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## References

- Abel RL, Laurini CR, Richter M. 2012. A palaeobiologist's guide to 'virtual' micro-CT preparation. *Palaeontologia Electronica* 15(2):1-16.
- Ackerly SC. 1989a. Kinematics of accretionary shell growth, with examples from brachiopods and molluscs. *Paleobiology* 15(2):147-164.
- Ackerly SC. 1989b. Shell coiling in gastropods: analysis by stereographic projection. *Palaios* 4:374-378
- Adam H. 1865a. Description of a new genus of land-shells from the Island of Labuan, Borneo. *The Annals and Magazine of Natural History, including Zoology, Botany and Geology* 3(15): 177. <http://www.biodiversitylibrary.org/item/90412#page/859/mode/1up>.
- Adam H. 1865b. Descriptions of a new genus and some new species of mollusks. *Proceedings of the Zoological Society of London* 1865: 753-755. <http://www.biodiversitylibrary.org/item/90954#page/543/mode/1up>.
- Ahmed M, Raut SK. 1991. Influence of temperature on the growth of the pestiferous land snail *Achatina fulica* (Gastropoda: Achatinidae). *Walkerana* 5(13):33-62.
- Alcock J. 1998. *Animal Behavior: An Evolutionary Approach* (6th edition). Sunderland, Mass.: Sinauer Associates, Inc.
- Alexander RR, Dietl GP. 2003. The Fossil Record of Shell-Breaking Predation on Marine Bivalves and Gastropods. In: Kelley PH, Kowalewski M, Hansen TA, ed. *Predator-prey interactions in the fossil record* (Vol. 20). Springer US, 141-176.
- Ali JH, Taakob A. 2001. Diversity and importance of gastropods in Wang Kelian, Perlis. In: Faridah-Hanum I, Osman K, Latiff (Eds) *Kepelbagaian Biologi dan Pengurusan Taman Negeri Perlis: Persekitaran Fizikal dan Biologi Wang Kelian*. Jabatan Perhutanan Perlis, Malaysia, 139-147.
- de Almeida MN, de Almeida Bessa EC. 2001a. Growth and reproduction of *Leptinaria unilamellata* (d'Orbigny) (Mollusca, Subulinidae) in laboratory conditions. *Revista Brasileira de Zoologia* 18(4):1107-1113.
- de Almeida MN, de Almeida Bessa EC. 2001b. Growth and reproduction of *Bradybaena similaris* (Férussac) (Mollusca, Xanthonychidae) in laboratory conditions. *Revista Brasileira de Zoologia* 18(4):1115-1122.
- Allmon WD, Nieh JC, Norris RD. 1990. Drilling and peeling of turrnelline gastropods since the Late Cretaceous. *Palaeontology* 33(3):595-611.
- Allmon WD. 2011. Natural history of turrnelline gastropods (Cerithioidea: Turritellidae): a status report. *Malacologia* 54(1-2):159-202.
- Ancey CF. 1887. Nouvelles contributions malacologiques. *Bulletins de la Société Malacologique de France* 4: 273-288. <http://www.biodiversitylibrary.org/item/54677#page/303/mode/1up>.

## References

- Andrei RM, Callieri M, Zini MF, Loni T, Maraziti G, Pan MC, Zoppè M. 2012. Intuitive representation of surface properties of biomolecules using BioBlender. *BMC Bioinformatics*, 13(Suppl 4):S16.
- Archangelsky M, Branham MA. 1998. Description of the preimaginal stages of *Pyraetomena borealis* (Randall, 1838) (Coleoptera: Lampyridae) and notes on its biology. *Entomological Society of Washington* 100:421-430.
- Arnold SJ. 1992. Constraints on phenotypic evolution. *American Naturalist* 140:S85-S107.
- Atwood JW, Sumrall CD. 2012. Morphometric investigation of the Pentremites fauna from the Glen Dean formation, Kentucky. *Journal of Paleontology* 86(5):813-828.
- D'Avila S, de Almeida Bessa EC. 2005. Influence of substrate on growth of *Subulina octona* (Brugüière) (Mollusca, Subulinidae), under laboratorial conditions. *Revista Brasileira de Zoologia* 22(1):205-211.
- Barker GM. 2004. *Natural enemies of terrestrial molluscs*. CABI.
- Baur B. 1984. Shell size and growth rate differences for alpine populations of *Arianta arbustorum* (L.) (Pulmonata: Helicidae). *Revue suisse de zoologie* 91(1):37-46.
- Baur B, Raboud C. 1988. Life history of the land snail *Arianta arbustorum* along an altitudinal gradient. *The Journal of Animal Ecology* 57(1):71-87.
- Baur A, Baur A, Froberg L. 1994. Herbivory on calcicolous lichens: different food preferences and growth rates in two co-existing land snails. *Oecologia* 98(3-4):313-319.
- Bayer U. 1978. Morphogenetic programs, instabilities and evolution: a theoretical study. *Neues Jahrbuch für Geologie und Paläontologie. Abhandlungen* 156:226-261.
- van Benthem-Jutting WSS. 1932. Notes on land Mollusca of the Malay Archipelago. *Journal of Conchology* 19(7): 196-210.
- van Benthem-Jutting WSS. 1952. The Malayan species of *Opisthostoma* (Gastropoda, Prosobranchia, Cyclophoridae), with a catalogue of all the species hitherto described. *The Bulletin of the Raffles Museum* 24(5): 5-61. <http://rmbr.nus.edu.sg/rbz/biblio/24/24brm005-062.pdf>.
- van Benthem-Jutting WSS. 1960. Non-marine Mollusca of the limestone hills in Malaya. *Proceedings of the Centenary and Bicentenary Congress of Biology*: 63-68.
- van Benthem-Jutting WSS. 1961. Additional new species and new localities of the family Vertiginidae and the genera *Oophana* and *Opisthostoma* from Malaya. *The Bulletin of the National Museum* 26: 34-48. <http://rmbr.nus.edu.sg/rbz/biblio/26/26brm034-048.pdf>.
- van Benthem-Jutting WSS. 1962. Coquilles Terrestres Nouvelles de Quelques Collines Calcaires du Cambodge et du Sud Vietnam. *Journal de Conchyliologie* 102(2): 3-15.

## References

- Berry AJ. 1961. The habitats of some minute cyclophorids, hydrocenids and vertiginids on a Malayan limestone hill. *The Bulletin of the National Museum* 30: 101-105. <http://rmbn.nus.edu.sg/rbz/biblio/30/30bnm101-105.pdf>.
- Berry AJ. 1962. The growth of *Opisthostoma (Plectostoma) retrovertens* Tomlin, a minute cyclophorid from a Malayan limestone hill. *Journal of Molluscan Studies* 35: 46-49. <http://mollus.oxfordjournals.org/content/35/1/46.full.pdf>.
- Berry AJ. 1963. Growth and variation of the shell in certain Malayan limestone hill snails. *Journal of Molluscan Studies* 35: 203-206. <http://mollus.oxfordjournals.org/content/35/5/203.full.pdf>.
- Berry AJ. 1964. The reproduction of the minute cyclophorid snail *Opisthostoma (Plectostoma) retrovertens* from a Malayan limestone hill. *Proceedings of the Zoological Society of London* 142: 655-664. <http://dx.doi.org/10.1111/j.1469-7998.1964.tb04633.x>.
- Berry AJ. 1966. Population structure and fluctuations in the snail fauna of a Malayan limestone hill. *Journal of Zoology* 150: 11-27. <http://dx.doi.org/10.1111/j.1469-7998.1966.tb02996.x>.
- Benson DA, Boguski MS, Lipman DJ, Ostell J. 1997. GenBank. *Nucleic Acids Research* 25(1): 1-6. <http://dx.doi.org/10.1093/nar/gkq1079>.
- Bichain J-M, Boisselier-Dubayle M-C, Bouchet P, Samadi S. 2007. Species delimitation in the genus *Bythinella* (Mollusca : Caenogastropoda : Rissooidea): A first attempt combining molecular and morphometrical data. *Malacologia* 49(2):293-311.
- Bieler R. 1992. Gastropod phylogeny and systematic. *Annual Review of Ecological Systems* 23:311-338.
- Blanford WT, Blanford HF. 1860. Contributions to Indian Malacology. *Journal of the Asiatic Society of Bengal* 29: 117-127. <http://www.biodiversitylibrary.org/item/124448#page/141/mode/1up>.
- Blanford WT. 1866. On *Opisthostoma*, H. Blanford, with description of a new species from the neighbourhood of Bombay, and of the animal and operculum. *Proceedings of the Zoological Society of London* 1866: 447-451. <http://www.biodiversitylibrary.org/item/90954#page/545/mode/1up>.
- Blanford WT. 1867. On the Genus *Plectostoma* H. Adam, and the animal of *Diplommatina* Benson. *The Annals and Magazine of Natural History, including Zoology, Botany and Geology* 3(19): 305-307. <http://www.biodiversitylibrary.org/item/72153#319>.
- Bloch CP, Willig MR. 2009. Effects of competition on size and growth rates of *Caracolus caracolla* (L.) in Puerto Rico. *Journal of Molluscan Studies* 75:133-138.
- Blomberg SP, Garland T, Ives AR. 2003. Testing for phylogenetic signal in comparative data: behavioral traits are more labile. *Evolution* 57(4):717-745.

