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Developmental morphological diversity in caecilian amphibians: systematic and evolutionary implications

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Publications

1. **Müller, H.** (2000) Anfang – Franz Eilhard Schulze, der Gründer der Zoologischen Lehrsammlung., p. 183-184, Von der Ästhetik des Lernens II – Die Wandtafeln der Zoologischen Lehrsammlung. p. 192-193, plus 30 additional object descriptions pp. 152, 185–191, 195–196 in: Bredekamp, H, Brüning, J & Weber, C. (eds.) Theater der Natur und Kunst – Theatrum naturae et artis: Wunderkammern des Wissens. Katalog. Henschel, Berlin. Pp. 311. [Catalogue to: "Theatre of Nature and Art - Treasure-trove of Knowledge" An exhibition organised by the Humboldt-University Berlin under the patronage of the President of the Federal Republic of Germany, Johannes Rau, held at the Martin Gropius Bau, Berlin from December 10, 2000 to March 4, 2001.]
2. Kupfer, A. & **Müller, H.** (2001) *Ichthyophis kohtaoensis*. Maximum length. Herpetological Review **32**(4):249
3. Gower, D. J., Kupfer, A., Oommen, O. V., Himstedt, W., Nussbaum, R.A., Loader, S. P., Presswell, B., **Müller, H.**, Krishna, S. B., Boistel, R. & Wilkinson, M. (2002) A molecular phylogeny of ichthyophiid caecilians (Amphibia: Gymnophiona: Ichthyophiidae): Out of India or out of Eurasia? Proceedings of the Royal Society London, Series B **269**:1563–1569.
4. Wilkinson, M., **Müller, H.** & Gower, D. J. (2003) On *Herpele multiplicata* (Amphibia: Gymnophiona: Caeciliidae). African Journal of Herpetology **52**:119–122.
5. **Müller, H.** (2003) Zur phylogenetischen Bedeutung der Ontogenese des Schädels von *Hypogeophis rostratus* und *Gegeneophis ramaswamii* (Amphibia: Gymnophiona). Sitzungsberichte der Gesellschaft Naturforschender Freunde Berlin (N.F.) **42**:57–69.
6. Kupfer, A. & **Müller, H.** (2004) On the taxonomy of ichthyophiid caecilians from southern Thailand: A re-evaluation of the holotype of *Ichthyophis supachaii* Taylor 1960 (Amphibia: Gymnophiona: Ichthyophiidae). Amphibia-Reptilia **25**:87–97.
7. Wilkinson, M., Loader, S. P., **Müller, H.** & Gower, D. J. (2004) Taxonomic status and phylogenetic relationships of *Boulengerula denhardti* Nieden, 1912 (Amphibia: Gymnophiona: Caeciliidae). Mitteilungen aus dem Museum für Naturkunde Berlin, Zoologische Reihe **80**:41–51.
8. Malonza, P. K. & **Müller, H.** (2004) A rediscovery after two decades: the Changamwe lowland caecilian *Boulengerula changamwensis* Loveridge, 1932 (Amphibia: Gymnophiona: Caeciliidae). Journal of East African Natural History **93**:57–61.
9. **Müller, H.**, Measey, G. J. & Malonza, P. K. (2005) Tadpole of *Bufo taitanus* (Anura: Bufonidae) with notes on its systematic significance and life history. Journal of Herpetology **39**:138–141.
10. **Müller, H.**, Measey, G. J., Loader, S. P. & Malonza, P. K. (2005) A new species of *Boulengerula* Tornier (Amphibia: Gymnophiona: Caeciliidae)

from an isolated mountain block of the Taita Hills, Kenya. *Zootaxa* **1004**:37–50.

