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CHELONIA SCIENCE

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The 4th Meier Symposium, October 9–11, 2026, at the Allwetterzoo Münster

An Annotated Overview

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The Opening

Unlike the usual biennial spring schedule, this year's Meier Symposium took place somewhat later, from October 9–11, 2026. This delay was likely due to a necessary reorganization, as Philipp Wagner – the former curator and co-organizer – had taken over as director of the zoo in Augsburg. Consequently, this year's gathering, led by Marcel Alaze and Christian Langner, took place at the Meranti Conference Center.

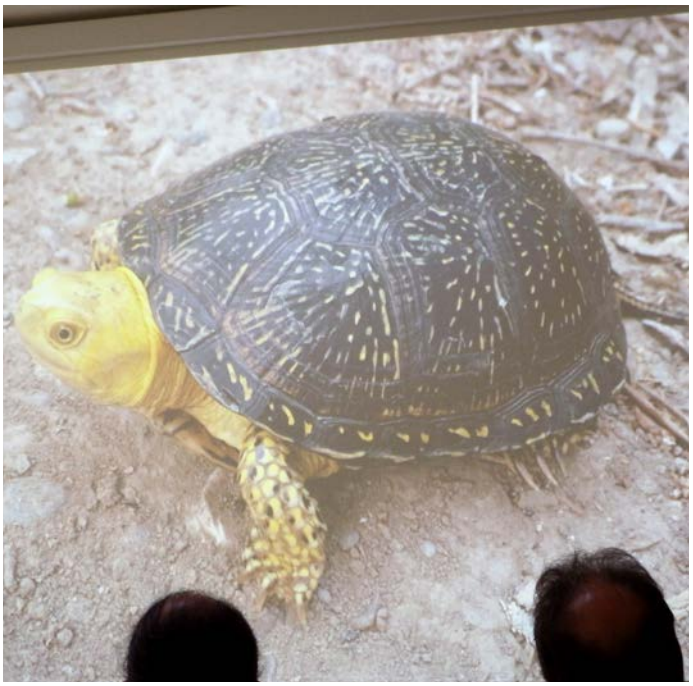


Fig. 1: One of the two color morphs shown from the last known habitat of *Emys orbicularis eiselti*, from the lecture by Dr. P. Praschag in the Meranti Hall at the Allwetterzoo in Münster.

After registration at the Meranti Conference hall on Friday evening, Marcel Alaze gave an evening lecture on the activities of the ACCB (Ankor Center for the Conservation of Biodiversity) in Cambodia, which focuses not only on the conservation of the yellow-headed tortoise [*Indotestudo elongata*, 202 captive-bred individuals (CB) 2026], which was the focus of the 3rd Meier Symposium (Bidmon, 2024), but also to the conservation of the White-shouldered ibis, the Giant ibis, the Sunda pangolin (first captive breeding in the world), Bengal Florican, Lappet-faced vulture, and the Greater Adjutant Stork. In addition, other turtle species are also being bred. These include the Asian giant tortoise (25 offspring), the Mekong Malayan snail-eating turtle, the Black marsh turtle, the Yellow-headed temple turtle (101 offspring), the Ambiona hinged tortoise, and the Southern river terrapin (*B. affinis*, 34 individuals bred in captivity). The presentation also provided a detailed overview of the on-site facilities and staff, as well as the reintroduction of the bred-in-captivity animals into the Siem Panag Nature Reserve with the involvement of the monks (see also Bidmon, 2024). Afterward, everyone gathered for dinner and to nerd out together.

The Focus of the Presentations

On Saturday morning, the presentation program continued following a welcome address by the zoo director, Dr. Simone Schehka.

Dr. Peter Praschag provided a detailed account of just how dire the situation has become for the newly described Kinosternidae from the *Kinosternon hirtipes* group, such as *K. vogti* and *K. cora*. Although two additional populations of *K. vogti* have been identified, they are threatened not only by massive habitat loss, as local conservation activists collect more than 20 traps almost every night from the habitat waters, where poachers repeatedly set them. Even some of the *K. vogti* individuals housed in steel containers equipped with conservation breeding tanks and monitored by video as part of a conservation breeding program – have been stolen, with the nighttime video recordings vividly illustrating the violent nature of the thefts. The turtles there are all individually marked, and one of these stolen females, along with others, has already been recovered in Hong Kong. These animals are now to be returned to Mexico. In connection with this, a Spanish dealer who had also sold specimens in Europe has since been arrested. The current market value is estimated at around 15,000 euros or more (see also Lopez-Luna et al., 2018; Loc-Barragan & Pfau, 2026).

Fortunately, however, it was also mentioned that *K. vogti* is easy to keep and breed, so that juveniles from the conservation group cared for at Turtle Island in Graz can already be transferred back to Mexico.