## References

- Boata A. 1991. Allozyme versus discrete morphological characters in the phylogenetic analysis of the land snail *Solatopupa* (Pulmonata, Chondrinidae). *Bollettino Di Zoologia* 58(4):345-354.
- Van Bocxlaer B, Schultheiß R. 2010. Comparison of morphometric techniques for shapes with few homologous landmarks based on machine-learning approaches to biological discrimination. *Paleobiology* 36(3):497-515.
- Boeters HD, Knebelberger T. 2012. Revision of selected species of *Bythinella* Moquin-Tandon 1856 from Central Europe using morphology, anatomy and DNA barcodes (Caenogastropoda: Rissosoidea). *Archiv für Molluskenkunde* 141(1): 115-136. doi: <http://dx.doi.org/10.1127/arch.moll/1869-0963/141/115-136>.
- Boettger A, Ermentrout B, Oster G. 2009. The neural origins of shell structure and pattern in aquatic mollusks. *Proceedings of the National Academy of Sciences* 106(16):6837-6842.
- Boettger O. 1893. Drei neue Pneumonopomen aus Borneo. *Nachrichtsblatt der Deutschen Malakozoologischen Gesellschaft* 25: 194-197.  
<http://www.biodiversitylibrary.org/item/53280#page/202/mode/1up>.
- Bookstein, F. L. 1977. The study of shape transformation after D'Arcy Thompson. *Mathematical Biosciences* 34:177-219.
- Bookstein, F. L. 1980. When one form is between two others: an application of biorthogonal analysis. *American Zoologists* 20:627-641.
- Bookstein FL. 1991. *Morphometric Tools for Landmark Data: Geometry and Biology*. Cambridge University Press.
- Brandmaier AM. 2012a. *Permutation Distribution Clustering and Structural Equation Model Trees*. Fakultät 6 - Naturwissenschaftlich-Technische Fakultät I, Universität des Saarlandes.
- Brandmaier AM. 2012b. *pdcc: Permutation Distribution Clustering. R package version 0.3*. <http://CRAN.R-project.org/package=pdcc>
- Brown AC, Trueman ER. 1982. Muscles that push snails out of their shells. *Journal of Molluscan Studies* 48:97-98.
- Brusca RC, Brusca GJ. 2003. *Invertebrates*. 2nd edition. Sunderland, MA: Sinauer Associates, Inc.
- Buckley TR, Stringer I, Gleeson D, Howitt R, Attanayake D, Parrish R, Sherley G, Rohan MA. 2011. A revision of the New Zealand *Placostylus* land snails using mitochondrial DNA and shell morphometric analyses, with implications for conservation. *New Zealand Journal of Zoology* 38(1):55-81.
- Cain AJ. 1977. Variation in the spire index of some coiled gastropod shells, and its evolutionary significance. *Philosophical Transactions of the Royal Society of London. B, Biological Sciences* 277:377-428

## References

- Cain A. 1980. Whorl number, shape, and size of shell in some pulmonate faunas. *Journal of Conchology* 30(3):209-221.
- Cameron R. 1981. Functional aspects of shell geometry in some British land snails. *Biological Journal of the Linnean Society* 16(2):157-167.
- Carbayo F, Marques AC. 2011. The costs of describing the entire animal kingdom. *Trends in Ecology and Evolution* 26(4): 154-155. <http://dx.doi.org/10.1016/j.tree.2011.01.004>.
- Cardini A, Loy A. 2013. On growth and form in the "computer era": from geometric to biological morphometrics. *Hystrix, the Italian Journal of Mammalogy*, 24(1), 1-5.
- Cassola, VF, de Melo Lima VJ, Kramer R, Khoury HJ. 2010. FASH and MASH: female and male adult human phantoms based on polygon mesh surfaces: I. Development of the anatomy. *Physics in Medicine and Biology* 55(1):133.
- Chaplin TA, Yu HH, Rosa MG. 2013. Representation of the visual field in the primary visual area of the marmoset monkey: Magnification factors, point-image size, and proportionality to retinal ganglion cell density. *Journal of Comparative Neurology* 521(5):1001-1019.
- Chacon R. 2012. Using Jacobian elliptic functions to model natural shapes. *International Journal of Bifurcation and Chaos* 22(1):1230005.
- Checa A. 1991. Sectorial expansion and shell morphogenesis in molluscs. *Lethaia* 24(1):97-114.
- Checa A, Aguado R. 1992. Sectorial-expansion analysis of irregularly coiled shells: application to the recent gastropod *Distorsio*. *Palaeontology* 35:913-925.
- Checa AG, Jiménez- Jiménez AP, Rivas P. 1998. Regulation of spiral coiling in the terrestrial gastropod *Sphincterochila*: an experimental test of the road-holding model. *Journal of Morphology* 235:249-257.
- Chirat R, Moulton DE, Goriely A. 2013. Mechanical basis of morphogenesis and convergent evolution of spiny seashells. *Proceedings of the National Academy of Sciences* 110(15):6015-6020.
- Chow V. 1987. Patterns of growth and energy allocation in northern California populations of *Littorina* (Gastropoda: Prosobranchia). *Journal of Experimental Marine Biology and Ecology* 110:69-89.
- Cignoni P, Corsini M, Ranzuglia G. 2008. Meshlab: an open-source 3d mesh processing system. *Ercim news* 73:45-46.
- Clarke RK, Grahame J, Mill PJ. 1999. Variation and constraint in the shells of two sibling species of intertidal rough periwinkles (Gastropoda: *Littorina* spp.). *Journal of Zoology* 247(2):145-154.
- Claude J. 2008. *Morphometrics with R*. Springer.

## References

- Clench WJ, Jacobson MK. 1968. Monograph of the Cuban genus *Viana* (Mollusca: Archaeogastropoda: Helicinidae). *Breviora* 298:1-25.
- Clements GR. 2007. Conservation biogeography of terrestrial molluscs on tropical limestone karsts. MSC thesis. National University of Singapore.
- Clements R, Ng PKL, Lu XX, Ambu S, Schilthuizen M, Bradshaw CJA. 2008. Using biogeographical patterns of endemic land snails to improve conservation planning for limestone karsts. *Biological conservation* 141: 2751–2764.  
<http://dx.doi.org/10.1016/j.biocon.2008.08.011>.
- Clements R, Liew T-S, Schilthuizen M, Vermeulen JJ. 2008. Further twists in gastropod shell evolution. *Biology Letter* 4:179-182.
- Clements R. 2009a. *Opisthostoma sciaphilum*. In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 26 November 2013.
- Clements R. 2009b. *Opisthostoma senex*. In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 26 November 2013.
- Clements R. 2009c. *Opisthostoma retrovertens*. In: IUCN 2013. IUCN Red List of Threatened Species. Version 2013.2. <[www.iucnredlist.org](http://www.iucnredlist.org)>. Downloaded on 26 November 2013.
- Cock PJ, Antao T, Chang JT, Chapman BA, Cox CJ, Dalke A, Friedberg I, Hamelryck T, Kauff F, Wilczynski B, de Hoon MJ. 2009). Biopython: freely available Python tools for computational molecular biology and bioinformatics. *Bioinformatics* 25(11): 1422-1423.  
<http://dx.doi.org/10.1093/bioinformatics/btp163>.
- Cortie MB. 1989. Models for mollusk shell shape. *South African Journal of Science* 85(7):454-460.
- Cortie MB. 1993. Digital seashells. *Computers & graphics* 17(1):79-84.
- Cracraft J. 1983. Species concepts and speciation analysis. *Current Ornithology* 1: 159-187.
- de Crespigny CC. 1865. Note on a shell from Labuan. *The Natural History Review* 5(20): 599. <http://www.biodiversitylibrary.org/page/9749440#page/609/mode/1up>.
- Criscione F, Koehler F. 2013. Conserved shell disguises diversity in *Mesodontrachia* land snails from the Australian Monsoon Tropics (Gastropoda: Camaenidae). *Zoologica Scripta* 42(4):389-405.
- Criscione F, Law ML, Koehler F. 2012. Land snail diversity in the monsoon tropics of Northern Australia: revision of the genus *Exiligada* Iredale, 1939 (Mollusca: Pulmonata: Camaenidae), with description of 13 new species. *Zoological Journal of the Linnean Society* 166(4):689-722.

## References

- Crosse H. 1892. Études malacologiques sur les genres nouveaux ou peu connus. *Journal de Conchyliologie* 32: 279-292.  
<http://www.biodiversitylibrary.org/page/25234590#page/292/mode/1up>.
- D'ávila S, Bessa E. 2005. Influence of substrate on reproduction of *Subulina octona* (Brugüière)(Mollusca, Subulinidae), under laboratorial conditions. *Revista Brasileira de Zoologia* 22(1):197-204.
- Darriba D, Taboada GL, Doallo R, Posada D. 2012. jModelTest 2: more models, new heuristics and parallel computing. *Nature Methods* 9(8):772-772.
- Davison A, Blackie RL, Scothern GP. 2009. DNA barcoding of stylommatophoran land snails: a test of existing sequences. *Molecular Ecology Resources* 9(4): 1092-1101.  
<http://dx.doi.org/10.1111/j.1755-0998.2009.02559.x>.
- Davison GWH, Kiew R. 1990. *Survey of Flora and Fauna of Limestone Hills in Kelantan, with Recommendations for Conservation, Kuala Lumpur*. Worldwide Fund for Nature Malaysia.  
[http://repository.wwf.org.my/technical\\_reports/S/1990\\_SurveyOfFloraAndFaunaOfLimestoneHillsInKelantanWithRecommendationsForConservation\\_GWHDavidson\\_RKiew.pdf](http://repository.wwf.org.my/technical_reports/S/1990_SurveyOfFloraAndFaunaOfLimestoneHillsInKelantanWithRecommendationsForConservation_GWHDavidson_RKiew.pdf).
- Dautzenberg P, Fischer H. 1905. Liste des mollusques récoltés par M.H. Mansuy en Indo-Chine et au Yunnan et description d'espèces nouvelles. *Journal de Conchyliologie* 53: 343-471. <http://www.biodiversitylibrary.org/item/55051#page/379/mode/1up>.
- Davoli E, Russo F. 1974. Una metodologia paleontometrica basata sul modello di Raup: Verifica sperimentale su rappresentanti follili del gen. *Subula* Schumacher. *Bollettino della Societa Paleontologica Italiana* 13:108-121.
- Deans AR, Yoder MJ, Balhoff JP. 2012. Time to change how we describe biodiversity. *Trends in Ecology and Evolution* 27(2): 78-84. <http://dx.doi.org/10.1016/j.tree.2011.11.007>
- Dera G, Eble GJ, Neige P, David B. 2009. The flourishing diversity of models in theoretical morphology: from current practices to future macroevolutionary and bioenvironmental challenges. *Paleobiology* 34 (3):301-317.
- DeWitt TJ, Sih A, Hucko JA. 1999. Trait compensation and cospecialization in a freshwater snail: size, shape and antipredator behaviour. *Animal Behaviour* 58(2):397-407.
- DeWitt TJ, Langerhans RB. 2003. Multiple prey traits, multiple predators: keys to understanding complex community dynamics. *Journal of Sea Research* 49:143-155.
- Du L, Yang J, von Rintelen T, Chen X, Aldridge D. 2013. Molecular phylogenetic evidence that the Chinese viviparid genus *Margarya* (Gastropoda: Viviparidae) is polyphyletic. *Chinese Science Bulletin* 58:2154-2162.
- Edwards JL. 2004. Research and societal benefits of the Global Biodiversity Information Facility. *BioScience* 54(6): 486-487.  
[http://dx.doi.org/10.1641/0006-3568\(2004\)054\[0486:RASBOT\]2.0.CO;2](http://dx.doi.org/10.1641/0006-3568(2004)054[0486:RASBOT]2.0.CO;2).



