

Cover Page



Universiteit Leiden



The handle <http://hdl.handle.net/1887/44867> holds various files of this Leiden University dissertation

Author: Schwallier, Rachel Marie

Title: Evolutionary diversification of Nepenthes (Nepenthaceae)

Issue Date: 2016-12-12

References

- Addo-Bediako A., Chown S., & Gaston K. (2000) Thermal tolerance, climatic variability and latitude. *PNAS*, **267**, 739–475.
- Adlassnig W., Peroutka M., Lambers H., & Lichtscheidl I.K. (2005) The roots of carnivorous plants. *Plant and Soil*, **274**, 127–140.
- Adlassnig W., Peroutka M., & Lendl T. (2011) Traps of carnivorous pitcher plants as a habitat: composition of the fluid, biodiversity and mutualistic activities. *Annals of Botany*, **107**, 181–94.
- Aguirre-Gutiérrez J., Carvalheiro L.G., Polce C., van Loon E.E., Raes N., Reemer M., Biesmeijer J.C., & Chapman M.G. (2013) Fit-for-purpose: species distribution model performance depends on evaluation criteria – Dutch hoverflies as a case study. *PLOS ONE*, **8**, e63708.
- Alamgir M., Mukul S.A., & Turton S.M. (2015) Modelling spatial distribution of critically endangered Asian elephant and Hoolock gibbon in Bangladesh forest ecosystems under a changing climate. *Applied Geography*, **60**, 10–19.
- Alamsyah F. & Ito M. (2013) Phylogenetic analysis of Nepenthaceae, based on interal transcribed spacer nuclear ribosomal DNA sequences. *Acta Phytotaxonomica Geobotanica*, **64**, 113–126.
- Albert V.A., Williams S.E., & Chase M.W. (1992) Carnivorous plants: phylogeny and structural evolution. *Science (New York, N.Y.)*, **257**, 1491–1495.
- Alexiades M.N., Peters C.M., Laird S.A., Binnqüist C.L., & Castillo P.N. (2013) The missing skill set in community management of tropical forests. *Conservation biology: the journal of the Society for Conservation Biology*, **27**, 635–7.
- Araújo M.B., Alagador D., Cabeza M., Nogués-Bravo D., & Thuiller W. (2011) Climate change threatens European conservation areas. *Ecology Letters*, **14**, 484–92.
- Araújo M.B., Ferri-Yáñez F., Bozinovic F., Marquet P.A., Valladares F., & Chown S.L. (2013) Heat freezes niche evolution. *Ecology Letters*, **16**, 1206–1219.
- Baas P. (1976) Some functional and adaptive aspects of vessel member morphology. *Wood structure in biological and technological research* (ed. by P. Baas, A. Bolton, and D. Catling), pp. 157–81. Leiden University Press, Leiden.
- Baas P., Werker E., & Fahn A. (1983) Some ecological trends in vessel characters. *IAWA Bulletin*, **4**, 141–59.
- Baek H.J., Lee J., Lee H.S., Hyun Y.K., Cho C., Kwon W.T., Marzin C., Gan S.Y., Kim M.J., Choi D.H., Lee J., Lee J., Boo K.O., Kang H.S., & Byun Y.H. (2013) Climate change in the 21st century simulated by HadGEM2-AO under representative concentration pathways. *Asia-Pacific Journal of Atmospheric Sciences*, **49**, 603–618.
- Baker H.G. (1955) Self-compatibility and establishment after “long-distance” dispersal. *Evolution*, **9**, 347–349.

- Balangcod T.D. & Balangcod A.K.D. (2011) Ethnomedical knowledge of plants and healthcare practices among the Kalanguya tribe in Tinoc, Ifugao, Luzon, Philippines. *Indian Journal of Traditional Knowledge*, **10**, 227–238.
- Baldwin B., Kyhos D., Dvorak J., & Carr G. (1991) Chloroplast DNA evidence for a North American origin of the Hawaiian silversword alliance (Asteraceae). *PNAS*, **88**, 1840–3.
- Baldwin B.G., Crawford D.J., Francisco-Ortega J., Kim S.-C., Sang T., & Stuessy T.F. (1998) Molecular phylogenetic insights on the origin and evolution of oceanic island plants. *Molecular Systematics of Plants II* (ed. by D.E. Soltis, P.S. Soltis, and J.J. Doyle), pp. 410–441. Springer US, Boston.
- Barkman T.J. & Simpson B.B. (2001) Origin of high-elevation *Dendrochilum* species (Orchidaceae) endemic to Mount Kinabalu, Sabah, Malaysia. *Systematic Botany*, **26**, 658–669.
- Batjes N.H. (2012) ISRIC-WISE derived soil properties on a 5 by 5 arc-minutes global grid (ver. 1.2).
- Bauer U., Bohn H.F., & Federle W. (2008) Harmless nectar source or deadly trap: *Nepenthes* pitchers are activated by rain, condensation and nectar. *Proceedings. Biological sciences / The Royal Society*, **275**, 259–65.
- Bauer U., Clemente C.J., Renner T., & Federle W. (2012) Form follows function: morphological diversification and alternative trapping strategies in carnivorous *Nepenthes* pitcher plants. *Journal of Evolutionary Biology*, **25**, 90–102.
- Bauer U. & Federle W. (2009) The insect-trapping rim of *Nepenthes* pitchers: surface structure and function. *Plant Signaling & Behavior*, **4**, 1019–23.
- Bauer U., Grafe T.U., & Federle W. (2011) Evidence for alternative trapping strategies in two forms of the pitcher plant, *Nepenthes rafflesiana*. *Journal of Experimental Botany*, **62**, 3683–92.
- Bauer U., Willmes C., & Federle W. (2009a) Effect of pitcher age on trapping efficiency and natural prey capture in carnivorous *Nepenthes rafflesiana* plants. *Annals of Botany*, **103**, 1219–26.
- Bauer U., Willmes C., & Federle W. (2009b) Effect of pitcher age on trapping efficiency and natural prey capture in carnivorous *Nepenthes rafflesiana* plants. *Annals of Botany*, **103**, 1219–26.
- Beaman J.H., Friis I., & Balslev H. (2005) Mount Kinabalu: hotspot of plant diversity in Borneo. *Plant diversity and complex patterns: local, regional and global dimensions*. (ed. by I. Friis and H. Balslev), pp. 103–127. Det Kongelige Danske Videnskaberne Selskab, Copenhagen.
- Bennett K.F. & Ellison A.M. (2009) Nectar, not colour, may lure insects to their death. *Biology Letters*, **5**, 469–72.
- Bertrand R., Lenoir J., Piedallu C., Riofrío-Dillon G., de Ruffray P., Vidal C., Pierrat J.-C., & Gégout J.-C. (2011) Changes in plant community composition lag behind climate warming in lowland forests. *Nature*, **479**, 517–520.
- Best R., Caulk N., & Stachowicz J. (2013) Trait vs. phylogenetic diversity as