11. **Müller, H.**, Oommen, O. V. & Bartsch, P. (2005) Skeletal development of the direct developing caecilian *Gegeneophis ramaswamii* (Amphibia: Gymnophiona: Caeciliidae). *Zoomorphology* **124**:171–188.
12. Measey, G. J., Mejissa, J. & **Müller, H.** (2006) Notes on the distribution and abundance of the caecilian *Boulengerula ulugurensis* in the Uluguru Mountains, Tanzania. *African Journal of Ecology* **44**:6–13.
13. Kupfer, A., **Müller, H.**, Antoniazzi, M. M., Jared, J. C., Greven, H., Nussbaum, R.A. & Wilkinson, M. (2006) A novel form of parental investment by skin feeding in a caecilian amphibian. *Nature* **440**:926–929.
14. **Müller, H.** (2006) Ontogeny of the skull, lower jaw and hyobranchial skeleton of *Hypogeophis rostratus* (Amphibia: Gymnophiona: Caeciliidae) revisited. *Journal of Morphology* **267**:968–986.
15. **Müller, H.**, Loader, S. P., Ngalason, W., Howell, K. M. & Gower, D. J. (2007) Reproduction in brevicipitid frogs (Amphibia: Anura: Brevicipitidae) – evidence from *Probreviceps m. macrodactylus*. *Copeia* **2007**:726–733.
16. Kupfer, A., Gower, D. J., **Müller, H.**, Wilkinson, M. & Jehle, R. (in review) Nest ecology and alloparental care in a skin-feeding caecilian amphibian.

Popular articles

1. Kupfer, A., **Müller, H.**, Measey, G. J., & Malonza, P. K. (2005) Auf Blindwühlensafari in Ostafrika. *Amphibia* **4**:8–11.
2. Malonza, P. K. & **Müller, H.** (2005) For so long in the dark. *SWARA* **28**:34–35.

Book reviews

1. **Müller, H.** (2006) Amphibians of East Africa, by A. Channing & K. M. Howell. Mitteilungen aus dem Museum für Naturkunde Berlin, Zoologische Reihe **82**:307–308.
2. **Müller, H.** (2007) Reproductive Biology and Phylogeny of the Gymnophiona, by Jean-Marie Exbrayat (ed). *Acta Zoologica* online first

Species conservation assessments (available at www.iucnredlist.org)

1. van Dijk, P.P., Chuaynkern, Y., Kupfer, A. & **Müller, H.** (2004) *Ichthyophis supachaii*. In: IUCN 2006. *2006 IUCN Red List of Threatened Species*.
2. Measey, J., Malonza, P. & **Müller, H.** (2006) *Boulengerula niedeni*. In: IUCN 2006. *2006 IUCN Red List of Threatened Species*.

Published abstracts

1. Bartsch, P. & **Müller, H.** (2001) The ontogeny of the skull in the Recent dipnoan genera revisited. *Journal of Morphology* **248**:204.
2. **Müller, H.**, Bartsch, P. & Zeller, U. (2002) On the development of the skull of *Gegeneophis ramaswamii* (Amphibia: Gymnophiona). *Zoology* **105**, Suppl. V(95.1):36.
3. **Müller, H.** & Measey, G. J. (2004) Intraoviductal feeding in embryos of *Schistometopum thomense* (Amphibia: Gymnophiona: Caeciliidae). *Journal of Morphology* **260**:315.
4. **Müller, H.**, Nussbaum, R. A., Gower, D. J. & Wilkinson, M. (2007) Morphology of larval caecilians (Amphibia: Gymnophiona). *Journal of Morphology*
5. **Müller, H.**, Nagashima, H., Kuratani, S. & Sanchez-Villagra, M. R. (2007) Development of the skull in the Chinese soft-shelled turtle *Pelodiscus sinensis* (Reptilia: Testudines: Trionychidae). *Journal of Morphology*

Unpublished abstracts

1. Bartsch, P. & **Müller, H.** (1999) On the ontogeny of the autostylic jaw suspension in the Dipnoi.
2. **Müller, H.**, Wilkinson, M., Kupfer A. & Day J. J. (2003) New observations on the disparate early life history and morphology of *Geotrypetes seraphini* (Amphibia: Gymnophiona: Caeciliidae).
3. **Müller, H.** (2003) Skull development in *Hypogeophis rostratus* and *Gegeneophis ramaswamii* (Amphibia: Gymnophiona) and its bearing on caecilian intra- and interrelationships.
4. **Müller, H.** (2005) Caecilian skull development revisited.
5. **Müller, H.** (2005) Skull development in caecilians and its implications for the reconstruction of the ground pattern of the caecilian skull.
6. Kupfer, A., **Müller, H.** & Wilkinson, M. (2005) Towards terrestriality: reproduction in an East-African caecilian amphibian.
7. Kupfer, A., **Müller, H.**, Malonza, P. K. & Wilkinson, M. (2005) Reproductive ecology of the caecilian amphibian *Boulengerula taitanus*.
8. **Müller, H.**, Kupfer, A., Gower, D. J. & Wilkinson, M. (2005) Evolution of direct development in caecilian amphibians, a case study.
9. San Mauro, D.^{*}, **Müller, H.**^{*}, Zardoya, R., Richardson, M. K., Kupfer, A., Himstedt, W., Gower D. J. & Wilkinson, M. (2006) Evolution of the genetic and developmental basis of limblessness in caecilian amphibians.