## References

- Ekaratne SUK, Crisp DJ. 1983. A geometric analysis of growth in gastropod shells, with particular reference to turbinate forms. *Journal of the Marine Biological Association of the United Kingdom* 63(4):777-797.
- Elejalde M, Munoz B, Arrebola J, Gomez-Moliner B. 2005. Phylogenetic relationships of *Iberus gualtieranus* and *I. Alonensis* (Gastropoda : Helicidae) based on partial mitochondrial 16S rRNA and COI gene sequences. *Journal of Molluscan Studies* 71(4):349-355.
- Elejalde MA, Madeira MJ, Arrebola JR, Munoz B, Gomez-Moliner BJ. 2008a. Mitochondrial DNA diversity and taxa delineation in the land snails of the *Iberus gualtieranus* (Pulmonata, Helicidae) complex. *Zoological Journal of the Linnean Society* 154(4):722-737.
- Elejalde MA, Madeira MJ, Arrebola JR, Munoz B, Gomez-Moliner BJ. 2008b. Molecular phylogeny, taxonomy and evolution of the land snail genus *Iberus* (Pulmonata: Helicidae). *Journal of Zoological Systematics and Evolutionary Research* 46(3):193-202.
- Elkarmi AZ, Ismail NS. 2007. Growth models and shell morphometrics of two populations of *Melanoides tuberculata* (Thiaridae) living in hot springs and freshwater pools. *Journal of Limnology* 66(2):90-96.
- Emberton K. 1994. Polygyrid land snail phylogeny: external sperm exchange, early North American biogeography, iterative shell evolution. *Biological Journal of the Linnean Society* 52(3): 241-271.
- Emberton K. 1995. Cryptic, genetically extremely divergent, polytypic, convergent, and polymorphic taxa in Madagascan *Tropidophora* (Gastropoda: Pomatiasidae). *Biological Journal of the Linnean Society* 55(3):183-208.
- Evans AR. 2013. Shape descriptors as ecometrics in dental ecology. *Hystrix, the Italian Journal of Mammalogy*, 24(1), 8.
- Faghih Shojaei M, Mohammadi V, Rajabi H, Darvizeh A. 2012. Experimental analysis and numerical modeling of mollusk shells as a three dimensional integrated volume. *Journal of the Mechanical Behavior of Biomedical Materials* 16:38-54.
- Faulwetter S, Vasileiadou A, Kouratoras M, Dailianis T, Arvanitidis C. 2013. Micro-computed tomography: Introducing new dimensions to taxonomy. *ZooKeys* 263: 1-45. <http://dx.doi.org/10.3897/zookeys.263.4261>.
- Fiorentino V, Salomone N, Manganelli G, Giusti F. 2008. Phylogeography and morphological variability in land snails: the *Sicilian Marmorana* (Pulmonata, Helicidae). *Biological Journal of the Linnean Society* 94(4):809-823.
- Fischer PH. 1963. Mollusques terrestres de l'Indo-Chine et du Yunnan conservés dans la collection de l'École des Mines de Paris. *Journal de Conchyliologie* 103: 32-37.
- Folmer O, Black M, Hoeh W, Lutz RA, Vrijenhoek RC. 1994. DNA primers for amplification of mitochondrial Cytochrome Oxidase Subunit I from diverse metazoan invertebrates. *Molecular Marine Biology and Biotechnology* 3:294-299.

## References

- Foote M, Cowie RH. 1988. Developmental Buffering as a Mechanism for Stasis: Evidence from the Pulmonate *Theba pisana*. *Evolution* 42(2):396-399.
- Fournié J, Chétail M. 1984. Calcium dynamics in land gastropods. *American Zoologist* 24:857-870.
- Fowler DR, Meinhardt H, Prusinkiewicz P. 1992. Modeling seashells. *ACM SIGGRAPH Computer Graphics* 26(2):379-387.
- Frescura M, Hodson AN. 1992. The fine structure of the collumellar muscle of some gastropod mollusks. *Veliger* 35(4):308-315.
- Fryda J, Ferrová L. 2011. The oldest evidence of non-coaxial shell heterostrophy in the Class Gastropoda. *Bulletin of Geosciences* 86(4):765-776.
- Fulton HC. 1901. Descriptions of some supposed new species of *Diplommatina*, *Opisthostoma*, and a new variety of *Alycaeus* from N. Borneo, Banguay Island, and Darjeeling. *The Annals and Magazine of Natural History, including Zoology, Botany and Geology* 7(8): 242-245. <http://biodiversitylibrary.org/item/94923#page/270/mode/1up>.
- Galbraith C, Prusinkiewicz P, Wyvill B. 2002. Modeling a *Murex cabritii* sea shell with a structured implicit surface modeler. *The Visual Computer* 18(2):70-80.
- Ghosh E. 1913. XV. Mollusca, I: Rathouisiidae. *Records of the Indian Museum* 8:209-227.
- Giam X, Scheffers BR, Sodhi NS, Wilcove DS, Ceballos G, Ehrlich PR. 2011. Reservoir of richness: least disturbed tropical forests are centres of undescribed species diversity. *Proceedings of the Royal Society B: Biological Sciences* 279(1726): 67-76. <http://dx.doi.org/10.1098/rspb.2011.0433>.
- Gittenberger E. 1996. Adaptations of the aperture in terrestrial gastropod-pulmonate shells. *Netherlands Journal of Zoology* 46(3-4):191-205.
- Godefroy JE, Bornert F, Gros CI, Constantinesco A. 2012. Elliptical Fourier descriptors for contours in three dimensions: A new tool for morphometrical analysis in biology. *Comptes rendus biologiques* 335(3):205-213.
- Godwin-Austen HH. 1889. On a collection of land-shells made in Borneo by Mr. A. Everett, with descriptions of supposed new species. *Proceedings of the Zoological Society of London* 1889: 332-355. <http://www.biodiversitylibrary.org/item/96894#462>.
- Godwin-Austen HH. 1890. On a collection of land-shells made in Borneo by Mr. A. Everett, with descriptions of supposed new species. Part 1: Cyclostomacea. *The Annals and Magazine of Natural History, including Zoology, Botany and Geology* 6(6): 244-246. <http://biodiversitylibrary.org/item/63336#page/271/mode/1up>.
- Goodfriend GA. 1983. Some new methods for morphometric analysis of gastropod shells. *Malacological Review* 16:79-86.

## References

- Goodfriend GA. 1986. Variation in land-snail shell form and size and its causes: a review. *Systematic Biology* 35(2):204-223.
- Gould SJ. 1968. Ontogeny and the explanation of form: an allometric analysis. *Paleontological Society Memoir* 2:81-98.
- Gould SJ. 1969. Ecology and functional significance of uncoiling in *Vermicularia spirata*: an essay on gastropod form. *Bulletin of Marine Science* 19(2):432-445.
- Gould SJ. 1984. Morphological channeling by structural constraint: convergence in styles of dwarfing and gigantism in *Cerion*, with a description of two new fossil species and a report on the discovery of the largest *Cerion*. *Paleobiology* 10(2):172-194.
- Gould SJ. 1989. A developmental constraint in *Cerion*, with comments of the definition and interpretation of constraint in evolution. *Evolution* 43(3):516-539.
- Graus RR. 1974. Latitudinal trends in the shell characteristics of marine gastropods. *Lethaia*, 7(4):303-314.
- Gwinn NE, Rinaldo C. 2009. The Biodiversity Heritage Library: sharing biodiversity literature with the world. *International Federation of Library Associations Journal* 35:25-34. <http://dx.doi.org/10.1177/0340035208102032>.
- Haase M, Esch S, Misof B. 2013. Local adaptation, refugial isolation and secondary contact of Alpine populations of the land snail *Arianta arbustorum*. *Journal of Molluscan Studies* 79:241-248.
- Hall TA .1999. BioEdit: a user-friendly biological sequence alignment editor and analysis program for Windows 95/98/NT. *Nucleic acids symposium series* 41: 95-98. <http://www.mbio.ncsu.edu/bioedit/bioedit.html>.
- Hammer Ø. 2000. A theory for the formation of commarginal ribs in mollusc shells by regulative oscillation. *Journal of Molluscan Studies* 66(3):383-392.
- Harary G, Tal A. 2011. The natural 3D spiral. *Computer Graphics Forum* 30(2):237-246).
- Hardy OJ, Pavoine S. 2012. Assessing phylogenetic signal with measurement error: a comparison of Mantel tests, Blomberg et al.'s K, and phylogenetic distograms. *Evolution* 66:2614-2621
- Harmon LJ, Weir JT, Brock CD, Glor RE, Challenger W. 2008. GEIGER: investigating evolutionary radiations. *Bioinformatics* 24(1):129-131.
- Haug JT, Maas A, Waloszek D. 2009. Ontogeny of two Cambrian stem crustaceans, †*Gotiscaris longispinosa* and †*Cambropachycope clarksoni*. *Palaeontographica A* 289:1-43.
- Haug JT, Waloszek D, Haug C, Maas A. 2010. High-level phylogenetic analysis using developmental sequences: The Cambrian †*Martinssononia elongata*, †*Musacaris gerdgeyeri* gen. et sp. nov. and their position in early crustacean evolution. *Arthropod Structure & Development* 39(2):154-173.

## References

- Haug C, Haug JT, Fayers SR, Trewin NH, Castellani C, Waloszek D, Maas A. 2012. Exceptionally preserved nauplius larvae from the Devonian Windyfield chert, Rhynie, Aberdeenshire, Scotland. *Palaeontologia Electronica* 15:2-24.
- Heath DJ. 1985. Whorl overlap and the economical construction of the gastropod shell. *Biological Journal of the Linnean Society* 24:165-174.
- Hebert PDN, Ratnasingham S, deWaard JR. 2003. Barcoding animal life: cytochrome oxidase subunit 1 divergences among closely related species. *Proceedings of the Royal Society of London. Series B: Biological Sciences* (Suppl.) 270: S96-S99. <http://dx.doi.org/10.1098/rsbl.2003.0025>.
- Hedgpeth JW. 1961. *Taxonomy: Man's Oldest Profession*. 11th Annual University of the Pacific Faculty Lecture, Stockton, California, USA. 19 pp.
- Heller J. 2001. Life History Strategies. In Barker GM (Ed) *The Biology of Terrestrial Molluscs*. CABI Publishing, Oxon, UK, 413-445.
- Hemmen J, Hemmen C. 2001. Aktualisierte Liste der terrestrischen Gastropoden Thailands. *Schriften zur Malakozoologie - aus dem Haus der Natur Cismar* 18: 35-70.
- Henry PY, Jarne P. 2007. Marking hard-shelled gastropods: tag loss, impact on life-history traits, and perspectives in biology. *Invertebrate Biology* 126(2):138-153.
- Heude PM. 1882-1890. Notes sur les mollusques terrestres de la vallee du Fleuve Bleu. *Mémoires concernant l'histoire naturelle de l'Empire Chinois*: 1-179.
- Heywood VH. 1974. Systematics – the stone of Sisyphus. *Biological Journal of the Linnean Society* 6: 169-178. <http://dx.doi.org/10.1111/j.1095-8312.1974.tb00721.x>.
- Hoekstra P, Schilthuizen M. 2011. Phylogenetic relationships between isolated populations of the limestone-dwelling microsnail *Gyliotrachela hungerfordiana* (Gastropoda: Vertiginidae). *Journal of Zoological Systematics and Evolutionary Research* 49(4): 266-272. <http://dx.doi.org/10.1111/j.1439-0469.2011.00623.x>.
- Hoso M. 2012. Cost of autotomy drives ontogenetic switching of anti-predator mechanisms under developmental constraints in a land snail. *Proceedings of the Royal Society B: Biological Sciences* 279(1748):4811-4816.
- Hoso M, Hori M. 2008. Divergent shell shape as an antipredator adaptation in tropical land snails. *The American Naturalist* 172(5):726-732.
- Hoso M, Kameda Y, Wu S P, Asami T, Kato M, Hori M. 2010. A speciation gene for left-right reversal in snails results in anti-predator adaptation. *Nature communications* 1: 133.
- Huelsenbeck JP, Ronquist F. 2001. MRBAYES: Bayesian inference of phylogenetic trees. *Bioinformatics* 17(8): 754-755. <http://dx.doi.org/10.1093/bioinformatics/17.8.754>.
- Hutchinson JMC. 1989. Control of gastropod shell shape; the role of the preceding whorl. *Journal of Theoretical Biology* 104:431-444.