- predictors of competition and community composition in herbivorous marine amphipods. *Ecology Letters*, **16**, 72–80.
- Bharucha Z. & Pretty J. (2010) The roles and values of wild foods in agricultural systems. *Philosophical transactions of the Royal Society of London*, **365**, 2913–26.
- Blanchet S., Helmus M.R., Brosse S., & Grenouillet G. (2014) Regional vs local drivers of phylogenetic and species diversity in stream fish communities. *Freshwater Biology*, **59**, 450–462.
- Blomberg S.P., Garland T., & Ives A.R. (2003) Testing for phylogenetic signal in comparative data: behavioral traits are more labile. *Evolution*, **57**, 717–45.
- Bohn H.F. & Federle W. (2004) Insect aquaplaning: *Nepenthes* pitcher plants capture prey with the peristome, a fully wettable water-lubricated anisotropic surface. *PNAS*, **101**, 14138–43.
- Bonhomme V., Gounand I., Alaux C., Jusselin E., Barth D., & Gaume L. (2011a) The plant-ant *Camponotus schmitzi* helps its carnivorous host-plant *Nepenthes bicalcarata* to catch its prey. *Journal of Tropical Ecology*, **27**, 15–24.
- Bonhomme V., Pelloux-Prayer H., Jusselin E., Forterre Y., Labat J.-J., & Gaume L. (2011b) Slippery or sticky? Functional diversity in the trapping strategy of *Nepenthes* carnivorous plants. *New Phytologist*, **191**, 545–54.
- Brandt A.J., Seabloom E.W., & Hosseini P.R. (2009) Phylogeny and provenance affect plant-soil feedbacks in invaded California grasslands. *Ecology*, **90**, 1063–1072.
- Brockington S.F., Alexandre R., Ramdial J., Moore M.J., Crawley S., Dhingra A., Hilu K., Soltis D.E., & Soltis P.S. (2009) Phylogeny of the Caryophyllales *sensu lato*: revisiting hypotheses on pollination biology and perianth differentiation in the core Caryophyllales. *International Journal of Plant Sciences*, **170**, 627–643.
- Brooks R. (1988) *Serpentine and its vegetation. A multidisciplinary approach*. Dioscorides Press, Inc., Portland.
- Buch F., Rott M., Rottloff S., Paetz C., Hilke I., Raessler M., & Mithöfer A. (2013) Secreted pitfall-trap fluid of carnivorous *Nepenthes* plants is unsuitable for microbial growth. *Annals of Botany*, **111**, 375–83.
- Buel, J.W. (1887) *Sea and Land*. J. S. Robertson. Toronto.
- Burns J. & Strauss S.Y. (2011) More closely related species are more ecologically similar in an experimental test. *PNAS*, **108**, 5302–5307.
- Cadena C.D., Kozak K.H., Gomez J.P., Parra J.L., McCain C.M., Bowie R.C.K., Carnaval A.C., Moritz C., Rahbek C., Roberts T.E., Sanders N.J., Schneider C.J., VanDerWal J., Zamudio K.R., & Graham C.H. (2011) Latitude, elevational climatic zonation and speciation in New World vertebrates. *Proceedings of the Royal Society B: Biological Sciences*, **279**, 194–201.
- Carlquist S. (1966) Wood anatomy of compositae: a summary, with comments on factors controlling wood evolution. *Aliso*, **6**, 25–44.
- Carlquist S. (1975) Wood anatomy and relationships of Lactoridaceae. *American Journal of Botany*, **102**, 128–134.

- Carlquist S. (1981) Wood anatomy of Nepenthaceae. *Bulletin of the Torrey Botanical Club*, **108**, 324–330.
- Carlquist S. (1984) Vessel grouping in dicotyledon wood: significance and relationship to imperforate tracheary elements. *Aliso*, **10**, 505–525.
- Carlquist S. (1988) *Comparative wood anatomy: systematic, ecological and evolutionary aspects of dicotyledon wood*. Springer-Verlag, Berlin.
- Carlquist S. (1989) Anatomy of vine and liana stems: a review and synthesis. *The Biology of Vines* (ed. by F. Putz and H. Mooney), pp. 53–71. Cambridge University Press, Cambridge.
- Carlquist S. (1995) Wood anatomy of Caryophyllaceae: ecological, habitat, systematic, and phylogenetic implications. *Aliso* **14**, 1–17.
- Carlquist S. (1999a) Wood, stem, and root anatomy of Basellaceae with relation to habit, systematics, and cambial variants. *Flora* **194**, 1–12.
- Carlquist S. (1999b) Wood anatomy, stem anatomy, and cambial activity of *Barbeuia* (Caryophyllales). *IAWA Journal* **20**, 431–440.
- Carlquist S. (2001) Wood and stem anatomy of Rhabdodendraceae is consistent with placement in Caryophyllales sensu lato. *IAWA Journal* **22**, 171–181.
- Carlquist S. (2002) Wood anatomy and successive cambia in *Simmodsia* (Simmodsiaceae): evidence for inclusion in Caryophyllales S.L. *Madorno* **49**, 158–164.
- Carlquist S. (2003a) Wood anatomy of Polygonaceae: analysis of a family with exceptional wood diversity. *Botanical Journal of the Linnean Society*, **141**, 25–51.
- Carlquist S. (2003b) Wood and stem anatomy of woody Amaranthaceae s.s.: ecology, systematics and the problems of defining rays in dicotyledons. *Botanical Journal of the Linnean Society*, **143**, 1–19.
- Carlquist S. (2004) Lateral meristems, successive cambia and their products: a reinterpretation based on roots and stems of Nyctaginaceae. *Botanical Journal Of The Linnean Society* **146**: 129–143.
- Carlquist S. (2006) *Asteropeia* and *Physena* (Caryophyllales): A case study in comparative wood anatomy. *Brittonia*, **58**, 301–313.
- Carlquist S. (2010) Caryophyllales: a key group for understanding wood anatomy character states and their evolution. *Botanical Journal of the Linnean Society*, **164**, 342–393.
- Carlquist S. & Boggs C. (1996) Wood Anatomy of Plumbaginaceae. *Bulletin of The Torrey Botanical Club*, **123**, 135–147.
- Carroll C. (2010) Role of climatic niche models in focal-species-based conservation planning: assessing potential effects of climate change on Northern Spotted Owl in the Pacific Northwest, USA. *Biological Conservation*, **143**, 1432–1437.
- Cavender-Bares J., Ackerly D.D., Baum D.A., & Bazzaz F.A. (2004) Phylogenetic overdispersion in Floridian oak communities. *The American Naturalist*, **163**, 823–843.

- Chase M.W., Christenhusz M.J.M., Sanders D., & Fay M.F. (2009) Murderous plants: Victorian Gothic, Darwin and modern insights into vegetable carnivory. *Botanical Journal of the Linnean Society*, **161**, 329–356.
- Chave J., Coomes D., Jansen S., Lewis S.L., Swenson N.G., & Zanne A.E. (2009) Towards a worldwide wood economics spectrum. *Ecology Letters*, **12**, 351–366.
- Chave J., Muller-Landau H.C., Baker T.R., Easdale T.A., ter Steege H., & Webb C.O. (2006) Regional and phylogenetic variation of wood density across 2456 neotropical tree species. *Ecological Applications*, **16**, 2356–2367.
- Chazdon R.L., Careaga S., Webb C., & Vargas O. (2003) Community and phylogenetic structure of reproductive traits of woody species in wet tropical forests. *Ecological Monographs*, **73**, 331–348.
- Cheek M. & Jebb M. (2001) Nepenthaceae. *Flora Malesiana*, **15**, 1–157.
- Cheek M. & Jebb M. (2013) Recircumscription of the *Nepenthes alata* group (Caryophyllales: Nepenthaceae), in the Philippines, with four new species. *European Journal of Taxonomy*, **69**, 1–23.
- Cheek M., Jebb M., & Nooteboom H.P. (2001) *Flora Malesiana. Series I: Spermatophyta = Flowering plants. Vol. 15: Nepenthaceae*. Nationaal Herbarium Nederland, Leiden.
- Chen I.C., Shiu H.J., Benedick S., Holloway J.D., Cheye V.K., Barlow H.S., Hill J., & Thomas. C.D. (2009) Elevation increases in moth assemblages over 42 years on a tropical mountain. *PNAS*, **106**, 1479–1483.
- Chiej R. (1984) *Encyclopedia of Medicinal Plants*. Little, Brown, New York.
- Chin L., Moran J.A., & Clarke C. (2010) Trap geometry in three giant montane pitcher plant species from Borneo is a function of tree shrew body size. *New Phytologist*, **186**, 461–70.
- Choat B., Jansen S., Brodribb T.J., Cochard H., Delzon S., Bhaskar R., Bucci S.J., Feild T.S., Gleason S.M., Hacke U.G., Jacobsen A.L., Lens F., Maherali H., Martínez-Vilalta J., Mayr S., Mencuccini M., Mitchell P.J., Nardini A., Pittermann J., Pratt R.B., Sperry J.S., Westoby M., Wright I.J., & Zanne A.E. (2012) Global convergence in the vulnerability of forests to drought. *Nature*, **491**, 752–5.
- Christensen H. (2002) *Ethnobotany of the Iban & the Kelabit*. Nepcon; University of Aarhus; Forest Department Sarawak, Malaysia,
- Clarke C. & Moran J.A. (2011) Incorporating ecological context: a revised protocol for the preservation of *Nepenthes* pitcher plant specimens (Nepenthaceae). *Blumea*, **56**, 225–228.
- Clarke C. & Wong K.M. (1997) *Nepenthes of Borneo*. Natural History Publications in association with Science and Technology Unit, Sabah.
- Clarke C.M., Bauer U., Lee C.C., Tuen A.A., Rembold K., & Moran J.A. (2009) Tree shrew lavatories: a novel nitrogen sequestration strategy in a tropical pitcher plant. *Biology letters*, **5**, 632–5.
- Colwell R.K. & Futuyma D.J. (2014) On the measurement of niche breadth and

