



GeoBio-Center^{LMU}
Report 2018/2019

GeoBio-Center^{LMU} Report 2018/2019



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Welcoming note

Dear Ladies and Gentlemen, dear Colleagues,

with great pleasure we present the GeoBio-Center biannual report for the years 2018 and 2019. These two years continued to be highly productive and successful for the members of the GeoBio-Center and I would like to congratulate all members of the GeoBio-Center for their excellent achievements in the last two years.

However, sadly and unexpectedly, our GeoBio-Center board member Prof. Dr. Jochen Heinrich passed away in 2018. We all will honour and remember his achievements and efforts for the GeoBio-Center and beyond.

We are pleased to welcome Prof. Dr. Marc Gottschling as new GeoBio-Center board member.

In 2018 and 2019, the GeoBio-Center hosted in the Paleontological Museum several exciting international meetings, among which the Annual Meeting of the German Paleontological Society (Paläontologische Gesellschaft) in 2019. Also, the GeoBio-Center contributed with several activities to the International Year of the Reefs in 2019, including a special exhibition “*Coral Reefs - Endangered Oases of the Oceans*” and organization and hosting of the 5th Young Reef Scientists Meeting in the Paleontological Museum. I would like to thank wholeheartedly everyone who contributed to the success of these outstanding meetings.

I am very excited to announce that again the GeoBio-Center will be the host institution of a DFG Emmy Noether junior research group. The research group “*Statistical Methods in Phylogenetics and Macroevolution*” will be led by Dr. Sebastian Höhna and work on a wide range of statistical methods, ranging from evolutionary biology, population genetics and phylogenetics to paleo-phylogenetics. More information on this group can be found on the coming pages in this report. Welcome to the GeoBio-Center, Dr. Höhna, and lots of success with your research!

I would like to congratulate all members of the GeoBio-Center for their excellent achievements in the last two years!

With the very best regards,

Prof. Dr. Gert Wörheide
Spokesman of the GeoBio-Center^{LMU}



*Prof. Dr. Gert Wörheide
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GeoBio-Center^{LMU}*

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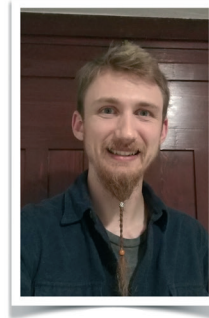
DFG Emmy-Noether Group "Statistical Methods in Phylogenetics and Macroevolution"



Luiza Fabreti
Doctoral candidate



Ronja Billenstein
Doctoral candidate



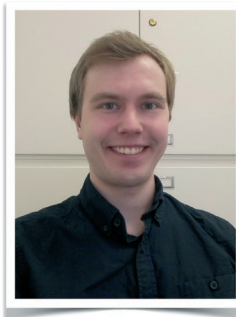
Killian Smith
Doctoral candidate



Dr. Allison Hsiang
Postdoctoral researcher
(now at Stockholm University)



Dr. Ana Catalán
Postdoctoral researcher



Bjørn Kopperud
Doctoral Candidate



Dr. Sebastian Höhna
Group leader

Our research group works on a wide range of statistical methods, ranging from evolutionary biology, population genetics and phylogenetics to paleo-phylogenetics. The group is primarily funded by a DFG Emmy Noether Project and a second DFG research grant. Our main goal is to develop statistical methods to study the biological process that produced current-day biodiversity. Therefore, we are taking a phylogenetic approach to describe the relationship among species (both extant and extinct) with a specific focus on the divergence time between species. Finally, we want to study what processes drive historical biodiversity and are responsible for the fluctuations, e.g., major increases and decreases, of biodiversity over geological timescales. Each project and the role of the group members is described below.

*Members of Sebastian
Höhna's research group*

Inference of Microevolutionary Processes

In the DFG funded project within the SPP 1991 Taxon-OMICS, our aim is to develop and test different demographic and species delimitation models. Currently, we focus this line of research on two wide-spread European firefly species (*Lampyrus noctiluca* and *Lamprohiza splendidula*) as well as one North American (*Photinus pyralis*). Additional to the fascinating ability to produce light, these three species of fireflies are excel-

lent model organisms to study recent local adaptation. Each species has a widespread geographical range which it must have acquired recently (after the last ice age). Furthermore, the females are neotenic in the two European species, which means that only males can fly. Nevertheless, *Lampyris noctiluca* managed to establish populations spanning from the Iberian Peninsula to the United Kingdom and Finland. We will try to learn when these populations were established if these populations are still connected to other populations.