## References

- Hutchinson JMC. 1999. But which morphospace to choose?: Theoretical Morphology by GR McGhee, Jr. *Trends in Ecology & Evolution* 14:414.
- Iller C. 1983. The mathematics of gnomonic seashells. *Mathematical Biosciences* 63:21-56.
- Illert C. 1987. Formulation and solution of the classical seashell problem. *II Nuovo Cimento D*. 9: 791–814. <http://dx.doi.org/10.1007/BF02453750>.
- Illert C, Pickover CA. 1992. Generating irregularly oscillating fossil seashells. *Computer Graphics and Applications, IEEE* 12(3):18-22.
- Im CH, Park JH, Shim M, Chang WH, Kim YH. 2012. Evaluation of local electric fields generated by transcranial direct current stimulation with an extracephalic reference electrode based on realistic 3D body modeling. *Physics in Medicine and Biology* 57(8):2137.
- Ito Y, Jenkins R, Ichikawa T, Sasaki T, Tanabe K. 2009. *Catalogue of Type and Cited Specimens in the Department of Historical Geology and Paleontology of the University Museum*. The University of Tokyo.
- IUCN Standards and Petitions Subcommittee. 2013. *Guidelines for Using the IUCN Red List Categories and Criteria*. Version 10.1. Prepared by the Standards and Petitions Subcommittee.
- Johnson DS. 1964. A question of nomenclature. *Malayan Nature Journal* 18: 68–69.
- Johnson M, Black R. 1991. Growth, survivorship, and population size in the land snail *Rhagada convicta* Cox, 1870 (Pulmonata: Camaenidae) from a semiarid environment in Western Australia *Journal of Molluscan Studies* 57(3):367-374.
- Johnson M, Hamilton Z, Murphy C, MacLeay C, Roberts B, Kendrick P. 2004. Evolutionary genetics of island and mainland species of *Rhagada* (Gastropoda : Pulmonata) in the Pilbara Region, Western Australia. *Australian Journal of Zoology* 52(4):341-355.
- Johnson MS, Hamilton ZR, Teale R, Kendrick PG. 2012. Endemic evolutionary radiation of *Rhagada* land snails (Pulmonata: Camaenidae) in a continental archipelago in northern Western Australia. *Biological Journal of the Linnean Society* 106(2):316-327.
- Johnston MR, Tabachnick RE, Bookstein FL. 1991. Landmark-based morphometrics of spiral accretionary growth. *Paleobiology* 17(1):19-36.
- Kaesler RL, Waters JA. 1972. Fourier analysis of the ostracode margin. *Geological Society of America Bulletin* 83(4):1169-1178.
- Kado Y. 1960. Studies on shell formation in molluscs. *Journal of science of the Hiroshima University Series B Div. I (Zool)* 19:163-210.
- Kameda Y, Kawakita A, Kato M. 2007. Cryptic genetic divergence and associated morphological differentiation in the arboreal land snail *Satsuma* (Luchuhadra) largillierti (Camaenidae) endemic to the Ryukyu Archipelago, Japan. *Molecular Phylogenetics and Evolution* 45(2):519-533.

## References

- Kawaguchi Y. 1982. A morphological study of the form of nature. *Computer Graphics* 16:223-232.
- Kelley PH, Hansen TA. 2003. The fossil record of drilling predation on bivalves and gastropods. In: Kelley PH, Kowalewski M, Hansen TA, ed. *Predator-prey interactions in the fossil record* (Vol. 20). Springer US, 113-139.
- Kemp P, Bertness MD. 1984. Snail shape and growth rates; evidence for plastic shell allometry in *Littorina littorea*. *Proceedings of the National Academy of Sciences* 81:811-813.
- Ketmaier V, Giusti F, Caccone A. 2006. Molecular phylogeny and historical biogeography of the land snail genus *Solatopupa* (Pulmonata) in the peri-Tyrrhenian area. *Molecular Phylogenetics and Evolution* 39(2):439-451.
- Kier W. 1988. The arrangement and function of molluscan muscle. In: Trueman E, Clarke M, ed. *The Mollusca* (Volume 11), *Form and Function*. Academic Press, New York, 211-252
- Kimura M. 1980. A simple method for estimating evolutionary rate of base substitutions through comparative studies of nucleotide sequences. *Journal of Molecular Evolution* 16:111-120.
- Klingenberg CP. 2013. Visualizations in geometric morphometrics: how to read and how to make graphs showing shape changes. *Hystrix, the Italian Journal of Mammalogy*, 24(1), 10.
- Kobayashi SR, Hadfield MG. 1996. An experimental study of growth and reproduction in the Hawaiian tree snails *Achatinella mustelina* and *Partulina redfieldii* (Achatinellinae). *Pacific Science* 50(4):339-354.
- Koehler F, Johnson MS. 2012. Species limits in molecular phylogenies: a cautionary tale from Australian land snails (Camaenidae: Amplirhagada Iredale, 1933). *Zoological Journal of the Linnean Society* 165(2):337-362.
- Köhler F, Johnson MS. 2012. Species limits in molecular phylogenies: a cautionary tale from Australian land snails (Camaenidae: Amplirhagada Iredale, 1933). *Zoological Journal of the Linnean Society* 165(2): 337-362. <http://dx.doi.org/10.1111/j.1096-3642.2011.00810.x>.
- Kohn AJ, Riggs AC. 1975. Morphometry of the *Conus* shell. *Systematic Zoology* 24:346-359.
- Konumu J, Chiba S. 2007. Trade-Offs between Force and Fit: Extreme Morphologies Associated with Feeding Behavior in Carabid Beetles. *The American Naturalist* 170(1):90-100.
- Kotsakiozi P, Rigal F, Valakos E, Parmakelis A. 2013. Disentangling the effects of intraspecies variability, phylogeny, space, and climate on the evolution of shell morphology in endemic Greek land snails of the genus *Codringtonia*. *Biological Journal of the Linnean Society* 110(4):796-813.
- Kowalewski M, Dulai A, Fürsich FT. 1998. A fossil record full of holes: the Phanerozoic history of drilling predation. *Geology* 26(12):1091-1094.

## References

- Kramarenko SS, Popov VN. 1999. Specific features of reproduction and growth of the terrestrial mollusk *Eobania vermiculata* (Müller, 1774) (Gastropoda; Pulmonata; Helicidae) under laboratory conditions. *Russian Journal of Ecology* 30(4):269-272.
- Kuhl FP, Giardina CR. 1982. Elliptic Fourier features of a closed contour. *Computer Graphics and Image Processing* 18(3):236-258.
- Kurozumi T. 1985. Evidence of slug predation on land snail eggs. *Applied Entomology and Zoology* 20(4):490-491.
- Kuźnik-Kowalska E, Lewandowska M, Pokryszko BM, Proćków M. 2013. Reproduction, growth and circadian activity of the snail *Bradybaena fruticum* (OF Müller, 1774) (Gastropoda: Pulmonata: Bradybaenidae) in the laboratory. *Central European Journal of Biology* 8(7):693-700.
- Laidlaw FF. 1928. A list of the land and fresh-water Mollusca of the Malay peninsula with notes. *Journal of the Malaysian Branch of the Royal Asiatic Society* 6: 25-37.
- Laxton JH. 1970. Shell growth in some New Zealand Cymatiidae (Gastropoda: Prosobranchia). *Journal of Experimental Marine Biology and Ecology* 4(3):250-260.
- Lazaridou-Dimitriadadou M. 1995. The life-cycle, demographic-analysis, growth and secondary production of the snail *Helicella (Xerothracia) Pappi* (Schutt, 1962) (Gastropoda Pulmonata) in E. Macedonia (Greece). *Malacologia* 37(1):1-11.
- Lee Y-C, Lue K-Y, Wu W-L. 2012. The Phylogeny and Morphological Adaptations of *Cyclotus taiwanus* ssp. (Gastropoda: Cyclophoridae). *Malacologia* 55(1):91-105.
- Lewiner T, Gomes Jr JD, Lopes H, Craizer M. 2005. Curvature and torsion estimators based on parametric curve fitting. *Computers & Graphics* 29(5):641-655.
- Liew T-S, Schilthuizen M, Vermeulen JJ. 2009. Systematic revision of the genus *Everettia* Godwin-Austen, 1891 (Mollusca: Gastropoda: Dyakiidae) in Sabah, northern Borneo. *Zoological Journal of the Linnean Society* 157(3): 515-550. <http://dx.doi.org/10.1111/j.1096-3642.2009.00526.x>.
- Linsley RM. 1977. Some "laws" of gastropod shell form. *Paleobiology* 3:196-206.
- Linsley RM (1978) Shell form and the evolution of gastropods. *American Scientist* 66:432-441.
- Linsley RM, Javidpour M. 1980. Episodic growth in Gastropoda. *Malacologia* 20(1):153-160.
- Løvtrup S, von Sydow B. 1974. D'Arcy Thompson's theorems and the shape of the molluscan shell. *Bulletin of Mathematical Biology* 36:567-575.
- Lv Z, Tek A, Da Silva F, Empereur-mot C, Chavent M, Baaden M. 2013. Game On, Science-How Video Game Technology May Help Biologists Tackle Visualization Challenges. *PLoS ONE* 8(3):e57990.