- overlap. *Ecological Society of America*, **52**, 567–576.
- Corlett R.T. (2011) Impacts of warming on tropical lowland rainforests. *Trends in Ecology and Evolution*, **26**, 606–13.
- Cottam M.A., Hall R., Sperber C., Kohn B.P., Forster M.A., Batt G.E. (2013) Neogene rock uplift and erosion in northern Borneo: evidence from the Kinabalu granite, Mount Kinabalu. *Journal Geological Society London*, **170**, 805–816.
- Couvreux T.L.P., Porter-Morgan H., Wieringa J.J., & Chatrou L.W. (2011) Little ecological divergence associated with speciation in two African rain forest tree genera. *BMC Evolutionary Biology*, **11**, 296.
- Crisp M.D., Arroyo M.T.K., Cook L.G., Gandolfo M.A., Jordan G.J., McGlone M.S., Weston P.H., Westoby M., Wilf P., & Linder H.P. (2009) Phylogenetic biome conservatism on a global scale. *Nature*, **458**, 754–6.
- Cuénoud P., Savolainen V., Chatrou L.W., Powell M., Grayer R.J., & Chase M.W. (2002) Molecular phylogenetics of Caryophyllales based on nuclear 18S rDNA and plastid *rbcl*, *atpB*, and *matK* DNA sequences. *American Journal of Botany*, **89**, 132–144.
- Culmsee H. & Leuschner C. (2013) Consistent patterns of elevational change in tree taxonomic and phylogenetic diversity across Malesian mountain forests. *Journal of Biogeography*, **40**, 1997–2010.
- Darwin C.R. (1875) *Insectivorous Plants*. John Murray, London.
- Darwin C.R. (1859) *The Origin of Species*. John Murray, London.
- Das I. & Haas A. (2010) New species of Microhyla from Sarawak: Old World's smallest frogs crawl out of miniature pitcher plants on Borneo (Amphibia: Anura: Microhylidae). *Zootaxa*, **2571**, 37–52.
- Davey T.M., Allotey P., & Reidpath D.D. (2013) Is obesity an ineluctable consequence of development? A case study of Malaysia. *Public Health*, **127**, 1057–62.
- Deavin G., Denis J.I., Djandam A.M., Dols H., Lajumin P., Lanting A.Y., Lasimbang R., Spence J., & Widjojo N. (2012) *The Human Heart of Borneo*. WWF Heart of Borneo Global Initiative.
- Dormann C.F., Elith J., Bacher S., Buchmann C., Carl G., Carré G., Marquéz J.R.G., Gruber B., Lafourcade B., Leitão P.J., Münkemüller T., McClean C., Osborne P.E., Reineking B., Schröder B., Skidmore A.K., Zurell D., & Lautenbach S. (2013) Collinearity: a review of methods to deal with it and a simulation study evaluating their performance. *Ecography*, **36**, 027–046.
- Doyle J.J. & Doyle J. (1990) Isolation of plant DNA from fresh tissue. *Focus*, **12**, 13–15.
- Drummond A.J., Suchard M.A., Xie D., & Rambaut A. (2012) Bayesian phylogenetics with BEAUti and the BEAST 1.7. *Molecular Biology and Evolution*, **29**, 1969–1973.
- Elith J., Graham C.H., Anderson R.P., Dudik M., Ferrier S., Guisan A., Hijmans R.J., Huettmann F., Leathwick J.R., Lehmann A., Li J., Lohmann L.G.,

- Loiselle B.A., Manion G., Moritz C., Nakamura M., Nakazawa Y., Overton J.M.C., Peterson A.T., Phillips S.J., Richardson K., Scachetti-Pereira R., Schapire R.E., Soberon J., Williams S., Wisz M.S., & Zimmermann N.E. (2006) Novel methods improve prediction of species' distributions from occurrence data. *Ecography*, **29**, 129–151.
- Elith J., Phillips S.J., Hastie T., Dudík M., Chee Y.E., & Yates C.J. (2011) A statistical explanation of MaxEnt for ecologists. *Diversity and Distributions*, **17**, 43–57.
- Ellison A.M. & Gotelli N.J. (2001) Evolutionary ecology of carnivorous plants. *Trends in Ecology & Evolution*, **16**, 623–629.
- Ellison A.M. & Gotelli N.J. (2009) Energetics and the evolution of carnivorous plants - Darwin's "most wonderful plants in the world". *Journal of Experimental Botany*, **60**, 19–42.
- van der Ent A., Sumail S., & Clarke C. (2015) Habitat differentiation of obligate ultramafic *Nepenthes* endemic to Mount Kinabalu and Mount Tambuyukon (Sabah, Malaysia). *Plant Ecology*, **216**, 789–807.
- Fahn A. (1979) *Secretory tissues in plants*. Academic Press, London.
- Fahn A. (1990) *Plant anatomy*. Pergamon Press, Oxford.
- Favre A., Päckert M., Pauls S.U., Jähmig S.C., Uhl D., Michalak I., & Muellner-Riehl A.N. (2014) The role of the uplift of the Qinghai-Tibetan Plateau for the evolution of Tibetan biotas. *Biological Reviews*, **90**, 236–253.
- Felsenstein J. (1973) Maximum likelihood and minimum-steps methods for estimating evolutionary trees from data on discrete characters. *Systematic Zoology*, **22**, 240–249.
- Felsenstein J. (1985) Phylogenies and the comparative method. *The American Naturalist*, **125**, 1–15.
- Francisco-Ortega J., Jansen R.K., & Santos-Guerra A. (1996) Chloroplast DNA evidence of colonization, adaptive radiation, and hybridization in the evolution of the Macaronesian flora. *PNAS*, **93**, 4085–4090.
- Gathorne-Hardy F.J., Davies R.G., Eggleton P., & Jones D.T. (2002) Quaternary rainforest refugia in Southeast Asia: using termites (*Isoptera*) as indicators. *Biological Journal of the Linnean Society*, **75**, 453–466.
- Gaume L. & Forterre Y. (2007) A viscoelastic deadly fluid in carnivorous pitcher plants. *PloS ONE*, **2**, e1185.
- Gaume L. & Di Giusto B. (2009) Adaptive significance and ontogenetic variability of the waxy zone in *Nepenthes rafflesiana*. *Annals of Botany*, **104**, 1281–91.
- Gawin D.F., Rahman M.A., Ramji M.F.S., Smith B.T., Lim H.C., Moyle R.G., & Sheldon F.H. (2014) Patterns of avian diversification in Borneo: the case of the endemic Mountain Black-eye *Chlorocharis emiliae*. *The Auk*, **131**, 86–99.
- Gernhard T. (2008) The conditioned reconstructed process. *Journal of Theoretical Biology*, **253**, 769–778.
- Ghalambor C.K., Huey R.B., Martin P.R., Tewksbury J.J., & Wang G. (2006)