Using the fireflies as a model system, we want to study if the currently known species are indeed only one species each, or if the sub-populations are rather distinguished species. Furthermore, we will explore how much gene-flow exists between the populations. This will be particularly interesting because of the different ability to move between males and females, and provides a reference about how much gene-flow is realistic for our deep-time study. Thus, this microevolution study serves as focused inspection of the underlying population genetic process, i.e.,

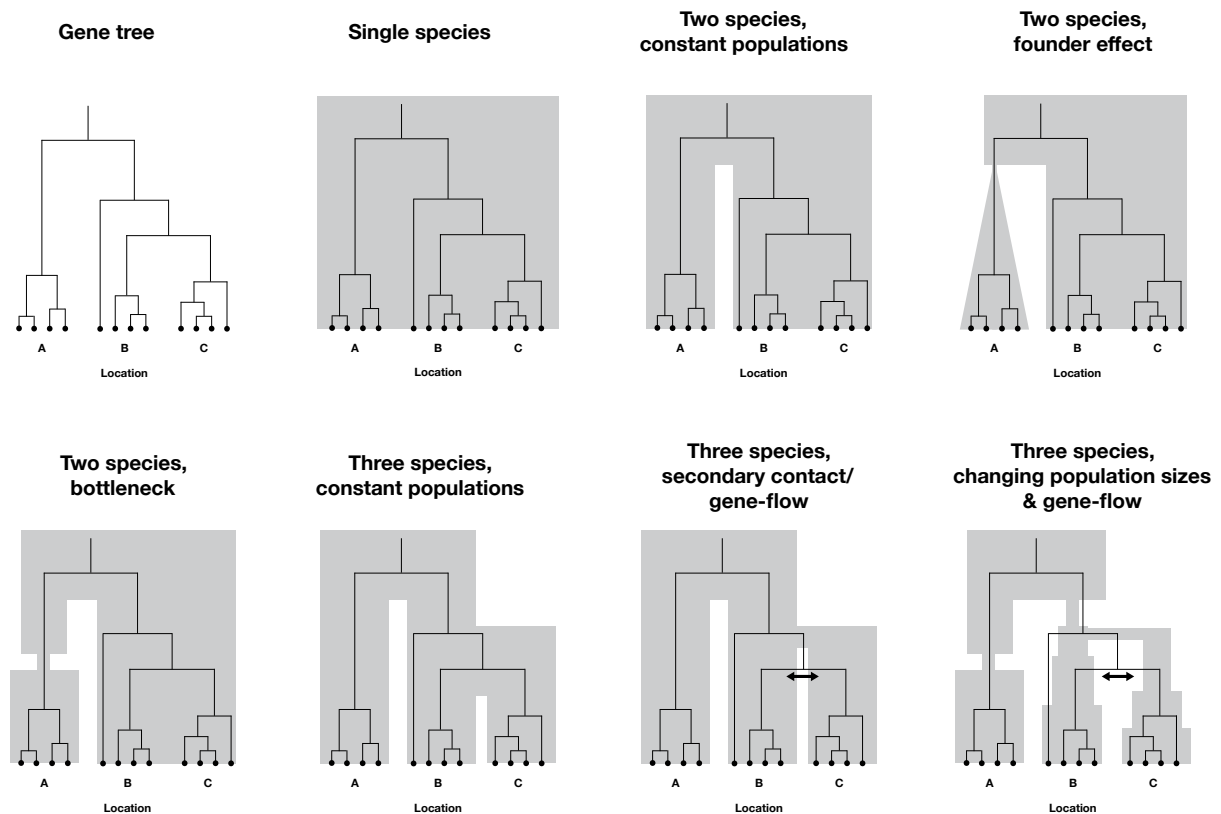


Figure 1: Schematic overview of demographic hypotheses for samples from three locations. The top left plot shows the genealogy (i.e., coalescent tree) of the samples from three different hypothetical locations, four samples from each location. The gray boxes represent the species/population history with changing population sizes. The second plot in the top row represent a hypothesis with a single species, whereas the two right plots in the top row are hypotheses with two species. In the bottom row we have one hypothesis with two species (left) and three hypotheses with three species. Some of these hypotheses, for example, the bottom right plot, show changes in population sizes.

under a magnifying glass, which we wish to extrapolate to macroevolutionary processes in deep time.