## References

- Maassen WJM. 2001. Four new Diplommatinidae (Gastropoda, Prosobranchia, Diplommatinidae) from southern Thailand and northern Peninsular Malaysia. *Basteria* 65(1-3):51-56.
- Maassen WJM. 2002. Remarks on the Diplommatinidae from Sumatra, Indonesia, with descriptions of eleven new species (Gastropoda, Prosobranchia). *Basteria* 66: 163-182.
- Maddison DR, Guralnick R, Hill A, Reysenbach AL, McDade LA. 2012. Ramping up biodiversity discovery via online quantum contributions. *Trends in Ecology and Evolution* 27(2): 72-77. <http://dx.doi.org/10.1016/j.tree.2011.10.010>.
- Maddison WP, Maddison DR. 2011. *Mesquite: a modular system for evolutionary analysis*. Version 2.75 <http://mesquiteproject.org>
- Madruga Rios O, Hernández Quinta M. 2010. Larval Feeding Habits of the Cuban Endemic Firefly *Alecton discoidalis* Laporte (Coleoptera: Lampyridae). *Psyche: A Journal of Entomology* 2010:Article ID 149879, 5 pages, doi:10.1155/2010/149879
- Malayan Nature Society. 1991. *A conservation assessment of limestone hills in the Kinta Valley*. 210 pages.
- von Martens E, Thiele J. 1908. Beschreibung einiger im östlichen Borneo von Martin Schmidt gesammelten Land und Süßwasser-Conchylien. *Mitteilungen aus dem Zoologischen Museum in Berlin* 4: 251-294.  
<http://www.biodiversitylibrary.org/item/44411#page/272/mode/1up>.
- Martin R, Bergey E. 2013. Growth plasticity with changing diet in the land snail *Patera appressa* (Polygyridae). *Journal of Molluscan Studies* 79(4):364-368.
- Martinez-Orti A, Arantzazu Elejalde M, Jose Madeira M, Gomez-Moliner B. 2008. Morphological and DNA-based taxonomy of *Tudorella* P. Fischer, 1885 (Caenogastropoda : Pomatiidae). *Journal of Conchology* 39(5):553-567.
- Maxted N. 1992. Towards defining a taxonomic revision methodology. *Taxon* 41: 653-660.
- Mayer G, Haug J, Maas A, Waloszek D. 2012. Functional aspects of the gammaridean mandibles with special reference to the lacinia mobilis (Crustacea, Amphipoda). *Zoologischer Anzeiger-A Journal of Comparative Zoology* 252:536-547.
- Mayr E. 1942. *Systematics and the Origin of Species: From the Viewpoint of a Zoologist*. Harvard University Press.
- McGhee GR. 1978. Analysis of the shell torsion phenomenon in the Bivalvia. *Lethaia* 11(4):315-329.
- McGhee GR. 1999. *Theoretical Morphology: the Concept and Its Applications*. Columbia University Press.
- McGhee GR. 2007. *The Geometry of Evolution: Adaptive Landscapes and Theoretical Morphospaces*. New York: Cambridge University Press.



## References

- Meinhardt H. 2009. *The Algorithmic Beauty of Sea Shells*. Springer.
- Meireles LM, Silva LC, Junqueira FO, Bessa EC. 2008. The influence of diet and isolation on growth and survival in the land snail *Bulimulus tenuissimus* (Mollusca: Bulimulidae) in laboratory. *Revista Brasileira de Zoologia* 25(2):224-227 .
- Mesibov R. 2012. Known unknowns, Google earth, plate tectonics and Mt Bellenden Ker: some thoughts on locality data. *Zookeys* 247: 61-67.  
<http://dx.doi.org/10.3897/zookeys.247.4195>.
- Miller J, Dikow T, Agosti D, Sautter G, Catapano T, Penev L, Zhang Z-Q, Pentcheff D, Pyle R, Blum S, Parr C, Freeland C, Garnett T, Ford LS, Muller B, Smith L, Strader G, Georgiev T, Bénichou L. 2012. From taxonomic literature to cybertaxonomic content. *BMC Biology* 10: 87. <http://dx.doi.org/10.1186/1741-7007-10-87>.
- Miller MA, Pfeiffer W, Schwartz T. 2010. *Creating the CIPRES Science Gateway for inference of large phylogenetic trees*. In Gateway Computing Environments Workshop (GCE), 2010: 1-8. <http://www.phylo.org/index.php/portal/>.
- von Moellendorff O. 1902. Binnenmollusken aus Hinterindien:1. Landschnecken von Kelantan, Ostküste der Halbinsel Malacca. *Nachrichtenblatt der Deutschen Malakozoologischen Gesellschaft* 34: 135-149.  
<http://www.biodiversitylibrary.org/page/15598866#page/525/mode/1up>.
- Monnet C, Zollikofer C, Bucher H, Goudemand N. 2009. Three-dimensional morphometric ontogeny of mollusc shells by micro-computed tomography and geometric analysis. *Paleontologia Electronica* 12(3/12A):1-13.
- Mora C, Tittensor DP, Adl S, Simpson AGB, Worm B. 2011. How many species are there on earth and in the ocean? *PLoS Biology* 9(8): e1001127.  
<http://dx.doi.org/10.1371/journal.pbio.1001127>.
- Moreno-Rueda G. 2009. Disruptive selection by predation offsets stabilizing selection on shell morphology in the land snail *Iberus g. gualtieranus*. *Evolutionary Ecology* 23(3):463-471.
- Morita R. 1991a. Finite element analysis of a double membrane tube (DMS-tube) and its implication for gastropod shell morphology. *Journal of Morphology* 207:81-92.
- Morita R. 1991b. Mechanical constraints on aperture form in gastropods. *Journal of Morphology* 207:93-102.
- Morita R. 1993. Development mechanics of retractor muscles and the “Dead Spiral Model” in gastropod shell morphogenesis. *Neues Jahrbuch für Geologie und Palaöontologie Abhandlungen* 190:191-217.
- Morita R. 2003. Why do univalve shells of gastropods coil so tightly? A head-foot guidance model of shell growth and its implication on developmental constraints. In: Sekimura T, Noji S, Ueno N, Maini PK, editors. *Morphogenesis and pattern formation in biological systems: experiments and models*. Tokyo: Springer. p 345–354.

## References

- Moseley H. 1838. On the geometrical forms of turbinated and discoid shells. *Philosophical Transactions of the Royal Society of London* 128:351-370.
- Moulton DE, Goriely A. 2012. Surface growth kinematics via local curve evolution. *Journal of Mathematical Biology*: 1-28.
- Moulton DE, Goriely A, Chirat R. 2012. Mechanical growth and morphogenesis of seashells. *Journal of Theoretical Biology* 311:69-79.
- Nabhitabhata J. 2009. *Checklist of Molluscan Fauna in Thailand*. Office of Natural Resources and Environmental Policy and Planning, Bangkok, Thailand. 576 pages.
- Nakazawa M. 2012. *fmsb: Functions for Medical Statistics Book with Some Demographic Data. R package version 0.4.1*. <http://CRAN.R-project.org/package=fmsb>
- Newkirk GF, Doyle RW. 1975. Genetic analysis of shell-shape variation in *Littorina saxatilis* on an environmental cline. *Marine Biology* 30(3):227-237.
- Nishi H, Sota T. 2007. Geographical divergence in the Japanese land snail *Euhadra herklotsi* inferred from its molecular phylogeny and genital characters. *Zoological Science* 24(5):475-485.
- Norhanis MR, Aileen Tan SH, Zulfigar Y, Panha S, Sutcharit C, Tongkerd P. 2010. An annotated checklist of micro-landsnails from limestone areas in Langkawi Islands, Kedah, Peninsular Malaysia. *Malayan Nature Journal* 62(3): 307-313.
- Noshita K. 2010. Spiral Shell Form: A computer software package for theoretical morphological analysis of spiral shell form. *Geoscience reports of Shizuoka University* 37:57-73. (In Japanese)
- Noshita K, Asami T, Ubukata T. 2012. Functional constraints on coiling geometry and aperture inclination in gastropods. *Paleobiology* 38(2):322-334.
- Nylander JAA. 2004. MrModeltest 2.3 (program distributed by the author) Evolutionary Biology Centre. Uppsala University, Sweden.  
<http://www.ebc.uu.se/systzoo/staff/nylander.html>.
- Okajima R, Chiba S. 2009. Cause of bimodal distribution in the shape of a terrestrial gastropod. *Evolution* 63(11):2877-2887.
- Okajima R, Chiba S. 2011. How does life adapt to a gravitational environment? The outline of the terrestrial gastropod shell. *The American Naturalist* 178(6):801-809.
- Okajima R, Chiba S. 2012. Adaptation from restricted geometries: the shell inclination of terrestrial gastropods. *Evolution* 67:429-437.
- Okamoto T. 1988. Analysis of heteromorph ammonoids by differential geometry. *Palaeontology* 31(1):35-52.

## References

- Oliphant TE. 2007. Python for scientific computing. *Computing in Science & Engineering* 9(3):10-20.
- Olson SL, Hearty PJ. 2010. Predation as the primary selective force in recurrent evolution of gigantism in *Poecilozonites* land snails in Quaternary Bermuda. *Biology letters* 6(6):807-810.
- Oosterhoff LM. 1977. Variation in growth rate as an ecological factor in the landsnail *Cepaea nemoralis* (L.). *Netherlands Journal of Zoology* 27(1):1-132.
- Padial JM, Miralles A, De la Riva I, Vences M. 2010. The integrative future of taxonomy. *Frontiers in Zoology* 7: 16. <http://dx.doi.org/10.1186/1742-9994-7-16>.
- Page RDM. 2011. Extracting scientific articles from a large digital archive: Biostor and the Biodiversity Heritage Library. *BMC Bioinformatics* 12: 187. <http://dx.doi.org/10.1186/1471-2105-12-187>.
- Pagel M. 1999. Inferring the historical patterns of biological evolution. *Nature* 401:877-884.
- Palumbi SR. 1996. Nucleic acids II: the polymerase chain reaction. In Hillis DM, Moritz C, Mable BK (Eds.) *Molecular systematics*. Sunderland, MA, Sinauer Associates: 205-247.
- Panha S. 1996. A new species of *Opisthostoma* from Thailand (Prosobranchia: Cyclophoroidea: Diplommatinidae). *Malacological Review* 29: 133-134.
- Paradis E, Claude J, Strimmer K. 2004. APE: analyses of phylogenetics and evolution in R language. *Bioinformatics* 20(2):289-290.
- Park JK, Foighil DO. 2000. Sphaeriid and corbiculid clams represent separate heterodont bivalve radiations into freshwater environments. *Molecular Phylogenetics and Evolution* 14:75-88.
- Parmakelis A, Spanos E, Papagiannakis G, Louis C, Mylonas M. 2003. Mitochondrial DNA phylogeny and morphological diversity in the genus *Mastus* (Beck, 1837): a study in a recent (Holocene) island group (Koufonisi, south-east Crete). *Biological Journal of the Linnean Society* 78(3):383-399.
- Parmakelis A, Kotsakiozi P, Rand D. 2013. Animal mitochondria, positive selection and cyto-nuclear coevolution: insights from pulmonates. *PloSone*, 8(4): e61970. <http://dx.doi.org/10.1371/journal.pone.0061970>.
- Parr CS, Guralnick R, Cellinese N, Page RD. 2012. Evolutionary informatics: unifying knowledge about the diversity of life. *Trends in Ecology and Evolution* 27(2): 94-103. <http://dx.doi.org/10.1016/j.tree.2011.11.001>.
- Penev L, Agosti D, Georgiev T, Catapano T, Miller J, Blagoderov V, Roberts D, Smith VS, Brake I, Rycroft S, Scott B, Johnson NF, Morris RA, Sautter G, Chavan V, Robertson T, Remsen D, Stoev P, Parr C, Knapp S, Kress WJ, Thompson FC, Erwin T. 2010. Semantic tagging of and semantic enhancements to systematics papers: ZooKeys working examples. *ZooKeys* 50: 1-16. <http://dx.doi.org/10.3897/zookeys.50.538>.