- Are mountain passes higher in the tropics? Janzen's hypothesis revisited. *Integrative and Comparative Biology*, **46**, 5–17.
- Di Giusto B., Bessi re J.-M., Gu roult M., Lim L.B.L., Marshall D.J., Hossaert-McKey M., & Gaume L. (2010) Flower-scent mimicry masks a deadly trap in the carnivorous plant *Nepenthes rafflesiana*. *Journal of Ecology*, **98**, 845–856.
- Di Giusto B., Grosbois V., Fargeas E., Marshall D.J., & Gaume L. (2008) Contribution of pitcher fragrance and fluid viscosity to high prey diversity in a *Nepenthes* carnivorous plant from Borneo. *Journal of Biosciences*, **33**, 121–36.
- Givnish T.J. (1997) Adaptive radiation and molecular systematics: issues and approaches. *Molecular Evolution and Adaptive Radiation* (ed. by T.J. Givnish and K.J. Systma), pp. 1–54. Cambridge University Press, Cambridge.
- Godoy O., Kraft N.J.B., & Levine J.M. (2014) Phylogenetic relatedness and the determinants of competitive outcomes. *Ecology Letters*, **17**, 836–844.
- Goecks J., Nekrutenko A., & Taylor J. (2010) Galaxy: a comprehensive approach for supporting accessible, reproducible and transparent computational research in the life sciences. *Genome Biology*, **11**, R86.
- Goodman M. (1981) Decoding the pattern of protein evolution. *Progress in Biophysics and Molecular Biology*, **38**, 105–64.
- Gorb E. V., Baum M.J., & Gorb S.N. (2013) Development and regeneration ability of the wax coverage in *Nepenthes alata* pitchers: a cryo-SEM approach. *Scientific Reports*, **3**, 3078.
- Gottwald H. & Parameswaran N. (1968) Das sekund re xylem und die systematische stellung der Ancistrocladaceae und Dioncophyllaceae. *Stellung and Botanisches Jahrbuch*, **88**, 49–69.
- Graham C.H., Carnaval A.C., Cadena C.D., Zamudio K.R., Roberts T.E., Parra J.L., McCain C.M., Bowie R.C.K., Moritz C., Baines S.B., Schneider C.J., Vanderwal J., Rahbek C., Kozak K.H., & Sanders N.J. (2014) The origin and maintenance of montane diversity: integrating evolutionary and ecological processes. *Ecography*, **37**, 711–719.
- Graham C.H., Ron S.R., Santos J.C., Schneider C.J., & Moritz C. (2004) Integrating phylogenetics and environmental niche models to explore speciation mechanisms in dendrobatid frogs. *Evolution*, **58**, 1781.
- Greenwood M., Clarke C., Lee C.C., Gunsalam A., & Clarke R.H. (2011) A unique resource mutualism between the giant Bornean pitcher plant, *Nepenthes rajah*, and members of a small mammal community. *PLOS ONE*, **6**, e21114.
- Grubb P.J. (1971) Interpretation of the "Massenerhebung" Effect on tropical mountains. *Nature*, **229**, 44–45.
- Hall R. (1998) The plate tectonics of Cenozoic SE Asia and the distribution of land and sea. *Biogeography and Geological Evolution of SE Asia* (ed. by R. Hall and J.D. Holloway), pp. 99–131. Backhuys Publishers, Leiden.

- Hammond J. (1933) *Winjan's People*. Imperial Printing Co., Perth.
- Heibl C. (2011) Package phyloclim: integrating phylogenetics and climatic niche modelling.
- Heinricher E. (1906) Biologie von *Nepenthes*: speciell der Javanischen *N. melamphora*. *Annals du Jardin de Buitenzorg*, **20**, 277–298.
- Hellinger E. (1909) Neue Begründung der Theorie quadratischer Formen von unendlichvielen Veränderlichen. *Journal für die reine und angewandte Mathematik*, **136**, 210–271.
- Heubl G., Bringmann G., & Meimberg H. (2006) Molecular phylogeny and character evolution of carnivorous plant families in Caryophyllales - revisited. *Plant Biology*, **8**, 821–30.
- Hijmans R.J., Cameron S.E., Parra J.L., Jones P.G., & Jarvis A. (2005) Very high resolution interpolated climate surfaces for global land areas. *International Journal of Climatology*, **25**, 1965–1978.
- Holt R., Barfield M., & Gomulkiewicz R. (2005) Theories of niche conservatism and evolution: could exotic species be potential tests? *Species Invasions: Insights into Ecology, Evolution, and Biogeography*. (ed. by D. Sax, J. Stachowicz, and S. Gaines), pp. 259–290. Sinauer Associates, Sunderland.
- Hooker J.D. (1859) XXXV. On the origin and development of the pitchers of *Nepenthes*, with an account of some new Bornean plants of that genus. *Transactions of the Linnean Society of London*, **22**, 415–424.
- Hoorn C., Mosbrugger V., Mulch A., & Antonelli A. (2013) Biodiversity from mountain building. *Nature Geoscience*, **6**, 154–154.
- Huey R.B. & Webster T.P. (1976) Thermal biology of anolis lizards in a complex fauna: the *Christatellus* group on Puerto Rico. *Ecology*, **57**, 985–994.
- Human Resource Management Unit, Chief Minister Department of Sarawak in cooperation with State Attorney General. (1958) *Laws of Sarawak: Forest Ordinance*. Kuching.
- Hutchinson G.E. (1957) Concluding remarks. *Cold Spring Harbor Symposia on Quantitative Biology*, **22**, 415–427.
- IAWA C. (1989) IAWA list of microscopic features for hardwood identification. *International Association of Wood Anatomists Bulletin*, **10**, 221–332.
- IPCC (2013) IPCC summary for policymakers in climate change 2013: the physical science basis. Stockholm: Cambridge University Press.
- IPCC (2014) *Climate Change 2014: Impacts, adaptation and vulnerability. Contribution of working group II to the fifth assessment report of the Intergovernmental Panel on Climate Change*. Cambridge University Press, Cambridge, United Kingdom and New York.
- IUCN. 2015. The IUCN Red List of Threatened Species. Version 2014.3. <http://www.iucnredlist.org/>
- Institute for Public Health Ministry of Malaysia. (2011) National Health and Morbidity Survey 2011.
- Jackson S.T. & Overpeck J.T. (2000) Responses of plant populations and

- communities to environmental changes of the late Quaternary. *The Paleontological Society*, **26**, 194–220.
- Jaiswal V. (2010) Culture and ethnobotany of Jaintia tribal community of Meghalaya, Northeast India - A mini review. *Indian Journal of Traditional Knowledge*, **9**, 38–44.
- Jakob S.S., Heibl C., Rödder D., & Blattner F.R. (2010) Population demography influences climatic niche evolution: evidence from diploid American *Hordeum* species (Poaceae). *Molecular Ecology*, **19**, 1423–38.
- Jan B. (2007) Sweet but dangerous: nectaries in carnivorous plants. *Acta agrobotanica*, **60**, 31–37.
- Janzen D.H. (1967) Fire, vegetation structure, and the Ant X *Acacia* interaction in Central America. *Ecological Society of America*, **48**, 26–35.
- Jebb (1991) An account of *Nepenthes* in New Guinea - Wikipedia, the free encyclopedia. *Science in New Guinea*, **17**, 7–54.
- Jennings D.E. & Rohr J.R. (2011) A review of the conservation threats to carnivorous plants. *Biological Conservation*, **144**, 1356–1363.
- Jiang L., Tan J., & Pu Z. (2010) An experimental test of Darwin's naturalization hypothesis. *The American Naturalist*, **175**, 415–23.
- Juniper B., Robins R., & Joel D.M. (1989) *The carnivorous plants*. Academic Press, London; San Diego.
- Katoh K., Misawa K., Kuma K., & Miyata T. (2002) MAFFT: a novel method for rapid multiple sequence alignment based on fast Fourier transform. *Nucleic Acids Research*, **30**, 3059–3066.
- Kendall D. (1989) A survey of the statistical theory of shape. *Statistical Science*, **4**, 87–120.
- Kidner C., Groover A., Thomas D.C., Emelianova K., Soliz-Gamboa C., & Lens F. (2016) First steps in studying the origins of secondary woodiness in *Begonia* (Begoniaceae): combining anatomy, phylogenetics, and stem transcriptomics. *Biological Journal of the Linnean Society*, **117**, 121–1.
- Kitayama K. (1992) An altitudinal transect study of the vegetation on Mount Kinabalu, Borneo. *Vegetatio*, **102**, 149–171.
- Knox E.B. & Palmer J.D. (1995) Chloroplast DNA variation and the recent radiation of the giant senecios (Asteraceae) on the tall mountains of eastern Africa. *PNAS*, **92**, 10349–10353.
- Kny L. & Zimmerman A. (1885) Die bedeutung der spiralzellen von *Nepenthes*. *Berichte der Deutschen Botanischen Gesellschaft*, **3**, 123–128.
- Korner C. & Spehn E. (2002) *Mountain Biodiversity: a Global Assessment*. Parthenon, Boca Raton.
- Kozak K.H. & Wiens J.J. (2006) Does niche conservatism promote speciation? a case study in North American salamanders. *Evolution*, **60**, 2604–2621.
- Krutzsch W. (1988) Paleogeography and historical phytogeography (paleochorology) in the Neophyticum. *Plant Systematics and Evolution*, **162**, 5–61.