This project is led by Dr. Ana Catalán together with doctoral candidate Ronja Billenstein.

Robust Estimation of Gene Trees

As mentioned above, gene trees depict the genealogical relationship among samples for a single gene/locus. Our work heavily relies on gene trees to infer demographic histories, species trees and causes of gene tree species tree discordance (see below). Thus, we rely on reliable and robust estimates of gene trees for our other projects. In this work we are focused on how to reliably estimate gene trees by developing more robust statistical methods.

Currently, we found that single gene tree estimates cannot even recover well known and established clades, and show discordances that could

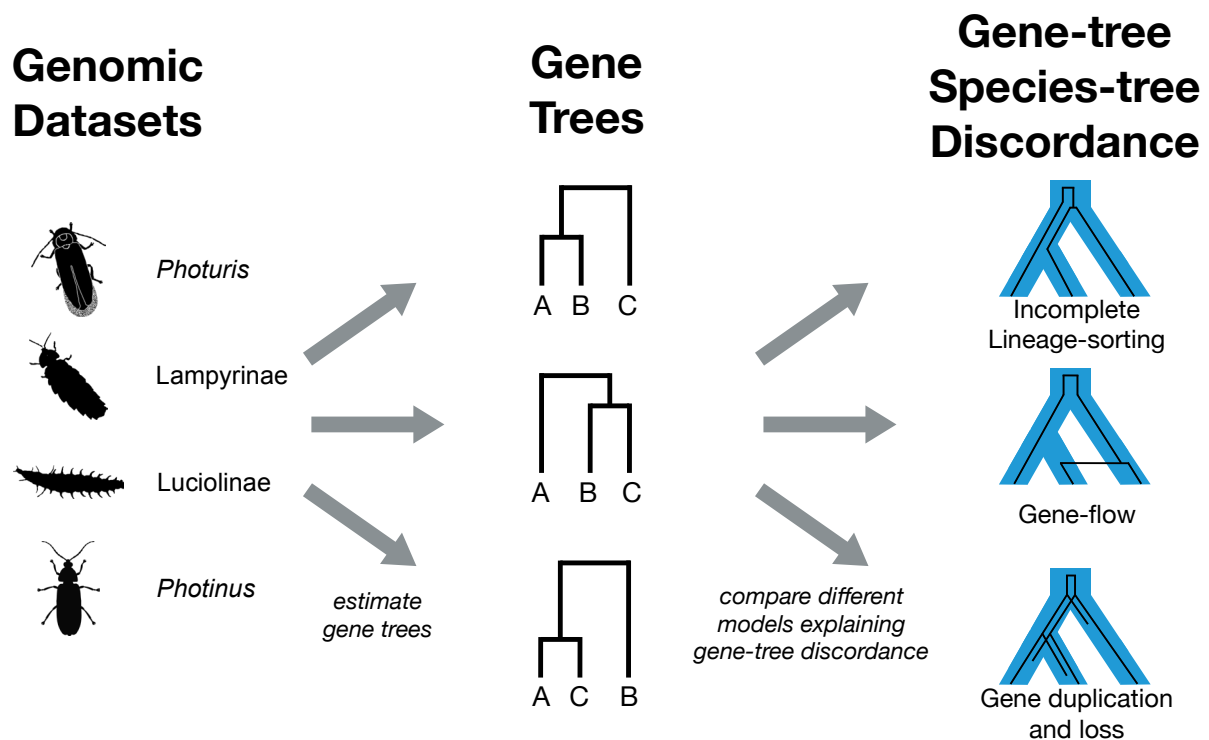


Figure 2: Schematic overview of the main biological processes resulting in discordance between gene trees and species trees. On the left, we have four example species of fireflies for which either genome sequence data are publicly available (*Photinus pyralis*) or for which we are producing new reference genomes. From the genomes, we extract thousands