## References

- Penev L, Lyal CHC, Weitzman A, Morse DR, King D, Sautter G, Georgiev T, Morris RA, Catapano T, Agosti D. 2011. XML schemas and mark-up practices of taxonomic literature. *Zookeys* 150: 89-116. <http://dx.doi.org/10.3897/zookeys.150.2213>.
- Picado J. 2009. Seashells: the plainness and beauty of their mathematical description. *MAA Mathematical Sciences Digital Library*: 1-18.
- Price RM. 2003. Columellar muscle of neogastropods: muscle attachment and the function of columellar folds. *The Biological Bulletin* 25:351-366
- Puillandre N, Modica MV, Zhang Y, Sirovich L, Boisselier MC, Cruaud C, Holford M, Samadi S. 2012. Large-scale species delimitation method for hyperdiverse groups. *Molecular Ecology* 21(11): 2671-2691. <http://dx.doi.org/10.1111/j.1365-294X.2012.05559.x>.
- Puslednik L, Ponder WF, Dowton M, Davis AR. 2009. Examining the phylogeny of the Australasian Lymnaeidae (Heterobranchia: Pulmonata: Gastropoda) using mitochondrial, nuclear and morphological markers. *Molecular Phylogenetics and Evolution* 52(3):643-659.
- Pyka M, Hertog M, Fernandez R, Hauke S, Heider D, Dannlowski U, Konrad C. 2010. fMRI data visualization with BrainBlend and Blender. *Neuroinformatics* 8(1):21-31.
- Pyle RL, Michel E. 2008. ZooBank: Developing a nomenclatural tool for unifying 250 years of biological information. *Zootaxa* 1950: 39-50.
- Quensen III JF, Woodruff DS. 1997. Associations between shell morphology and land crab predation in the land snail *Cerion*. *Functional Ecology* 11(4):464-471.
- R Core Team. 2013. *R: A Language and Environment for Statistical Computing*. R Foundation for Statistical Computing, Vienna, Austria. URL <http://www.R-project.org>.
- Ratnasingham S, Hebert PD. 2007. BOLD: The Barcode of Life Data System (<http://www.barcodinglife.org>). *Molecular Ecology Notes* 7(3): 355-364.
- Raup DM. 1961. The geometry of coiling in gastropods. *Proceedings of the National Academy of Sciences of the United States of America* 47(4):602.
- Raup DM. 1966. Geometry analysis of shell coiling: general problems. *Journal of Paleontology* 40(5):1178-1190.
- Raup DM. 1967. Geometric analysis of shell coiling: coiling in ammonoids. *Journal of Paleontology* 41(1):43-65.
- Raup DM, Graus RR. 1972. General equations for volume and surface area of a logarithmically coiled shell. *Journal of the International Association for Mathematical Geology* 4:307-316.
- Raup DM, Michelson A. 1965. Theoretical morphology of the coiled shell. *Science* 147(3663):1294-1295.

## References

- Relyea RA. 2003. How prey respond to combined predators: a review and an empirical test. *Ecology* 84(7):1827-1839.
- Revell LJ. 2012. phytools: an R package for phylogenetic comparative biology (and other things). *Methods in Ecology and Evolution* 3(2):217-223.
- Rice SH. 1998. The bio-geometry of mollusc shells. *Paleobiology* 24(1):133-149.
- Rodrigues ASL, Gray CL, Crowter BJ, Ewers RM, Stuart SN, Whitten T, Manica A. 2010. A global assessment of Amphibian taxonomic effort and expertise. *Bioscience* 60(10): 798-806. <http://dx.doi.org/10.1525/bio.2010.60.10.6>.
- Rohlf FJ, Archie JW. 1984. A comparison of Fourier methods for the description of wing shape in mosquitoes (Diptera: Culicidae). *Systematic Biology* 33(3):302-317.
- Rohlf FJ, Slice D. 1990. Extensions of the Procrustes method for the optimal superimposition of landmarks. *Systematic Biology* 39(1):40-59.
- RStudio. 2012. *RStudio: Integrated Development Environment for R* (Version 0.97.336), Boston, MA. URL <http://www.rstudio.org/>.
- Ruthensteiner B, Hess M. 2008. Embedding 3D models of biological specimens in PDF publications. *Microscopy Research and Technique* 71(11): 778-786. <http://dx.doi.org/10.1002/jemt.20618>.
- Salas C, Marina P, Checa AG, Rueda JL. 2012. The periostracum of *Digitaria digitaria* (Bivalvia: Astartidae): formation and structure. *Journal of Molluscan Studies* 78:34-43.
- Samadi S, David P, Jarne P. 2000. Variation of shell shape in the clonal snail *Melanoides tuberculata* and its consequences for the interpretation of fossil series. *Evolution* 54(2):492-502.
- Sanderson MJ, Donoghue MJ, Piel WH, Eriksson T. 1994. TreeBASE: a prototype database of phylogenetic analyses and an interactive tool for browsing the phylogeny of life. *American Journal of Botany* 81(6): 183.
- Sanderson MJ. 2002. Estimating absolute rates of molecular evolution and divergence times: a penalized likelihood approach. *Molecular Biology and Evolution* 19(1):101-109.
- Sarkar D. 2008. *Lattice: Multivariate Data Visualization with R*. Springer.
- Sasaki T. 2010. *Malacology*. University of Tokyo Press.
- Saunders WB, Shapiro EA. 1986. Calculation and simulation of ammonoid hydrostatics. *Paleobiology* 12(1):64-79.
- Saurin E. 1953. Coquilles nouvelles de l'Indochine. *Journal de Conchyliologie* 93: 113-120.
- Savazzi E. 1985. SHELLGEN: A BASIC program for the modeling of molluscan shell ontogeny and morphogenesis. *Computers & Geosciences* 11(5):521-530.

## References

- Savazzi E. 1990. Biological aspects of theoretical shell morphology. *Lethaia* 23(2):195-212.
- Savazzi E. 1992. Shell construction, life habits and evolution in the gastropod *Velates*. *Palaeogeography, Palaeoclimatology, Palaeoecology* 99(3):349-360.
- Savazzi E. 1993. C++ classes for theoretical shell morphology. *Computers & Geosciences* 19(7): 931-964.
- Savazzi E. 1995. Theoretical shell morphology as a tool in construction morphology. *Neues Jahrbuch für Geologie und Paläontologie. Abhandlungen* 195:229-240.
- Savazzi E. 1996. Adaptations of Vermetid and Siliquariid gastropods. *Palaeontology* 39(1):157-177.
- Schilthuizen M. 2003. Sexual selection on land snail shell ornamentation: a hypothesis that may explain shell diversity. *BMC Evolutionary Biology* 3: 13. doi: 10.1186/1471-2148-3-13.
- Schilthuizen M, Rosli R, Ali AMM, Salverda M, van Oosten H, Bernard H, Ancrenaz M, Lackman-Ancrenaz I. 2003. The ecology and demography of *Opisthostoma (Plectostoma) concinnum s.l.* (Gastropoda: Diplommatinidae) on limestone outcrops along the Kinabatangan river. In: Maryati M, Takano A, Goossens B, Indran R, eds. *Lower Kinabatangan scientific expedition*. Kota Kinabalu: Universiti Malaysia Sabah. 55-71.
- Schilthuizen M, Chai HN, Kimsin TE, Vermeulen JJ. 2003b. Abundance and diversity of land-snails (Mollusca: Gastropoda) on limestone hills in Borneo. *Raffles Bulletin of Zoology* 51: 35-42. <http://rmbr.nus.edu.sg/rbz/biblio/51/51rbz035-042.pdf>.
- Schilthuizen M, Liew TS, Elahan BB, Lackman-Ancrenaz I. 2005. Effects of karst forest degradation on pulmonate and prosobranch land snail communities in Sabah, Malaysian Borneo. *Conservation Biology* 19: 949-954. <http://dx.doi.org/10.1111/j.1523-1739.2005.00209.x>.
- Schilthuizen M, Til A, Salverda M, Liew TS, James SS, Elahan B, Vermeulen JJ. 2006. Microgeographic evolution of snail shell shape and predator behavior. *Evolution* 60: 1851-1858. <http://dx.doi.org/10.1554/06-114.1>.
- Schilthuizen M, Clements R. 2008. Tracking extinction from space. *Tentacle* 16: 8-9.
- Schilthuizen M, Liew T-S. 2008. The slugs and semislugs of Sabah, Malaysian Borneo (Gastropoda, Pulmonata: Veronicellidae, Rathouisiidae, Ariophantidae, Limacidae, Philomycidae). *Basteria* 72(4-6):287-306.
- Schindel DE. 1990. Unoccupied morphospace and the coiled geometry of gastropods: architectural constraint or geometric covariation. In Ross, R. M. and Allmon W. D. (eds) *Causes of Evolution: A Paleontological Perspective*. University of Chicago Press, Chicago. Page 270-304.
- Seilacher A. 1991. Self-organizing mechanisms in morphogenesis and evolution. In: Schmidt-Kittler N, Vogel K, ed. *Constructional Morphology and Evolution*. Springer, 251-271.