- Laistrooglai A., Mosikarat P., & Wigran M. (2000) Packaging design with natural materials: A study for conservation. Silpakorn Univeristy Research & Development, Bangkok.
- Larsson A. (2014) AliView: a fast and lightweight alignment viewer and editor for large data sets. *Bioinformatics*, **30**, 3276–3278.
- Lens F., Davin N., Smets E., & del Arco M. (2013a) Insular woodiness on the canary islands: a remarkable case of convergent evolution. *International Journal of Plant Sciences*, **174**, 992–1013.
- Lens F., Dressler S., Jansen S., van Evelghem L., & Smets E. (2005) Within balsaminoid Ericales: a wood anatomical approach. *American Journal of Botany*, **92**, 941–953.
- Lens F., Endress M.E., Baas P., Jansen S., & Smets E. (2008a) Wood anatomy of Rauvolfioideae (Apocynaceae): a search for meaningful non-DNA characters at the tribal level. *American Journal of Botany*, **95**, 1199–1215.
- Lens F., Kårehed J., Baas P., Jansen S., Rabaey D., Huysmans S., Hamann T., & Smets E. (2008b) The wood anatomy of the polyphyletic Icacinaceae s.l., and their relationships within asterids. *Taxon*, **57**, 525–552.
- Lens F., Luteyn J.L., Smets E., & Jansen S. (2004) Ecological trends in the wood anatomy of Vaccinioideae (Ericaceae s.l.). *Flora*, **199**, 309–319.
- Lens F., Picon-Cochard C, Delmas CEL, Signarbieux C, Buttler A, Cochard H, Jansen S, Chauvin T, Doria LC, del Arco M, Delzon S. (In press) Herbaceous angiosperms are not more vulnerable to drought-induced embolism than angiosperm trees. *Plant Physiology* DOI:10.1104/pp.16.00829.
- Lens F., Sperry J., Christman M., Choat B., Rabaey D., & Jansen S. (2011) Testing hypotheses that link wood anatomy to cavitation resistance and hydraulic conductivity in the genus *Acer*. *New Phytologist*, **190**, 709–23.
- Lens F., Tixier A., Cochard H., Sperry J.S., Jansen S., & Herbette S. (2013b) Embolism resistance as a key mechanism to understand adaptive plant strategies. *Current Opinion in Plant Biology*, **16**, 287–292.
- Liew T., Schilthuizen M., & Bin Lakim M. (2009) The determinants of land snail diversity along a tropical elevational gradient: insularity, geometry and niches. *Journal of Biogeography*, **37**, 1071–1078.
- Likhitwitayawuid K., Kaewamatawong R., Ruangrunsi N., & Krungkrai J. (1998) Antimalarial naphthoquinones from *Nepenthes thorelii*. *Planta Medica*, **64**, 237–41.
- Limpisut P. & Jindal V.K. (2002) Comparison of rice flour pasting properties using Brabender Viscoamylograph and Rapid Visco Analyser for evaluating cooked rice texture. *Starch/Stärke*, **54**, 350–357.
- Lobo J.M., Jiménez-Valverde A., & Real R. (2008) AUC: a misleading measure of the performance of predictive distribution models. *Global Ecology and Biogeography*, **17**, 145–151.
- Lomolino M. (2001) Elevation gradients of species-density: historical and prospective views. *Global Ecology and Biogeography*, **10**, 3–13.

- Losos J.B. (2008) Phylogenetic niche conservatism, phylogenetic signal and the relationship between phylogenetic relatedness and ecological similarity among species. *Ecology Letters*, **11**, 995–1003.
- Losos J.B., Leal M., Glor R.E., De Queiroz K., Hertz P.E., Rodríguez Schettino L., Lara A.C., Jackman T.R., & Larson A. (2003) Niche lability in the evolution of a Caribbean lizard community. *Nature*, **424**, 542–5.
- Maddison W.P. & Maddison D.R. (2011) Mesquite: a modular system for evolutionary analysis. Version 2.75. <http://mesquiteproject.org>.
- Madriñán S., Cortés A.J., & Richardson J.E. (2013) Páramo is the world's fastest evolving and coolest biodiversity hotspot. *Frontiers in Genetics*, **4**, 1–7.
- Martin G.J. (1995) *Ethnobotany: A methods manual*. Chapman & Hall, London.
- Matloff N. (2008) R for Programmers. 1–104.
- Mauseth J.D. & Landrum J. V. (1997) Relictual vegetative anatomical characters in Cactaceae: the genus *Pereskia*. *Journal of Plant Research*, **110**, 55–64.
- McPherson S.R. (2012) *The New Nepenthes*. Redfern Natural History Productions Ltd, England.
- McPherson S.R. (2009) *Pitcher Plants of the Old World Vol. 1 Redfern Natural History*. Redfern Natural History Productions Ltd, England.
- Meimberg H., Dittrich P., Bringmann G., Schlauer J., & Heubl G. (2000) Molecular phylogeny of Caryophyllidae. s.l. based on matK sequences with special emphasis on carnivorous taxa. *Plant Biology*, **2**, 218–228.
- Meimberg H. & Heubl G. (2006) Introduction of a nuclear marker for phylogenetic analysis of Nepenthaceae. *Plant Biology*, **8**, 831–40.
- Meimberg H., Wistuba A., Dittrich P., & Heubl G. (2001) Molecular phylogeny of Nepenthaceae based on cladistic analysis of plastid trnK intron sequence data. *Plant Biology*, **3**, 164–175.
- Merbach M.A., Merbach D.J., Maschwitz U., Booth W.E., Fiala B., & Zizkaš G. (2002) Mass march of termites into the deadly trap. *Nature*, **415**, 36–37.
- Merckx V.S.F.T., Hendriks K., Arumugam N., Chung A.Y.C., Geml J., Janssens S.B., Joan, Lens F., Pereira T., Shim P.-S., Sugau J.B., Katja, Tuh F.Y.Y., de Boer H., Dow R., Gravendeel B., Jocqué M., Biun A., Feijen F.A.A., Beentjes K.K., Buang M.M., Feijen H., Geurts R., Hovenkamp P., Majapun R.J., Rahman H., Smit H., Suleiman M., Yahya B.E., Peijnenburg T.C.A., Kappes H., Morgado L.N., Sabran S., Schwallier R., Sol N., Sumail S., Mennes C.B., Khoo E., Neupane S., Sawang A., Spait M., Thomas D.C., Nais J., Repin R., Lakim M., & Menno S. (2015) Evolution of endemism on a young tropical mountain. *Nature*, **524**, 347–350.
- Merow C., Smith M.J., & Silander J.A. (2013) A practical guide to MaxEnt for modeling species' distributions: what it does, and why inputs and settings matter. *Ecography*, **36**, 1058–1069.
- Metcalfe C. & Chalk L. (1950) *Anatomy of the dicotyledons, vol. 11*. Clarendon Press, Oxford.
- Mey F.S. (2010) Introduction to the pitcher plants (*Nepenthes*) of Cambodia.

