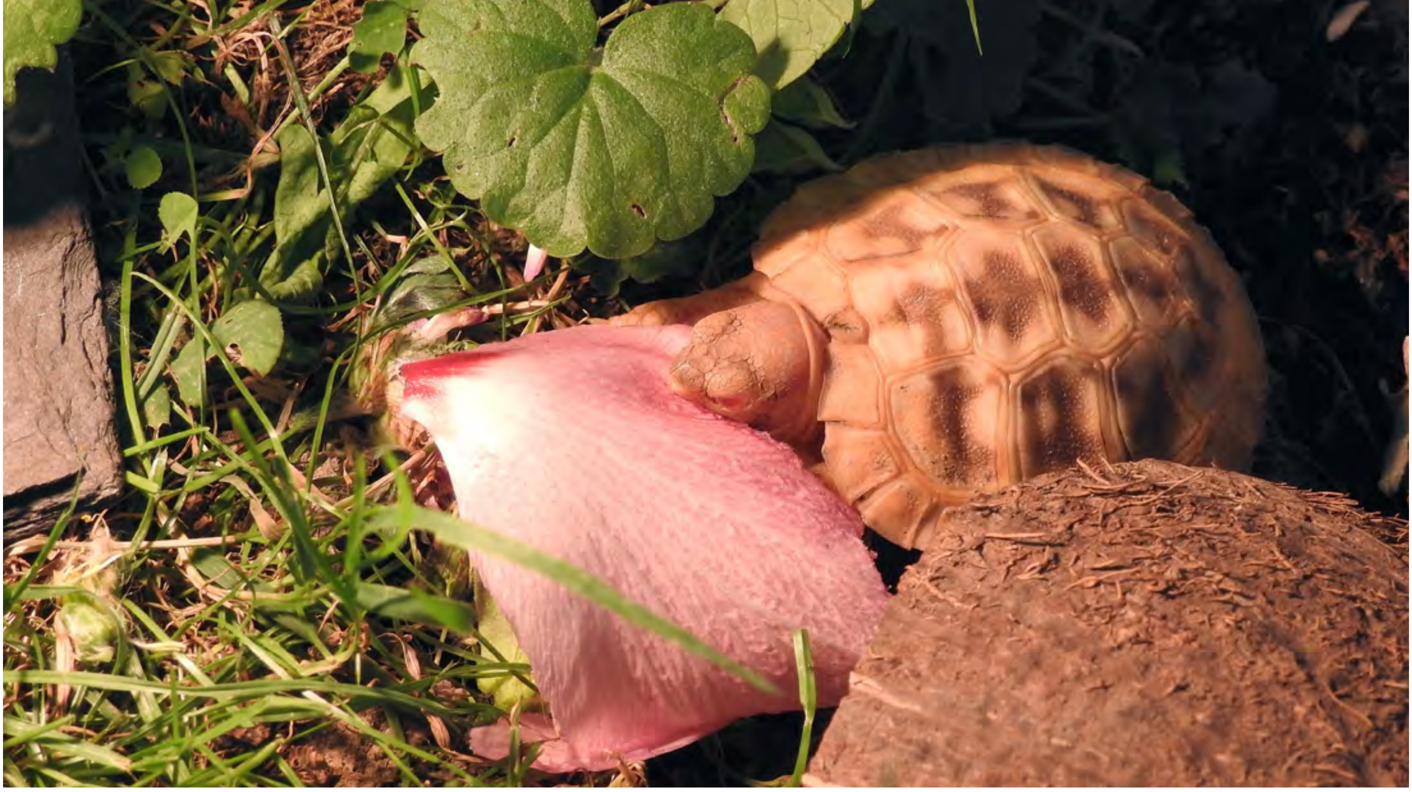


Fig. 6: Hibiscus flowers (*Hibiscus syriacus*) were also part of the diet, with the preferred order ranging from pink-white through red to blue (the least selected) (see videos 3a-c).