of orthologous loci (e.g., genes and non-coding regions) from which we estimate so-called gene trees. Using these gene tree estimates, we can (i) estimate the species phylogeny and also (ii) identify if the gene tree and species tree match. If not, we can test if (a) incomplete lineage sorting, (b) gene flow, or (c) gene duplication and loss are responsible for the discordance.

only be explained either by (a) extremely high rates of gene duplication and loss, or (b) gene-flow among species that are evolutionary separated since more than 100 million years. Both explanations are clearly unrealistic. Instead, these results show that we cannot yet estimate gene tree in deep time robustly. Our approach is to develop more biologically realistic and thus more complex models how DNA changes over millions of years.

This project is led by doctoral candidates Luiza Fabreti and Killian Smith.

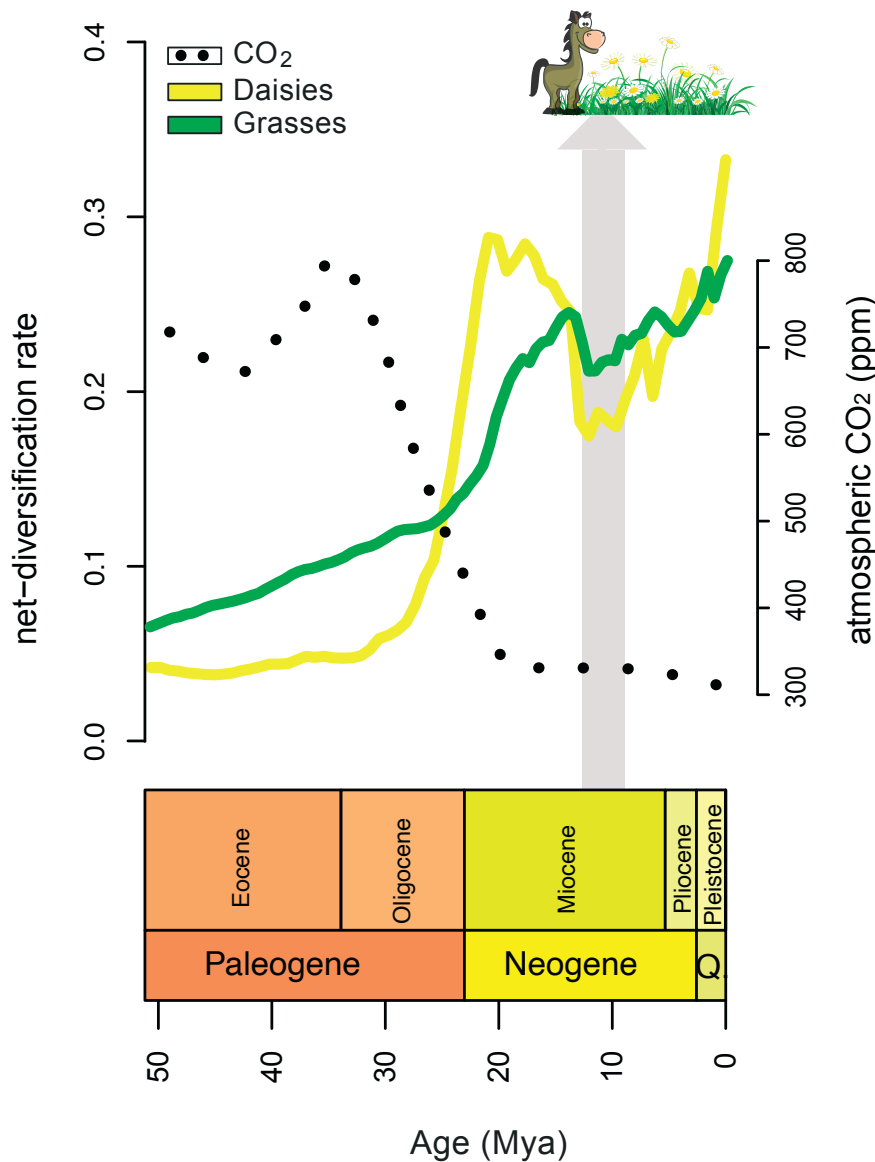


Figure 3: Example of diversification rates (i.e., speciation and extinction rates) in daisies and grasses which are negatively correlation with environmental CO₂ levels.