- Cambodian Journal of Natural History*, **2**, 106–117.
- Miettinen J., Shi C., & Liew S.C. (2011) Deforestation rates in insular Southeast Asia between 2000 and 2010. *Global Change Biology*, **17**, 2261–2270.
- Miettinen J., Shi C., Tan W.J., & Liew S.C. (2012) 2010 land cover map of insular Southeast Asia in 250m spatial resolution. *Remote Sensing Letters*, **3**, 11–20.
- Miller M., Holder M.T., Vos R., Midford P., Liebowitz T., Chan L., Hoover P., & Warnow T. (2010)
- Milliken W. (1992) Ethnobotany of the Yali of West Papua. Edinburgh: Royal Botanic Garden; 1992. 7, 19 & 30.
- Moran J.A. (2001) Termite prey specialization in the pitcher plant *Nepenthes albomarginata* - evidence from stable isotope analysis. *Annals of Botany*, **88**, 307–311.
- Moran J.A. (1996) Pitcher dimorphism, composition prey and the mechanisms of prey attraction in the pitcher plant *Nepenthes rafflesiana* in Borneo. *Journal of Ecology*, **84**, 515–525.
- Moran J.A., Booth W.E., & Charles J.K. (1999) Aspects of pitcher morphology and spectral characteristics of six Bornean *Nepenthes* pitcher plant species: implications for prey capture. *Annals of Botany*, **83**, 521–528.
- Moran J.A., Clarke C., & Gowen B.E. (2012) The use of light in prey capture by the tropical pitcher plant *Nepenthes aristolochioides*. *Plant Signaling & Behavior*, **7**, 957–960.
- Moran J.A., Clarke C.M., & Hawkins B.J. (2003) From carnivore to detritivore? Isotopic evidence for leaf litter utilization by the tropical pitcher plant *Nepenthes ampullaria*. *International Journal of Plant Sciences*, **164**, 635–639.
- Moran J.A., Gray L.K., Clarke C., & Chin L. (2013) Capture mechanism in Palaeotropical pitcher plants (Nepenthaceae) is constrained by climate. *Annals of Botany*, **112**, 1279–91.
- Myers N., Mittermeier R.A., Mittermeier C.G., da Fonseca G.A.B., & Kent J. (2000) Biodiversity hotspots for conservation priorities. *Nature*, **403**, 853–858.
- van der Niet T., Zollikofer C.P.E., León M.S.P. De, Johnson S.D., & Linder H.P. (2010) Three-dimensional geometric morphometrics for studying floral shape variation. *Trends in Plant Science*, **15**, 423–6.
- Nilsson R. & Nilsson G. (1958) Studies concerning Swedish ropy milk: the antibiotic qualities of ropy milk. *Archiv für Mikrobiologie*, **31**, 191–197.
- Nongrum I., Kumar S., Kumaria S., & Tandon P. (2012) Genetic variation and gene flow estimation of *Nepenthes khasiana* Hook. Threatened insectivorous plant of India as revealed by RAPD markers. *Journal of Crop Science Biotechnology*, **15**, 101–105.
- Noshiro S. & Baas P. (2000) Trends in wood anatomy within species and genera: case study in *Cornus* s.l. (Cornaceae). *American Journal of Botany*, **87**, 1495–1506.
- Nürk N.M., Uribe-Convers S., Gehrke B., Tank D.C., & Blattner F.R. (2015) Oligocene niche shift, Miocene diversification – cold tolerance and

- accelerated speciation rates in the St. John's Worts (Hypericum, Hypericaceae). *BMC Evolutionary Biology*, **15**, 1–13.
- Odahara M., Sokooshi H., Takahashi T., Okadome H., & Ohtsubo K. (2004) The effect of sushi vinegar on texture of sushi rice before and after storage under low temperature. *Nippon Shokuhin Kagaku Kogaku Kaishi*, **51**, 620–625.
- van den Oever L., Baas P., & Zandee M. (1981) Comparative wood anatomy of *Symplocos* and latitude and altitude of provenance. *IAWA Bulletin new series*, **2**, 3–24.
- Olson ME, Gaskin JF, Ghahremani-Nejad F. (2003) Stem anatomy is congruent with molecular phylogenies placing *Hypericopsis persica* in *Frankenia* (Frankeniaceae): comments on vasicentric tracheids. *Taxon* **52**: 525–532.
- Olson M.E., Anfodillo T., Rosell J.A., Petit G., Crivellaro A., Isnard S., León-Gómez C., Alvarado-Cárdenas L.O., & Castorena M. (2014) Universal hydraulics of the flowering plants: vessel diameter scales with stem length across angiosperm lineages, habits and climates. *Ecology Letters*, **17**, 988–997.
- Ornelas J.F., Sosa V., Soltis D.E., Daza J.M., Gonzalez C., Soltis P.S., Gutierrez-Rodriguez C., de los Monteros A.E., Castoe T.A., Bell C., & Ruiz-Sanchez E. (2013) Comparative phylogeographic analyses illustrate the complex evolutionary history of threatened cloud forests of Northern Mesoamerica. *PLoS ONE*, **8**, .
- Osunkoya O.O., Daud S.D., Di-Giusto B., Wimmer F.L., & Holige T.M. (2007) Construction costs and physico-chemical properties of the assimilatory organs of *Nepenthes* species in Northern Borneo. *Annals of Botany*, **99**, 895–906.
- Osunkoya O.O., Daud S.D., & Wimmer F.L. (2008) Longevity, lignin content and construction cost of the assimilatory organs of *Nepenthes* species. *Annals of Botany*, **102**, 845–53.
- Owen T.P. & Lennon K.A. (1999) Structure and development of the pitchers from the carnivorous plant *Nepenthes alata* (Nepenthaceae). *American Journal of Botany*, **86**, 1382–1390.
- Owen T.P., Lennon K.A., Santo M.J., & Anderson A.N. (1999) Pathways for nutrient transport in the pitchers of the carnivorous plant *Nepenthes alata*. *Annals of Botany*, **84**, 459–466.
- Pacifici A.M., Foden W.B., Visconti P., Watson J.E.M., Butchart S.H.M., Kovacs K.M., Scheffers B.R., Hole D.G., Martin T.G., Akçakaya H.R., Corlett R.T., Huntley B., Bickford D., Carr J.A., Hoffmann A.A., Midgley G.F., Pearce-Kelly P., Pearson R.G., Williams S.E., Willis S.G., Young B., & Rondinini C. (2015) Assessing species vulnerability to climate change. *Nature Climate Change*, **5**, 215–225.
- Pant D.D. & Bhatnagar S. (1977) Morphological studies in *Nepenthes* (Nepenthaceae). *Phytomorphology*, **27**, 13–34.
- Parry D. & Kelso M. (1977) The ultrastructure and analytical microscopy of

- silicon deposits in the roots of *Saccharum officinarum* (L.). *Annals of Botany*, **4**, 855–862.
- Pavlovič A., Slovákova L., & Šantrůček J. (2011) Nutritional benefit from leaf litter utilization in the pitcher plant *Nepenthes ampullaria*. *Plant, Cell & Environment*, **34**, 1865–73.
- Pearman P.B., Guisan A., Broennimann O., & Randin C.F. (2008) Niche dynamics in space and time. *Trends in Ecology & Evolution*, **23**, 149–58.
- Pearson R.G., Raxworthy C.J., Nakamura M., & Townsend Peterson A. (2007) Predicting species distributions from small numbers of occurrence records: a test case using cryptic geckos in Madagascar. *Journal of Biogeography*, **34**, 102–117.
- Perry L.M. & Metzger J. (1980) *Medicinal plants of East and Southeast Asia: attributed properties and uses*. MIT press, Cambridge, MA.
- Phillips S.J., Anderson R.P., & Schapire R.E. (2006) Maximum entropy modeling of species geographic distributions. *Ecological Modelling*, **190**, 231–259.
- Pietro Paolo J. & Pietro Paolo P. (1986) *Carnivorous Plants of the World*. Timber Press, Portland.
- Pilgrim S. & Pretty J. (2010) *Nature and Culture: Rebuilding Lost Connections*. Earthscan, London.
- Pilgrim S.E., Cullen L.C., Smith D.J., & Pretty J. (2008) Ecological knowledge is lost in wealthier communities and countries. *Environmental Science & Technology*, **42**, 1004–1009.
- Pinthong K., Chaveerach A., Tanee T., Sudmoon R., & Mookamul P. (2009) Differential expressed protein in developing stages of *Nepenthes gracilis* Korth. pitcher. *Pakistan Journal of Biological Sciences*, **12**, 526–529.
- Plat H. (1609) *Delights for Ladies: to adorn their persons, tables, closets, and distillatories with beauties, banquets, perfumes and waters*. Hymfrey Lownes, London.
- Popkin B.M. (2006) Global nutrition dynamics: the world is shifting rapidly toward a diet linked with noncommunicable diseases. *The American Journal of Clinical Nutrition*, **84**, 289–298.
- Popkin B.M., Adair L.S., & Ng S.W. (2012) Global nutrition transition and the pandemic of obesity in developing countries. *Nutrition reviews*, **70**, 3–21.
- Pretty J., Adams B., Berkes F., de Athayde S.F., Dudley N., Hunn E., Maffi L., Milton K., Rapport D., Robbins P., Sterling E., Stolton S., Tsing A., Vintinnerk E., & Pilgrim S. (2009) The intersections of biological diversity and cultural diversity: towards integration. *Conservation and Society*, **7**, 100–112.
- Price S. (1982) When is a calabash not a calabash? *New West Indian Guide / Nieuwe West-Indische Gids*, **56**, 69–82.
- Price T.D., Hooper D.M., Buchanan C.D., Johansson U.S., Tietze D.T., Alström P., Olsson U., Ghosh-Harihar M., Ishtiaq F., Gupta S.K., Martens J., Harr B., Singh P., & Mohan D. (2014) Niche filling slows the diversification of