Peter Praschag then presented conservation projects in Nepal, Sudan, and Uganda, with the focus in Africa on the protection and conservation of the Nubian soft-shelled turtle, *Cyclanorbis elegans* (Luiselli et al., 2024), which is severely threatened, particularly by trade to China. The description of the threatening situation facing **Emys orbicularis eiselti** was somewhat more detailed, as no individuals could be found at the original site in Turkey. However, as impressive images demonstrated, a remnant population still exists in another body of water. This site, however, resembled more of a wild garbage dump. Two individuals with very light-colored heads and necks were also found there (Fig. 1).

Last but not least, a report was given on the construction of a 1,500-square-meter greenhouse facility near Turtle Island in Graz, which is to be used for the conservation breeding of *Batagur*.





Fig. 2a, b: Sunday began at the IZS with a gathering of familiar tortoises (see Bidmon, 2024) such as *Leucocephalon yuwonoi*. A female (a) and one of the males (b).

Zoo veterinarian Dr. Carsten Ludwig then reported on experiences with fungal infections in turtles caused by *Emydomyces testavorans*. He vividly documented how this fungus almost completely destroys the bony parts of the carapace and plastron beneath the keratin layer, even in turtles that appear symptom-free. However, to this day, it remains unknown where this fungus originates and why some individuals are more susceptible to this infection than others.

Treatment has so far been carried out with terbinafine. However, treatment success rates have been insufficient to date (see also Minich et al. 2026). Treatments tested in Münster so far include 30 mg/kg orally and 1 mg/L in the water. Tanks equipped with biofilters have also shown some promise, reducing the infection rate from 99% to 1%. It is possible that the fungus *Emydomyces testavorans* may have existed long before it was described. Further molecular genetic studies will certainly be needed to determine whether this is an introduced pathogen, as its initial description in the U.S. does not mean that the fungus actually originates from there (Woodburn et al., 2019).



Fig. 3a,b: The other captive-bred specimens of the genus *Cuora* were also present, but were likely somewhat less active than in May two years ago due to the season. *Cuora glabinifrons* (a) and a very impressive *C. cycloornata cycloornata* (b).

Markus Auer then presented his breeding program for *Platysternon megacephalum*, interspersed with several photos from the species' natural habitats and a conservation breeding program on-site in China. Sebastian Wilk then gave a presentation on his breeding program for *Cuora a. ambionensis*, followed by Stephan Ettmar (Austria), who presented his long-standing breeding program for the western Malayan swamp turtle, *Malayemys macrocephala*.

After the lunch break, Carl Bolling and Marcus Auer reported on their herpetological journey through southern Armenia, with special focus on the tortoise continuum within the Testudo graeca complex, accompanied by several impressive photos.



Fig. 4a–d: A somewhat older captive-bred specimen of *Cuora c. annamensis* (a) and a *C. glabinifrons* (b), as well as *Leucocephalon yuwonoi* (c). In addition, Christian Langner presented a freshly hatched *Cuora mccordi* (d).









Fig. 5: Some impressions of the lively discussions among the participants, during which, among other things, the somewhat involuntary breeding restrictions imposed by the studbook were discussed, as it takes a very long time for the necessary results from the submitted blood samples to become available.

Bastian Esser then gave a presentation on his care of *Cuora flavomarginata* and, later in a second presentation, on the construction of his enclosure for keeping the spotted turtle, *Clemmys guttata*.

Christian Langner spoke about shell necrosis and an ectoparasite in an autochthonous West Georgian population of **Emys orbicularis**, followed once again by Marcus Auer, who described his travel impressions of North Carolina's turtle fauna and the frequent threats they face from road traffic. A presentation that really made someone who once lived there for five years want to spend a vacation there again (if we're ever allowed to enter the country again!) . As for myself, an outsider among the aquatic and swamp turtle keepers, I presented a general talk – somewhat focused on *Astrochelys radiata* – on the care of tortoises, peppered with a few remarks on supplementary feeding (Bidmon, 2016) for swamp turtles.

The conference, superbly organized by Marcel Alaze, Christian Langner, and their team, concluded with a lavish evening buffet and an auction to benefit IZS projects.

A Hands-On Sunday

On Sunday morning, attendees gathered for a tour of the IZS and its turtle collection – unfortunately without Elmar Meier, who had stayed home with a cold after already struggling through the lecture program.

For the most part, the adult breeding specimens on display were almost the same as in previous years (Figs. 2–3). However, there were far fewer offspring compared to the 2024 meeting (Fig. 4). This latter point also sparked extensive conversations and discussions among the participants (Fig. 5). As a new addition, however, Christian Langner presented an adult pair of *Siebenrockiella leytensis* (Figs. 6). A *Chelodina mccordi*, which was also housed at the IZS, delighted many with its intense attempts at communication (Fig. 7 + video). And, of course, there was plenty of time to exchange ideas about future breeding goals and organizational matters, or to reflect on the IZS's founding 22 years ago and learn from long-time members about the early days of its turtle collection (Fig. 8).