Understanding Discordance Between Species Trees and Gene Trees

It is widely acknowledged that gene trees can differ from species trees. The following biological scenarios can cause incongruent gene trees: (a) simple population genetic processes (i.e., the coalescent), (b) migration and thus gene-flow between species/populations, and (c) gene-duplication and gene-loss. However, it is not understood how much each of these processes actually contributes to the observed variation in gene trees. For example, we know only very little about long-time rates of gene duplication and losses and we do not know how diverged species can be while still exchanging genes.

We are working currently working on new statistical methods that can, for the first time, test for these three competing biological causes to explain gene tree variation.

This project was led by Allison Hsiang.

Inference of Macroevolutionary Processes

Our ultimate goal is to infer the process that is responsible for the observed patterns of historical biodiversity. Specifically, we are interest in learning if environmental variables, such as historical temperature or CO₂ levels, and species-specific variables, such as habitat, diet and body size, are influencing biodiversity. Additionally, we are interested how major events, such as massive extinctions, have impacted the biodiversity of different groups and if there are species-specific factors that influenced survival probabilities.

We use stochastic processes of speciation and extinction to model how biodiversity has changed over geological time. We develop new statistical models where the speciation and extinction rates change over time and among lineages and identify correlations to genetic, phenotypic and/or environmental factors that impact speciation and extinction rates. For example, we developed a statistical method to identify correlations between rates of diversification and environmental variables, such as changes in atmospheric CO₂. In our future work, we want to incorporate fossil occurrence information in our models of lineage diversification.

This project is led by doctoral candidates Bjørn Kopperud.