Feeding

As with my previous hatchlings, rapeseed flowers (*Brassica napus* var. *napus*) were used for initial feeding (Fig. 4). Later, a wide variety of food plants were offered and eaten; as with almost all tortoise hatchlings, they developed a particular preference for flowers, which I documented photographically during this extremely hot summer (Figs. 5–7). However, since I've read about quite a few food plants that my animals hardly touched, I've also gotten into the habit of filming them, because nothing beats good documentation of what's commonly believed.

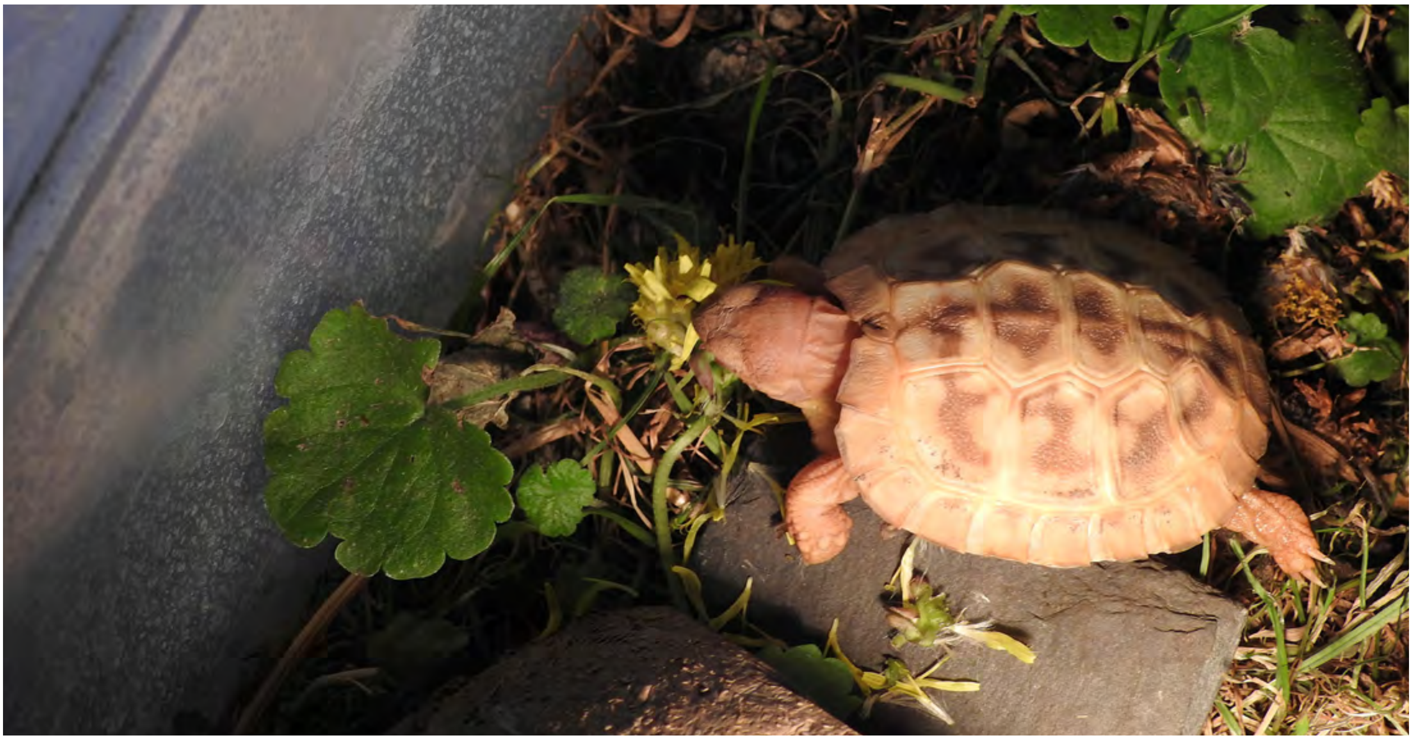


Fig. 7: Freshly bloomed dandelion flowers and red clover flowers are also eagerly eaten (see also the videos 4a-b, 6a-b).