## References

- Seuss B, Nützel A, Scholz H, Frýda J. 2012. The Paleozoic evolution of the gastropod larval shell: larval armor and tight coiling as a result of predation-driven heterochronic character displacement. *Evolution & Development* 14(2):212-228.
- Signor PW, Kat PW. 1984. Functional significance of columellar folds in turrotelliform gastropods. *Journal of Paleontology* 58(1):210-216.
- Sih A, Englund G, Wooster D. 1998. Emergent impacts of multiple predators on prey. *Trends in Ecology & Evolution* 13(9):350-355.
- Silva L, Meireles L, Vargas Té, Junqueira FO, de Almeida Bessa EC. 2009. Life history of the land snail *Habroconus semenlini* (Stylommatophora: Euconulidae) under laboratory conditions. *Revista de Biologia Tropical* 57(4):1217-1222.
- Silva L, Meireles L, D'ávila S, Junqueira FO, de Almeida Bessa EC. 2013. Life history of *Bulimulus tenuissimus* (D'Orbigny, 1835) (Gastropoda, Pulmonata, Bulimulidae): effect of isolation in reproductive strategy and in resources allocation over their lifetime. *Molluscan Research* 33(2):75-79.
- Silva EC, Molozzi J, Callisto M. 2010. Size-mass relationships of *Melanoides tuberculatus* (Thiaridae: Gastropoda) in a eutrophic reservoir. *Zoologia* 27(5):691-695.
- Sluys R. 2013. The unappreciated, fundamentally analytical nature of taxonomy and the implications for the inventory of biodiversity. *Biodiversity and Conservation* 22(4): 1095-1105. <http://dx.doi.org/10.1007/s10531-013-0472-x>.
- Smith EA. 1893a. Note on the Genera *Geothauma* and *Gyrostropha*. *The Annals and Magazine of Natural History, including Zoology, Botany and Geology* 6(11): 284-285. <http://www.biodiversitylibrary.org/page/24344618#page/332/mode/1up>.
- Smith EA. 1893b. Descriptions of new species of land-shells from Borneo. *Journal of the Proceedings of the Linnean Society Zoology* 24: 341-352. <http://www.biodiversitylibrary.org/item/98716#page/361/mode/1up>.
- Smith EA. 1894. A list of the Bornean species of the genus *Opisthostoma* and descriptions of four new species. *The Annals and Magazine of Natural History, including Zoology, Botany and Geology* 6(14): 269-273. <http://biodiversitylibrary.org/item/78508#page/295/mode/1up>.
- Smith EA. 1904. Description of a new species of *Opisthostoma* from Borneo. *Proceedings of the Malacological Society of London* 6: 105. <http://www.biodiversitylibrary.org/item/52315#page/135/mode/1up>.
- Smith EA. 1905a. Description of a new species of *Opisthostoma* from North Borneo. *The Annals and Magazine of Natural History, including Zoology, Botany and Geology* 7(15): 360. <http://biodiversitylibrary.org/item/63423#page/404/mode/1up>.
- Smith EA. 1905b. Descriptions of three new species of *Opisthostoma* from Sarawak, North Borneo. *Proceedings of the Malacological Society of London* 6: 189-190. <http://biodiversitylibrary.org/item/52315#page/231/mode/1up>.

## References

- Smith VS, Rycroft SD, Harman KT, Scott B, Roberts D. 2009. Scratchpads: a data-publishing framework to build, share and manage information on the diversity of life. *BMC Bioinformatics* 10: S6. <http://dx.doi.org/10.1186/1471-2105-10-S14-S6>.
- Solem A. 1966. Sacks of exotic dirt. *Bulletin Field Museum of Natural History* 37(6): 3-4. <http://www.biodiversitylibrary.org/page/4188033#page/36/mode/1up>.
- Solem A, Solem BK. 1976. Endodontoid land snails from Pacific Islands (Mollusca : Pulmonata : Sigmurethra). *Fieldiana. Zoology. Special Publications*. Part 1: 536. <http://www.biodiversitylibrary.org/item/20377#page/49/mode/1up>.
- Spight T, Lyons A. 1974. Development and functions of the shell sculpture of the marine snail *Ceratostoma foliatum*. *Marine Biology* 24(1):77-83.
- Stamatakis A. 2006. RAxML-VI-HPC: maximum likelihood-based phylogenetic analyses with thousands of taxa and mixed models. *Bioinformatics* 22(21): 2688-2690. <http://dx.doi.org/10.1093/bioinformatics/btl446>.
- Stamatakis A. 2014. RAxML Version 8: A tool for Phylogenetic Analysis and Post-Analysis of Large Phylogenies. *Bioinformatics* doi: 10.1093/bioinformatics/btu033
- Stankowski S. 2011. Extreme, continuous variation in an island snail: local diversification and association of shell form with the current environment *Biological Journal of the Linnean Society* 104(4):756-769.
- Stankowski S. 2013. Ecological speciation in an island snail: evidence for the parallel evolution of a novel ecotype and maintenance by ecologically dependent postzygotic isolation. *Molecular Ecology* 22:2726-2741.
- Stępień C. 2009. An IFS-based method for modelling horns, seashells and other natural forms. *Computers & Graphics* 33(4):576-581.
- Stone JR. 1996. Computer-simulated shell size and shape variation in the Caribbean land snail genus *Cerion*: a test of geometrical constraints. *Evolution* 50(1):341-347.
- Stone JR. 1997. Mathematical determination of coiled shell volumes and surface areas. *Lethaia* 30:213-219.
- Stone JR. 1999. Using a mathematical model to test the null hypothesis of optimal shell construction by four marine gastropods. *Marine Biology* 134:397-403.
- Stone JR. 2004. Nonoptimal shell forms as overlapping points in functional and theoretical morphospaces. *American Malacological Bulletin* 18:129-134.
- Stothard JR, Bremond P, Andriamaro L, Loxton NJ, Sellin B, Sellin E, Rollinson D. 2000. Molecular characterization of the freshwater snail *Lymnaea natalensis* (Gastropoda: Lymnaeidae) on Madagascar with an observation of an unusual polymorphism in ribosomal small subunit genes. *Journal of Zoology* 252:303-315.



## References

- Sulikowska-Drozd A. 2011. Population dynamics of the Carpathian Clausiliid *Vestia gulo* (E. A. Bielz 1859) (Pulmonata: Clausiliidae) under various climatic conditions. *Journal of Conchology* 40(4):462-470.
- Suvorov AN. 1993. Problems of Functional Morphology of Ostium in Pupillacea Snails (Gastropoda Pulmonata). *Ruthenica* 3(2):141-152.
- Suvorov AN. 1999a. Functional Relations between Shell Structures and Soft Body in Lower Geophila. 1. Pupillina, Oleacinina. *Zoologicheskyy Zhurnal* 78(1):5-15.
- Suvorov AN. 1999b. Functional Relations between Shell Structures and Soft Body in Lower Geophila. 2. Achatinina. *Zoologicheskyy Zhurnal* 78(5):528-538.
- Suvorov AN. 2002. Prospects for studies of morphological variability of land pulmonate snails. *Biology Bulletin of the Russian Academy of Sciences* 29(1):455-467.
- Swofford D. 1998. *PAUP 4.0: phylogenetic analysis using parsimony*. Smithsonian Institution.
- Sykes ER. 1902a. Descriptions of six new land shells from the Malay Peninsula. *Journal of Malacology* 9: 22-23. <http://www.biodiversitylibrary.org/item/89648#page/202/mode/1up>.
- Sykes ER. 1902b. On a collection of land and fresh water shells from Kelantan, Malay Peninsula. *Journal of Malacology* 9: 60-63. <http://www.biodiversitylibrary.org/item/89648#page/240/mode/1up>.
- Sykes ER. 1903. On the land operculate Mollusca collected during the "Skeat Expedition" to the Malay Peninsula in 1899-1900. *Proceedings of the Zoological Society of London* 1903: 194-199. <http://www.biodiversitylibrary.org/item/98587#258>.
- Takano A, Goossens B, Indran R, ed. *Lower Kinabatangan scientific expedition*. Universiti Malaysia Sabah, Kota Kinabalu, 55-71.
- Tamura K, Peterson D, Peterson N, Stecher G, Nei M, Kumar S. 2011. MEGA5: molecular evolutionary genetics analysis using maximum likelihood, evolutionary distance, and maximum parsimony methods. *Molecular Biology and Evolution* 28(10): 2731-2739. doi: 10.1093/molbev/msr121.
- Tan SK, Chan SY. 2009. New records of predatory slugs from Singapore with notes on their feeding behaviour. *Nature in Singapore* 2:1-7.
- Terhivuo J. 1978. Growth, reproduction and hibernation of *Arianta arbustorum* (L.) (Gastropoda, Helicidae) in southern Finland. *Annales Zoologici Fennici* 15:8-16
- Teshima H, Davison A, Kuwahara Y, Yokoyama J, Chiba S, Fukuda T, Ogimura H, Kawata M. 2003. The evolution of extreme shell shape variation in the land snail *Ainohelix editha*: a phylogeny and hybrid zone analysis. *Molecular Ecology* 12(7):1869-1878
- Thompson D. 1917. *On growth and form*. Cambridge University Press, Cambridge.

## References

- Thompson JT, Lowe AD, Kier WM. 1998. The columellar muscle of prosobranch gastropods: morphological zonation and its functional implication. *Invertebrate Biology* 117(1):45-56.
- Thornton IW. 1997. *Krakatau: the destruction and reassembly of an island ecosystem*. Harvard University Press.
- Tissot BN. 1988. Geographic variation and heterochrony in two species of cowries (genus *Cypraea*). *Evolution* 42(1):103-117.
- le Tomlin JRB. 1938. New Malay land shells. *Journal of Conchology* 21: 73-75.
- le Tomlin JRB. 1948. New Malay land-shells. *Proceedings of the Malacological Society of London* 27: 224-225.
- Tongkerd P, Lee T, Panha S, Burch J, Foighil D. 2004. Molecular phylogeny of certain Thai gastrocoptine micro land snails (Stylommatophora : Pupillidae) inferred from mitochondrial and nuclear ribosomal DNA sequences. *Journal of Molluscan Studies* 70(2):139-147.
- Ubukata T. 2001. Stacking increments: a new model and morphospace for the analysis of bivalve shell growth. *Historical Biology: A Journal of Paleobiology* 15(4):303-321.
- Umiński T. 1975. Life cycles in some Vitrinidae (Mollusca, Gastropoda) from Poland. *Annales Zoologici Fennici* 33(2):1-16.
- Urduy S, Goudemand N, Bucher H, Chirat R. 2010. Allometries and the morphogenesis of the molluscan shell: a quantitative and theoretical model. *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution* 314(4):280-302.
- Urduy S, Goudemand N, Bucher H, Chirat R. 2010. Growth-dependent phenotypic variation of molluscan shells: implications for allometric data interpretation. *Journal of Experimental Zoology Part B: Molecular and Developmental Evolution*, 314B:303-326.
- Urduy S, Wilson LA, Haug JT, Sánchez-Villagra MR. 2013. On the Unique Perspective of Paleontology in the Study of Developmental Evolution and Biases. *Biological Theory* 8(3):293-311.
- Venables WN, Ripley BD. 2002. *Modern Applied Statistics with S*. Springer.
- Verduin A. 1982. How complete are diagnoses of coiled shells of regular build? A mathematical approach. *Basteria* 45(6):127-142.
- Vermeij GJ. 1971. Gastropod evolution and morphological diversity in relation to shell geometry. *Journal of Zoology* 163(1):15-23.
- Vermeij GJ. 1977. The Mesozoic marine revolution: evidence from snails, predators and grazers. *Paleobiology* 3(3):245-258.
- Vermeij GJ, Covich AP. 1978. Coevolution of freshwater gastropods and their predators. *American Naturalist* 112:833-843.