- Himalayan songbirds. *Nature*, **509**, 222–5.
- Prinzing A., Durka W., Klotz S., & Brandl R. (2001) The niche of higher plants: evidence for phylogenetic conservatism. *PNAS*, **268**, 2383–9.
- Raes N. & ter Steege H. (2007) A null-model for significance testing of presence-only species distribution models. *Ecography*, **30**, 727–736.
- Rahbek C. (1995) The elevational gradient of species richness: a uniform pattern? *Ecography*, **18**, 200–205.
- Rahbek C. (2004) The role of spatial scale and the perception of large-scale species-richness patterns. *Ecology Letters*, **8**, 224–239.
- Ravussin E., Valencia M.E., Esparza J., Bennett P.H., & Schulz L.O. (1994) Effects of a traditional lifestyle on obesity in Pima Indians. *Diabetes Care*, **17**, 1067–1074.
- Raxworthy C.J., Ingram C.M., Rabibisoa N., & Pearson R.G. (2007) Applications of ecological niche modeling for species delimitation: a review and empirical evaluation using day geckos (*Phelsuma*) from Madagascar. *Systematic Biology*, **56**, 907–23.
- Rembold K., Fischer E., Striffler B.F., & Barthlott W. (2012) Crab spider association with the Malagasy pitcher plant *Nepenthes madagascariensis*. *African Journal of Ecology*, **51**, 188–191.
- Rembold K., Fischer E., Wetzel M. a., & Barthlott W. (2010) Prey composition of the pitcher plant *Nepenthes madagascariensis*. *Journal of Tropical Ecology*, **26**, 365–372.
- Robinson A., Nerz J., & Wistuba A. (2011) *Nepenthes epiphytica*, a new pitcher plant from East Kalimantan. *New Nepenthes* (ed. by N. Sanders, M. Lessard, C. Fitzpatrick, R. Dunn, and S. McPherson), pp. 35–51. Redfern Natural History Productions Ltd, Poole.
- Robinson A.S., Fleischmann A.S., Mcpherson S.R., Heinrich V.B., Gironella E.P., & Peña C.Q. (2009) A spectacular new species of *Nepenthes* L. (Nepenthaceae) pitcher plant from central Palawan, Philippines. *Botanical Journal of the Linnean Society*, **159**, 195–202.
- Rodman J. (1994) Cladistic and phenetic studies. *Caryophyllales* (ed. by H. Behnke and T. Mabry), pp. 279–301. Springer-Verlag, Berlin & Heidelberg.
- Rodriguez-Castaneda G., Dyer L.A., Brehm G., Connahs H., Forkner R.E., & Walla T.R. (2010) Tropical forests are not flat: how mountains affect herbivore diversity. *Ecology Letters*, **13**, 1348–1357.
- Rokas A. & Carroll S.B. (2005) More genes or more taxa? The relative contribution of gene number and taxon number to phylogenetic accuracy. *Molecular Biology and Evolution*, **22**, 1337–1344.
- Rousseau S. (2013) *Food and social media: You are what you tweet*. AltaMira Press, Plymouth.
- Le Roux P.C. & McGeoch M.A. (2008) Rapid range expansion and community reorganization in response to warming. *Global Change Biology*, **14**, 2950–2962.

- Schäferhoff B., Müller K.F., & Borsch T. (2009) Caryophyllales phylogenetics: disentangling Phytolaccaceae and Molluginaceae and description of Microteaceae as a new isolated family. *Willdenowia - Annals of the Botanic Garden and Botanical Museum Berlin-Dahlem*, **39**, 209–228.
- Schiffers K., Borne E., Lavergne S., Thuiller W., & Travis J. (2013) Limited evolutionary rescue of locally adapted populations facing climate change. *Philosophical Transactions of the Royal Society of London*, **368**, 20120083.
- Schiller J., Rao S., Inthapanya P., & Hasadong (2006) Glutinous rice in Laos. *Rice in Laos* (ed. by J. Schiller, M. Chanphengxay, B. Linquist, and S. Rao), pp. 197. International Rice Research Institute, Los Banos.
- Schoener T.W. & Gorman G.C. (1968) Some niche differences in three lesser antillean lizards of the genus *Anolis*. *Ecology*, **49**, 819–830.
- Scholz A., Rabaey D., Stein A., Cochard H., Smets E., & Jansen S. (2013) The evolution and function of vessel and pit characters with respect to cavitation resistance across 10 *Prunus* species. *Tree Physiology*, **33**, 684–694.
- Scholz I., Bückins M., Dolge L., Erlinghagen T., Weth A., Hischen F., Mayer J., Hoffmann S., Riederer M., Riedel M., & Baumgartner W. (2010) Slippery surfaces of pitcher plants: *Nepenthes* wax crystals minimize insect attachment via microscopic surface roughness. *The Journal of Experimental Biology*, **213**, 1115–25.
- Schreiber S.G., Hacke U.G., & Hamann A. (2015) Variation of xylem vessel diameters across a climate gradient: insight from a reciprocal transplant experiment with a widespread boreal tree. *Functional Ecology*, **29**, 1392–1401.
- Schulze W., Schulze E.D., Pate J.S., & Gillison A.N. (1997) The nitrogen supply from soils and insects during growth of the pitcher plants *Nepenthes mirabilis*, *Cephalotus follicularis* and *Darlingtonia californica*. *Oecologia*, **112**, 464–471.
- Schupp E., Milleron T., & Russo S. (2002) *Dissemination limitation and the origin and maintenance of species-rich tropical forests. In seed dispersal and frugivory: Ecology, evolution and conservation*. CABI Publishing, Wallingford.
- Schwallier R., Raes N., de Boer H., Vos R., van Vugt R., & Gravendeel B. (2016) Phylogenetic analysis of niche divergence reveals distinct evolutionary histories and climate implications for tropical carnivorous plants. *Diversity and Distributions*, **22**, 97–110.
- Schwery O., Onstein R.E., Bouchenak-Khelladi Y., Xing Y., Carter R.J., & Linder H.P. (2015) As old as the mountains: the radiations of the Ericaceae. *New Phytologist*, **207**, 355–367.
- Scriven S.A., Hodgson J.A., McClean C.J., & Hill J.K. (2015) Protected areas in Borneo may fail to conserve tropical forest biodiversity under climate change. *Biological Conservation*, **184**, 414–423.
- Shaw R.G. & Etterson J.R. (2012) Rapid climate change and the rate of adaptation: insight from experimental quantitative genetics. *New Phytologist*, **195**, 752–765.