Fig. 6a,b: Christian Langner shows off the new arrival: an adult pair of Philippine box turtles, *Siebenrockiella leytensis* – the male (a) and the female (b).

Comments & Discussion

In addition to the husbandry presentations –which, inevitably, presented interesting but mostly very similar setups for the housing conditions of aquatic and marsh turtles – Peter Praschag's presentation – alongside the travel reports – provided very compelling insights into the still-relevant issue of the animal trade. Although he was also able to demonstrate that this issue regarding *Kinosternon vogti* has now been recognized by policymakers – and that a previously planned construction project, which would have destroyed a habitat, was immediately halted – the question remains as to how long such measures can be sustained. After all, if one compares it to the drug and arms trade, one has to wonder whether the problems in some countries can truly be brought under control in the long term. Yes, even here in Germany we need to think about this, because, as Dr. Praschag explained, even before the raid and arrest in Spain, some tortoises had made their way to a German marketplace. As Loc Barragan & Pfau (2026) describe, this likely involved not only *K. vogti* but also *K. cora*. But such issues have been debated for a long time, and we see almost every year how a mere change in political power can affect biodiversity conservation and species preservation. If you listen to the comments circulating in



Fig. 7a,b: The visitors were then immediately approached by a curious *Chelodina maccordi* (a), which apparently wanted to join the discussion (see video). Such attentive companions might be better suited for a display terrarium, as they are sure to be a highlight for all younger zoo visitors.

the local media regarding this year's UN Biodiversity Conference 2026 (COP 17) in Armenia, it's clear once again that the set goals will not be met – and the same is constantly reported regarding the climate goals as well. In reality it seems, we're not taking action: we'd rather like to wait for disasters!

I also found the presentation of the findings on the clinical symptoms caused by *Emydomyces testavorans* very interesting, which led me to wonder: How long has this fungus been among us? Because when I recall the descriptions of various breeding problems – both in aquatic and terrestrial turtles – that were often attributed to improper diet or husbandry, could these have been caused by pathogens that hadn't yet been described at the time?

In this regard, I also found the observation that the use of biofilters and avoiding "excessive hygiene" during water changes reduced the infection rate. It actually suggests that the bacterial and fungal communities in the water and substrate likely play a very significant role, as well as how this microbial communitys – which is naturally composed of both health-promoting and pathogenic microorganisms – balances itself.

However, this is not necessarily limited to the water and substrate microbiome, as the gut and skin microbiomes could also play a significant role, a subject that is just in its infancy for turtles (Kuschke et al., 2026; Mills et al., 2026; Liao et al., 2026; Hetterich & Pees, 2025; Mohd Salleh et al., 2022).

We are only now beginning to unravel the effects of these body-associated or internal micro- and mycobiomes in the context of human medicine, although it is already possible to demonstrate the potential consequences of shifts in such balances (Dai et al., 2026; Rosenn et al., 2026; Han et al., 2026; Huus et al., 2026; Qiao et al., 2026; Bidmon, 2022). Likewise, examining these findings—which have become known through research in human medicine and prehistoric ethnology (Carter et al., 2026)—helps place this topic in a broader, and if you will, ecological-evolutionary context (Lala et al., 2024).

If we take a closer look at the work of HAN et al. (2026) and LIAO et al. (2026), this could also yield clues for therapies in which protective micro- and mycobiome components are actively substituted. If we then consider that such problems affect not only individual reptile facilities but, according to a personal note from Norbert Schneeweis, also conservation projects – such as those aimed at preserving our last native populations of *Emys orbicularis* are also at risk, herpetological societies, as well as national and European political research funding institutions, should consider actively promoting appropriate methods from a veterinary perspective to clarify the facts and implement new environmentally focused approaches (see, e.g., Nousias et al., 2026). After all, it could be far less helpful to simply keep calling for more or stricter conservation measures and protected areas if, on the other hand, we are unable to properly assess the spread of pathogens and their effects and use that knowledge for the benefit of biodiversity conservation.

Acknowledgments

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Fig. 8: Accounts by the veteran keepers regarding the initial turtle population at the IZS and the fact that some of the specimens – which were already adults at the time, though their exact age is unknown – have not changed in appearance over the past few years.

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Organizations

Ankor Center for the Conservation of Biodiversity

UN Biodiversity Conference 2026 (CBD COP 17)

https://www.monitoringzentrum.de/veranstaltungen/un-biodiversity-conference-2026-cbd-cop-17.

Video

https://youtu.be/3oM6AQKePyM

Abb: 7b: Die Besucher wurden dann auch gleich von einer neugierigen *Chelodina mccordi* (a) anvisiert, die anscheinend auch mitdiskutieren wollte.