## References

- Vermeij GJ. 1980. Gastropod shell growth rate, allometry, and adult size: environmental implications. In: Rhoads DC, Lutz RA, ed. *Skeletal growth of aquatic organisms: biological records of environmental change*. Plenum Publishing Corporation, New York., 379-394.
- Vermeij GJ. 1982. Unsuccessful predation and evolution. *American Naturalist* 120(6):701-720.
- Vermeij GJ. 1987. *Evolution and Escalation*. Princeton University Press, Princeton.
- Vermeij GJ. 1993. *A natural history of shells*. Princeton University Press, Princeton.
- Vermeij GJ. 2002. Characters in context: molluscan shells and the forces that mold them. *Paleobiology* 28(1):41-54.
- Vermeulen JJ. 1991. Notes on the non-marine molluscs of the island of Borneo 2. The genus *Opisthostoma* (Gastropoda Prosobranchia: Diplommatinidae), part 1. *Basteria* 55: 139-163.
- Vermeulen JJ. 1994. Notes on the non-marine molluscs of the island of Borneo. 6. The genus *Opisthostoma* (Gastropoda Prosobranchia: Diplommatinidae), part 2. *Basteria* 58(3-4): 73-191.
- Vermeulen JJ, Clements R. 2008. Another twist in the tale: a new species of *Opisthostoma* (Gastropoda, Diplommatinidae) from Peninsular Malaysia. *Basteria* 72: 263-266.
- Wada S, Chiba S. 2013. The Dual Protection of a Micro Land Snail against a Micro Predatory Snail. *PloS one* 8(1):e54123.
- Wägele H, Klussmann-Kolb A, Kuhlmann M, Hasprunar G, Lindberg D, Koch A, Wägele JW. 2011. The taxonomist – an endangered race. A practical proposal for its survival. *Frontiers in Zoology* 8: 25. <http://dx.doi.org/10.1186/1742-9994-8-25>.
- Wagge LE. 1951. The activity of amoebocytes and of alkaline phosphatases during the regeneration of the shell in the snail, *Helix aspersa*. *Quarterly Journal of Microscopical Science* 92:307-321.
- Wagner P, Erwin D. 2006. Patterns of convergence in general shell form among Paleozoic gastropods. *Paleobiology* 32(2):316-337.
- Wang Y, Fu X, Lei C, Jeng ML, Nobuyoshi O. 2007. Biological Characteristics of the Terrestrial Firefly *Pyrocoelia pectoralis* (Coleoptera: Lampyridae). *The Coleopterists Bulletin* 61(1):85-93.
- Warburton K. 1979. Variation in shell geometry in the genus *Lacuna* (Prosobranchia: Lacunidae). *Journal of Natural History* 13(3):385-391.
- Waterstradt J. 1902. Kelantan and my trip to Gunong Tahan. *Journal of the Straits Branch of the Royal Asiatic Society* 37(4): 1-27.  
<http://www.biodiversitylibrary.org/item/130392#page/24/mode/1up>.

## References

- Webb CO, Slik JWF, Triono T. 2010. Biodiversity inventory and informatics in Southeast Asia. *Biodiversity and Conservation* 19: 955-972. <http://dx.doi.org/10.1007/s10531-010-9817-x>.
- Webster NB, van Dooren TJM, Schilthuizen M. 2012. Phylogenetic reconstruction and shell evolution of the Diplommatinidae (Gastropoda: Caenogastropoda). *Molecular Phylogenetics and Evolution* 63: 625-638. <http://dx.doi.org/10.1016/j.ympev.2012.02.004>.
- Wheeler QD, Knapp S, Stevenson DW, Stevenson J, Blum SD, Boom BM, Borisy GG, Buizer JL, de Carvalho MR, Cibrian A, Donoghue MJ, Doyle V, Gerson EM, Graham CH, Graves P, Graves SJ, Guralnick RP, Hamilton AL, Hanken J, Law W, Lipscomb DL, Lovejoy TE, Miller H, Miller JS, Naeem S, Novacek MJ, Page LM, Platnick NI, Porter-Morgan H, Raven PH, Solis MA, Valdecasas AG, van Der Leeuw S, Vasco A, Vermeulen N, Vogel J, Walls RL, Wilson EO, Woolley JB. 2012. Mapping the biosphere: exploring species to understand the origin, organization and sustainability of biodiversity. *Systematics and Biodiversity* 10(1): 1-20. <http://dx.doi.org/10.1080/14772000.2012.665095>.
- Wilbur KM, Owen G. 1964. Growth. In: Wilbur KM, Yonge CM, ed. *Physiology of Mollusca*. Academic Press, New York, 211-242.
- Wilson EO. 2003. The encyclopedia of life. *Trends in Ecology and Evolution* 18(2): 77-80. [http://dx.doi.org/10.1016/S0169-5347\(02\)00040-X](http://dx.doi.org/10.1016/S0169-5347(02)00040-X).
- Wilson EO. 2004. Taxonomy as a fundamental discipline. *Philosophical Transactions of the Royal Society of London. Series B: Biological Sciences* 359(1444): 739-739. <http://dx.doi.org/10.1098/rstb.2003.1440>.
- Winston JE. 1999. *Describing species: practical taxonomic procedure for biologists*. Columbia University Press.
- Wu M, Guo JY, Wan FH, Qin QL, Wu Q, Wiktor A. 2006. A preliminary study on the biology of the predatory terrestrial mollusk *Rathouisia leonina*. *Veliger* 48(2):61-74.
- Yesson C, Brewer PW, Sutton T, Caithness N, Pahwa JS, Burgess M, Gray WA, White RJ, Jones AC, Bisby FA, Culham A. 2007). How global is the global biodiversity information facility? *PLoS one* 2(11): e1124. <http://dx.doi.org/10.1371/journal.pone.0001124>.
- Zhang ZQ. 2008. Contributing to the progress of descriptive taxonomy. *Zootaxa* 1968: 65-68.



## Curriculum Vitae

Liew Thor Seng was born on the 19<sup>th</sup> of December, 1980 in Johor Bahru, Johor, Malaysia. He received his early education in Kulai, Johor. After he obtained his Malaysian Higher School Certificate, he enrolled in a Conservation Biology undergraduate course at Universiti Malaysia Sabah (UMS), Kota Kinabalu. Up until that point, he was ignorant about biodiversity, though he grew up in one of Earth's biodiversity hotspots. After he completed the undergraduate course in September 2004, he started his Master of Science in Tropical Biology and Conservation Institute, UMS later that year. In September 2006, he completed his Master of Science with a dissertation *Analytical Biogeography of Land Snails of Mount Kinabalu*, under the supervision of Dr. Menno Schilthuizen. Since then, he succumbed to his scientific curiosity and started his journey exploring, investigating, and learning about tropical biodiversity. He worked as a part-time tutor and a research assistant at UMS between 2006 and 2008. During the same period, he stayed a total of six months in the Netherlands and worked in Naturalis Biodiversity Center under the Martin Fellowship. In June 2008, he worked as a tutor in the Tropical Biology and Conservation Institute in UMS. In March 2010, he started his PhD in Institute for Biology at Leiden University and obtained a Rubenstein Fellowship (Encyclopedia of Life) to support his project. His PhD project was supervised by Prof. Dr. Menno Schilthuizen and was supported by Netherlands Organisation for Scientific Research (NWO, ALW 819.01.012). The results he obtained during his candidature are documented in this thesis. He will continue his career in Malaysia with the Tropical Biology and Conservation Institute in UMS.

### Publications

**Liew TS**, Schilthuizen M. 2014. Association between shell morphology of micro-land snails (genus *Plectostoma*) and their predator's predatory behaviour. *PeerJ* 2:e329.

**Liew TS**, Vermeulen JJ, bin Marzuki ME, Schilthuizen M. 2014. A cybertaxonomic revision of the micro-landsnail genus *Plectostoma* Adam (Mollusca, Caenogastropoda, Diplommatinidae), from Peninsular Malaysia, Sumatra and Indochina. *ZooKeys* 393:1–107.

Schilthuizen M, **Liew TS**, Liew TH, Berlin P, King JP, Lakim M. 2013. Species diversity patterns in insular land snail communities of Borneo. *Journal of the Geological Society* 170(3):539-545.

Koene JM, **Liew TS**, Montagne-Wajer K, Schilthuizen M. 2013. A Syringe-Like Love Dart Injects Male Accessory Gland Products in a Tropical Hermaphrodite. *PloS one* 8(7):e69968.

**Liew TS**, Schilthuizen M, Lakim M. 2010. The determinants of land snail diversity along a tropical elevational gradient: insularity, geometry and niches. *Journal of Biogeography* 37(6):1071-1078.

**Liew TS**, Schilthuizen M, Vermeulen JJ. 2009. Systematic revision of the genus *Everettia* Godwin-Austen, 1891 (Mollusca: Gastropoda: Dyakiidae) in Sabah, northern Borneo, *Zoological Journal of the Linnean Society* 157(3):515-550.

## Curriculum Vitae

Schilthuizen M, **Liew TS**. 2008. The slugs and semislugs of Sabah, Malaysian Borneo (Gastropoda, Pulmonata: Veronicellidae, Rathouisiidae, Ariophantidae, Limacidae, Philomycidae). *Basteria* 72(4-6):287-306.

**Liew TS**, Clements R, Schilthuizen M. 2008. Sampling micromolluscs in tropical forests: one size does not fit all. *Zoosymposia* 1:271-280.

Clements R, **Liew TS**, Vermeulen JJ, Schilthuizen M. 2008. Further twists in gastropod shell evolution. *Biology Letters* 4(2):179-182.

Schilthuizen M, Til, A van, Salverda M, **Liew TS**, James SS, Elahan BB, Vermeulen JJ. 2006. Microgeographic evolution of snail shell shape and predator behaviour. *Evolution* 60(9):1851-1858.

Schilthuizen M, **Liew TS**, Elahan BB, Lackman-Ancrenaz I. 2005. Effects of karst forest degradation on pulmonate and prosobranch land snail communities in Sabah, Malaysian Borneo. *Conservation Biology* 19(3):949-954.