- Silvertown J., Dodd M., Gowing D., Lawson C., & McConway K. (2006) Phylogeny and the hierarchical organization of plant diversity. *Ecology*, **87**, 39–49.
- Smets E.F. & Cresens E.M. (1988) Types of floral nectaries and the concepts character and character state - a reconsideration. *Acta Botanica Neerlandica*, **37**, 121–128.
- Soberón J. & Nakamura M. (2009) Niches and distributional areas: concepts, methods, and assumptions. *PNAS*, **106**, 19644–19650.
- Soberón J. & Peterson A.T. (2005) Interpretation of models of fundamental ecological niches and species' distributional areas. *Biodiversity Informatics*, **2**, 1–10.
- Sodhi N.S., Posa M.R.C., Lee T.M., Bickford D., Koh L.P., & Brook B.W. (2010) The state and conservation of Southeast Asian biodiversity. *Biodiversity and Conservation*, **19**, 317–328.
- Solereider H. (1908) *Systematic anatomy of the dicotyledons: a handbook for laboratories of pure and applied botany*. Clarendon Press, Oxford.
- Soltis D.E., Smith S.A., Cellinese N., Wurdack K.J., Tank D.C., Brockington S.F., Refulio-Rodriguez N.F., Walker J.B., Moore M.J., Carlswald B.S., Bell C.D., Latvis M., Crawley S., Black C., Diouf D., Xi Z., Rushworth C.A., Gitzendanner M.A., Sytsma K.J., Qiu Y.L., Hilu K.W., Davis C.C., Sanderson M.J., Beaman R.S., Olmstead R.G., Judd W.S., Donoghue M.J., & Soltis P.S. (2011) Angiosperm phylogeny: 17 genes, 640 taxa. *American Journal of Botany*, **98**, 704–730.
- La Sorte F.A. & Jetz W. (2010) Projected range contractions of montane biodiversity under global warming. *Proceedings. Biological Sciences/The Royal Society*, **277**, 3401–10.
- Stamatakis A., Hoover P., & Rougemont J. (2008) A rapid bootstrap algorithm for the RAxML Web servers. *Systematic Biology*, **57**, 758–771.
- van Steenis C. (1964) Plant geography of the mountain flora of Mt. Kinabalu. *Proceedings of the Royal Society London*, **161**, 7–38.
- Sumsakul W., Plengsuriyakarn T., Chaijaroenkul W., Viyanant V., Karbwang J., & Na-Bangchang K. (2014) Antimalarial activity of plumbagin in vitro and in animal models. *BMC Complementary and Alternative Medicine*, **14**, 15.
- Swenson N. & Enquist B. (2007) Ecological and evolutionary determinants of a key plant functional trait: wood density and its community-wide variation across latitude and elevation. *American Journal of Botany*, **94**, 451–459.
- Takyu M., Aiba S., & Kitayama K. (2003) Changes in biomass, productivity and decomposition along topographical gradients under different geological conditions in tropical lower montane forests on Mount Kinabalu, Borneo. *Oecologia*, **134**, 397–404.
- 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**, 2731–9.
- The HadGEM2 Development Team, Martin G.M., Bellouin N., Collins W.J., Culverwell I.D., Halloran P.R., Hardiman S.C., Hinton T.J., Jones C.D., McDonald R.E., McLaren A.J., O'Connor F.M., Roberts M.J., Rodriguez J.M., Woodward S., Best M.J., Brooks M.E., Brown A.R., Butchart N., Dearden C., Derbyshire S.H., Dharssi I., Doutriaux-Boucher M., Edwards J.M., Falloon P.D., Gedney N., Gray L.J., Hewitt H.T., Hobson M., Huddleston M.R., Hughes J., Ineson S., Ingram W.J., James P.M., Johns T.C., Johnson C.E., Jones A., Jones C.P., Joshi M.M., Keen A.B., Liddicoat S., Lock A.P., Maidens A. V., Manners J.C., Milton S.F., Rae J.G.L., Ridley J.K., Sellar A., Senior C.A., Totterdell I.J., Verhoef A., Vidale P.L., & Wiltshire A. (2011) The HadGEM2 family of Met Office Unified Model climate configurations. *Geoscientific Model Development*, **4**, 723–757.
- Thomas E., Vandebroek I., & van Damme P. (2007) What works in the field? A comparison of different interviewing methods in ethnobotany with special reference to use of photographs. *Economic Botany*, **61**, 376–384.
- Thornhill A.H., Harper I.S., & Hallam N.D. (2008) The Development of the digestive glands and enzymes in the pitchers of three *Nepenthes* Species: *N. alata*, *N. tobaica*, and *N. ventricosa* (Nepenthaceae). *International Journal of Plant Sciences*, **169**, 615–624.
- Tökés Z.A., Woon W.C., & Chambers S.M. (1974) Digestive enzymes secreted by the carnivorous plant *Nepenthes macfarlanei* L. *Planta*, **119**, 39–46.
- Ulrike Bauer B.D.G. (2012) With a flick of the lid: a novel trapping mechanism in *Nepenthes gracilis* pitcher plants. *PloS ONE*, **7**, e38951.
- United Nations. (2008) United Nations Declaration on the Rights of Indigenous Peoples.
- United Nations. World Population Prospects: 2000 Revision Population Database. <http://esa.un.org/unpd/wpp/index.htm>. Accessed Jan 10 2015.
- United States Environmental Agency. (2013) Reducing wasted food & packaging, a guide for food services and packaging.
- de Vienne D.M., Giraud T., & Martin O.C. (2007) A congruence index for testing topological similarity between trees. *Bioinformatics*, **23**, 3119–3124.
- Vijverberg K., Kuperus P., Breeuwer J.A.J., & Bachmann K. (2000) Incipient adaptive radiation of New Zealand and Australian *Microseris* (Asteraceae): an amplified fragment length polymorphism (AFLP) study. *Journal of Evolutionary Biology*, **13**, 997–1008.
- Viscosi V., Fortini P., Slice D.E., Loy A., & Blasi C. (2009) Geometric morphometric analyses of leaf variation in four oak species of the subgenus *Quercus* (Fagaceae). *Plant Biosystems*, **143**, 557–587.
- Vogel S., Renner S.S., Bhatti J.S., & Kotheekar V.S. (1990) *The role of scent glands in pollination: on the structure and function of osmophores*. Smithsonian Institution Libraries, Washington.

- Walpole M.J. & Leader-Williams N. (2002) Tourism and flagship species in conservation. *Biodiversity and Conservation*, **11**, 543–547.
- Warren B.H., Simberloff D., Ricklefs R.E., Aguilée R., Condamine F.L., Gravel D., Morlon H., Mouquet N., Rosindell J., Casquet J., Conti E., Cornuault J., Fernández-Palacios J.M., Hengl T., Norder S.J., Rijdsdijk K.F., Sanmartín I., Strasberg D., Triantis K.A., Valente L.M., Whittaker R.J., Gillespie R.G., Emerson B.C., & Thébaud C. (2015) Islands as model systems in ecology and evolution: prospects fifty years after MacArthur-Wilson. *Ecology Letters*, **18**, 200–217.
- Warren D.L., Glor R.E., & Turelli M. (2008) Environmental niche equivalency versus conservatism: quantitative approaches to niche evolution. *Evolution*, **62**, 2868–83.
- Watson D.M. (2002) A conceptual framework for studying species composition in fragments, islands and other patchy ecosystems. *Journal of Biogeography*, **29**, 823–834.
- van Welzen P.C., Ferry Silk J.W., & Alahuhta J. (2005) Plant distribution patterns and plate tectonics in Malesia. *Biologiska Skrifter*, **55**, 199–217.
- Van Welzen P.C., Parnell J.A., & Slik J.F. (2011) Wallace's Line and plant distributions: two or three phylogeographical areas and where to group Java? *Biological Journal of the Linnean Society*, **103**, 531–545.
- White T., Bruns T., Lee S., & Taylor J. (1990) Amplification and direct sequencing of fungal ribosomal RNA genes for phylogenetics. *PCR protocols: a guide to methods and applications* (ed. by A. Innes, D. Gelfand, J. Sninsky, and T. White), pp. 315–324. Academic Press, New York.
- Whitehead J. (1893) *Exploration of Mount Binabalu, North Borneo*. Gurney & Jackson, London.
- Wiat C. (2006) *Medicinal plants of the Asia-Pacific: Drugs for the future*. World Scientific Publishing Co. Pte. Ltd., Singapore.
- Williams J.W., Jackson S.T., & Kutzbach J.E. (2007) Projected distributions of novel and disappearing climates by 2100 AD. *PNAS*, **104**, 5738–42.
- Wisz M.S., Hijmans R.J., Li J., Peterson A.T., Graham C.H., & Guisan A. (2008) Effects of sample size on the performance of species distribution models. *Diversity and Distributions*, **14**, 763–773.
- Wold S., Esbensen K., & Geladi P. (1987) Principal Component Analysis. *Chemometrics and Intelligent Laboratory Systems*, **2**, 37–52.
- Wong K. (1996) *Kinabalu, Summit of Borneo*. Sabah Society & Sabah Parks, Kota Kinabalu.
- Yesson, C. & Culham, A. (2006) Phyloclimatic modeling: combining phylogenetics and bioclimatic modeling. *Systematic Biology*, **55**, 785–802.
- Zachos J., Pagani M., Sloan L., Thomas E., & Billups K. (2001) Trends, rhythms, and aberrations in global climate 65 Ma to present. *Science*, **292**, 686–693.
- Zakaria W., Adibah W.N., Loke K.-K., Goh H.-H., & Mohd Noor N. (2016) RNA-seq analysis for plant carnivory gene discovery in *Nepenthes* x

REFERENCES

- ventrata. *Genomics Data*, **7**, 18–19.
- Zwickl D.J. & Hillis D.M. (2002) Increased taxon sampling greatly reduces phylogenetic error. *Systematic Biology*, **51**, 588–598.