

**Supplementary figure 1:** Ventral close-up of the mouth parts of *Ixodes* *antiquorum*. The tissue attached to mouth parts can be observed as a opaque inclusion.

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**Supplementary figure 2:** MicroCT scan of the hypostome of *Cornupalpatum burmanicum*. Indicated is the dorsal view on the left and the ventral view on the right.



**Supplementary figure 3:** Tarsi from *Cornupalpatum burmanicum* grasping a barb from a feather.



**Supplementary figure 4:** MicroCT scan of the legs of *Deinocroton copia* sp. nov. The tarsi articulations with notch-like processes and riffled dorsal and ventral line can also be observed.



**Supplementary video:** A rendering of the microCT scan of the palps of *Deinocroton copia* sp. nov.