Discussion

Now, such albino hatchlings are very rare. According to the internet, there are only a handful in the U.S. and Europe, scattered across the two regions, with the article specifically referring to an English breeder named James Sullivan. However, since I do not personally use any of today's common "social media" platforms, I cannot provide any further details on this. However, albino individuals have also been observed in several species of turtles, as can be found in Dutta et al. (2022) who provided also a good listing of the current literature. This often raises the question of whether there are differences between albino and normally pigmented turtles and how this might affect their life expectancy. Naturally, there is very little literature on this topic for turtles, but findings in hatchlings of green turtles (*Chelonia mydas*) indicate differences in blood parameters (Perrault et al., 2022). However, there is currently no information on whether such changes also occur in other species or on how they might affect survival rates in human care. Likewise, there is no information on whether there are differences in blood values between tyrosinase-positive and tyrosinase-negative albinos. It is known, however, that T+ albinos, although unable to produce melanin, nevertheless exhibit slightly more pronounced pigmentation.

However, albinos – or leucistic individuals – do not in any way assist threatened populations (Malonza et al., 2023; Ngwava et al., 2024) in their struggle for survival within natural populations or in breeding programs designed to augment or reintroduce such populations. These are genetic variations in which the genes controlling dark melanin pigmentation were inherited in the recessive form from both parental individuals. Such conspicuous specimens are eliminated in the wild by predators or perhaps by other mechanisms. The latter means that they can only be preserved as curiosities in human care and likely protected from excessive sunburn. In nature, variability certainly also offers adaptive advantages – for example, in habitats with light-colored substrates, rocks, or vegetation – but such extreme phenotypes are generally not suited to these conditions, and epigenetic adaptive processes are more likely to occur that could contribute to this despite normal pigment formation. In my estimation, such heritable genetic pigment deficiencies could offer survival advantages at most in the perpetually dark deep sea or in caves, because one should never rule anything out in the biosphere, even if it hasn't yet been proven! After all, too many things have come to light in the past that would previously have been considered impossible.

I have not yet been able to determine whether there is still a Malacochersus tornieri albino in Germany – but at least there is now one in North Rhine-Westphalia.

Acknowledgments

I would like to take this opportunity to express my special thanks to Monika and Rolf Krolak, who took excellent care of the albino and protected it from overheating during my vacation and later my field trip to the GEA Chelonia Foundation – which coincided with the hottest days of the summer in Germany.