Conference presentations and seminar talks:

- "Major events in early vertebrate evolution: palaeontology, phylogeny and development." a joint Systematics Association/NHM meeting held at the NHM London, 8./9. April 1999. Poster presented: Bartsch, P. & H. Müller: On the ontogeny of the autostylic jaw suspension in the Dipnoi".
- 6th International Congress on Vertebrate Morphology. Jena, Germany, 21.-26. July 2001. Poster presented: Bartsch, P. & H. Müller: The ontogeny of the skull in the Recent dipnoan genera revisited. published in J. Morphol. 248: 204.
- Annual Meeting of the German Zoological Society. Halle, Germany, 20.-24. May 2002. Talk given: On the ontogeny of the skull of *Gegeneophis ramaswamii* (Amphibia: Gymnophiona). published in Zoology (105), Suppl. V (95.1):36.
- Annual Meeting of the German Zoological Society. Berlin, Germany, 09.-13. June 2003. Poster presented: New observations on the disparate early life history and morphology of *Geotrypetes seraphini* (Amphibia: Gymnophiona: Caeciliidae).
- 4th Biennial Meeting of the Systematics Association, Trinity College Dublin, Ireland, 18.- 22. August 2003. Talk given: Skull development in *Hypogeophis rostratus* and *Gegeneophis ramaswamii* (Amphibia: Gymnophiona) and its bearing on caecilian intra- and interrelationships.
- 5th World Congress of Herpetology, University of Stellenbosch, South Africa, 19.-24. June 2005. Invited speaker in the "Caecilian symposium in honour of Werner Himstedt", talk given: Caecilian skull development revisited.
- 5th Biennial Meeting of the Systematics Association, Cardiff University and the National Museums and Galleries of Wales, Cardiff, UK, 22.- 26. August 2005. Talk given: Skull development in caecilians and its implications for the reconstruction of the ground pattern of the caecilian skull.
- 6th Argentinean Congress of Herpetology, Parana, Argentina, 21.-23. November 2005. Poster presented: Evolution of direct development in caecilian amphibians, a case study
- Institut für Systematische Zoologie, Naturkundemuseum Berlin, Germany, 21. April 2006. Invited seminar speaker: Schädelentwicklung bei Blindwühlen (Amphibia: Gymnophiona): systematische und evolutionäre Aspekte.
- Faculty of Mathematics and Natural Sciences, Leiden University, The Netherlands, 20. June 2006. Invited speaker for the "Discoveries" seminar series of the faculty: Skull development in caecilian amphibians: systematic and evolutionary implications.
- First and Founding Meeting of the European Society for Evolutionary Developmental Biology, Prague, 16.-19. August 2006. Invited symposium speaker: Development in caecilian amphibians; and poster co-presentation:

Evolution of the genetic and developmental basis of limblessness in caecilian amphibians.

Institut für Spezielle Zoologie und Evolutionsbiologie mit Phyletischem Museum, Friedrich-Schiller-Universität Jena, Germany, 16. November 2006. Invited seminar speaker: Schädelentwicklung bei Blindwühlen (Amphibia: Gymnophiona): systematische und evolutionäre Aspekte.

Palherp 2007 Meeting, Staatliches Museum für Naturkund Stuttgart, Germany, 12.-13. May 2007. Talk given: Schädelevolution bei Blindwühlen.

8th International Congress on Vertebrate Morphology. Paris, France, 16.-21. July 2007. Invited symposium speaker: Morphology of larval caecilians (Amphibians: Gymnophiona); and poster presentation: Development of the skull in the Chinese soft-shelled turtle *Pelodiscus sinensis* (Reptilia: Testudines: Trionychidae).