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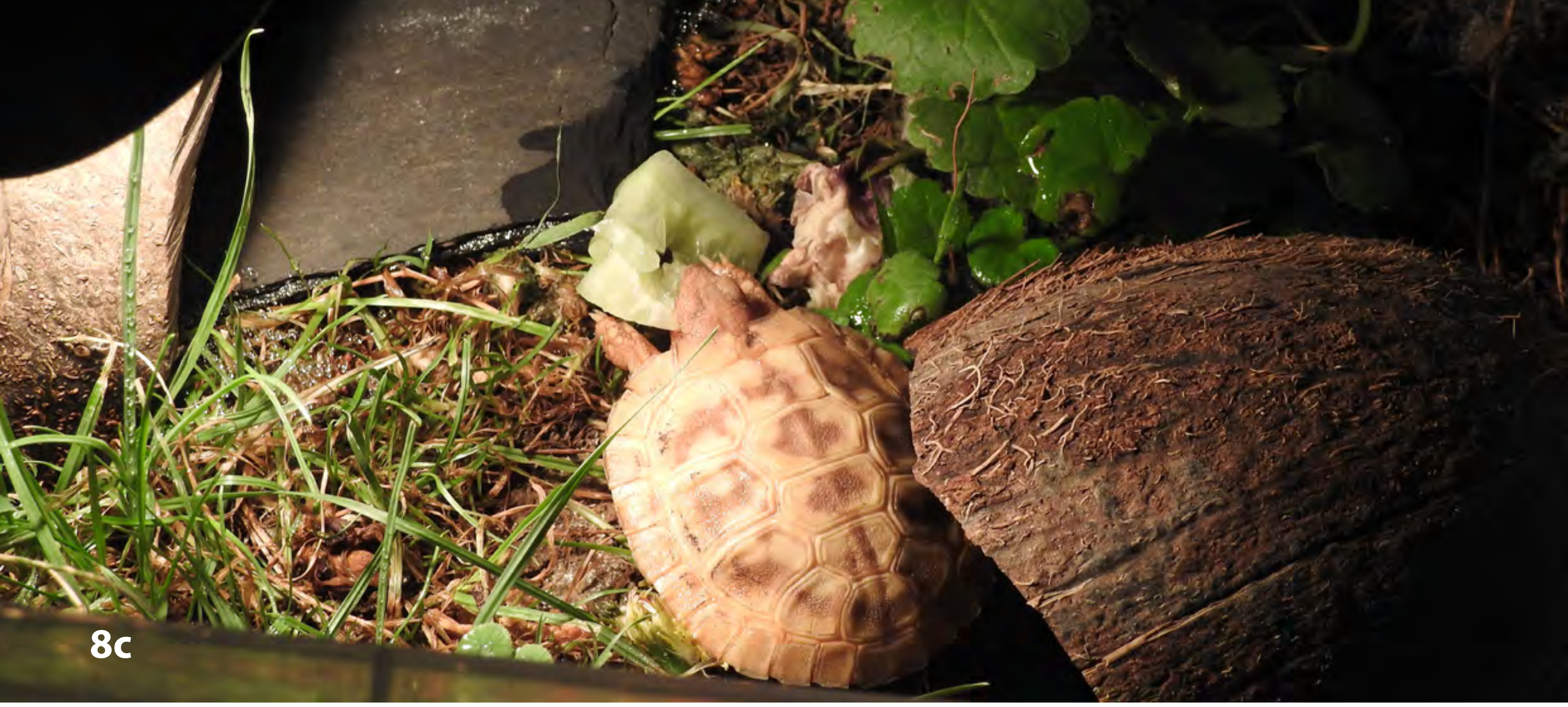
Fig. 8a-c: It is also always interesting to observe how new foods are tried out. For example, here, the inside of a small piece of cucumber, which is eaten down to the last bite (b) (See also the video 2a-d).



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Videos

1a: https://youtu.be/CjR6uJ31ir0
1b: https://youtu.be/U-F0EAT7HLc
Video 1a-b: The pancake tortoise, *Malacochersus tornieri*, lays eggs next to a heat canister in the outdoor enclosure.

2a: https://youtu.be/dh2uPMSNRhk
2b: https://youtu.be/UXmGKwrymBY
2c: https://youtu.be/1vEPRjthfGc
2d: https://youtu.be/Z6Iw--7xXeo
Video 2a-d: An albino hatchling of the pancake tortoise, *Malacochersus tornieri*, eats pieces of cucumber.

3a: https://youtu.be/1q-ZIwjH9Wk
3b: https://youtu.be/5-n0ZJ17g0o
Film 3a-b: An albino hatchling of the pancake tortoise, *Malacochersus tornieri*, eats hibiscus flowers, *Hibiscus syriacus*.

4a: https://youtu.be/bgvZ_R07fKA
4b: https://youtu.be/OixvL3YIIoQ
Film 4a-b: An albino hatchling of the pancake tortoise, *Malacochersus tornieri*, eats dandelion flowers, *Taraxacum officinale*.

5: https://youtu.be/ZhbBxnj39CI
Film 5: An albino hatchling of the pancake tortoise, *Malacochersus tornieri*, eats a rapeseed flower, *Brassica napus*.

6a: https://youtu.be/2FuYO1cCJng
6b: https://youtu.be/cTJlWzpsRpk
Film 6a-b: An albino hatchling of the pancake tortoise, *Malacochersus tornieri*, eats red clover blossoms, *Trifolium pratense*.

7a: https://youtu.be/vUlIlBMbTOE
7b: https://youtu.be/HmZ7rFX7aVY
7c: https://youtu.be/8CJsan3C9LY
Film 7a-c: An albino hatchling of the pancake tortoise, *Malacochersus tornieri*, eats field thistle flowers, *Sonchus arvensis*.