Publications 2018 & 2019

ISI-Indexed Journals

- Anton RF, Schories D, Wilson NG, Wolf M, Abad M, Schrödl M (2018) Host specificity versus plasticity: testing the morphology-based taxonomy of the endoparasitic copepod family Splanchnotrophidae with COI barcoding. *J Mar Biol Assoc U K* 98:231–243.
- Arabi Z, Ghahremaninejad F, Rabeler RK, Sokolova I, Heubl G, Zarre S (2018) On the taxonomic status of the genus *Dichodon* (Caryophyllaceae: tribe Alsineae): morphological and molecular evidence reassessed. *Phytotaxa* 360:220–236.
- Atwood EC, Falcieri FM, Piehl S, Bochow M, Matthies M, Franke J, Carniel S, Sclavo M, Laforsch C, Siegert F (2019) Coastal accumulation of microplastic particles emitted from the Po River, Northern Italy: Comparing remote sensing and hydrodynamic modelling with in situ sample collections. *Mar Pollut Bull* 138:561–574.
- Audo D, Robin N, Luque J, Krobicki M, Haug JT, Haug C, Jauvion C, Charbonnier S (2019) Palaeoecology of *Voulteryon parvulus* (Eucrustacea, Polychelida) from the Middle Jurassic of La Voulte-sur-Rhône Fossil-Lagerstätte (France). *Sci Rep* 9:5332.
- Baranov V, Hoffeins C, Hoffeins H-W, Haug JT (2019a) More than dead males: reconstructing the ontogenetic series of terrestrial non-biting midges from the Eocene amber forest. *Bull Geosci* 94:187–199.
- Baranov V, Hoffeins C, Hoffeins H-W, Haug JT (2019b) Reaching across the ocean of time: A midge morphotype from the Cretaceous of Gondwana found in the Eocene Baltic amber. *Palaeontol Electronica* 22:38A.
- Baranov VA, Schädel M, Haug JT (2019c) Fly palaeo-evodevo: immature stages of bibionomorph dipterans in Baltic and Bitterfeld amber. *PeerJ* 7:e7843.
- Becerra MG, Pol D, Rössner GE, Rauhut OWM (2018) Heterodonty and double occlusion in *Manidens condorensis*: a unique adaptation in an Early Jurassic ornithischian improving masticatory efficiency. *Sci Nat* 105:41.
- Beck A, Bechteler J, Casanova-Katny A, Dzhilyanova I (2019) The pioneer lichen *Placopsis* in maritime Antarctica: Genetic diversity of their mycobionts and green algal symbionts, and their correlation with deglaciation time. *Symbiosis* 79:1–24.
- Beyrand V, Voeten DFAE, Bures S, Fernandez V, Janacek J, Jirak D, Rauhut O, Tafforeau P (2019) Multiphase progenetic development shaped the brain of flying archosaurs. *Sci Rep* 9:10807. d
- Böhmer C, Amson E, Arnold P, van Heteren AH, Nyakatura JA (2018) Homeotic transformations reflect departure from the mammalian 'rule of seven' cervical vertebrae in sloths: inferences on the Hox code and morphological modularity of the mammalian neck. *BMC Evol Biol* 18:84.
- Böhmer C, Rössner GE (2018) Dental paleopathology in fossil rhinoceroses: etiology and implications. *J Zool* 304:3–12.
- Bronzati M, Rauhut OWM (2018) Braincase redescription of *Efraasia minor* Huene, 1908 (Dinosauria: Sauropodomorpha) from the Late Triassic of Germany, with comments on the evolution of the sauropodomorph braincase. *Zool J Linn Soc* 182:173–224.
- Brosse M, Bucher H, Baud A, Frisk AM, Goudemand N, Hagdorn H, Nützel A, Ware D, Hautmann M (2019) New data from Oman indicate benthic high biomass productivity coupled with low taxonomic diversity in the aftermath of the Permian-Triassic Boundary mass extinction. *Lethaia* 52:165–187.
- Calasan AZ, Kretschmann J, Gottschling M (2019) They are young, and they are many: dating freshwater lineages in unicellular dinophytes. *Environ Microbiol* 21:4125–4135.
- Calasan AZ, Kretschmann J, Filipowicz NH, Irimia R-E, Kirsch M, Gottschling M (2019) Towards global distribution maps of unicellular organisms such as calcareous dinophytes based on DNA sequence information. *Mar Biodivers* 49:749–758.
- Calasan AZ, Kretschmann J, Gottschling M (2018) Absence of co-phylogeny indicates repeated diatom capture in dinophytes hosting a tertiary endosymbiont. *Org Divers Evol* 18:29–38.
- Carla J Harper, Jean Galtier, Thomas N Taylor, Edith L Taylor, Ronny Rößler, Michael Krings (2019) Distribution of fungi in a Triassic fern stem. *Earth Environ Sci Trans R Soc Edinb* 108:387–398.
- Casella LA, He S, Griesshaber E, Fernandez-Diaz L, Greiner M, Harper EM, Jackson DJ, Ziegler A, Mavromatis V, Dietzel M, Eisenhauer A, Veintemillas-Verdaguer S, Brand U, Schmahl WW (2018) Hydrothermal alteration of aragonitic biocarbonates: assessment of micro- and nanostructural dissolution-reprecipitation and constraints of diagenetic overprint from quantitative statistical grain-area analysis. *Biogeosciences* 15:7451–7484.
- Castanera D, Belvedere M, Marty D, Paratte G, Lapaire-Cattin M, Lovis C, Meyer CA (2018) A walk in the maze: variation in Late Jurassic tridactyl dinosaur tracks from the Swiss Jura Mountains (NW Switzerland). *PeerJ* 6:e4579.
- Castanera D, Pascual C, Ignacio Canudo J, Luis Barco J (2018) Bringing Together Research, Geoconservation and Reaching a Broad Public in the Form of a Geotourism Project: the Ichnite Route of Soria (Spain). *Geoheritage* 10:393–403.
- Castellani C, Maas A, Eriksson ME, Haug JT, Haug C, Waloszek D (2018) First record of cyanobacteria in

- Cambrian Orsten deposits of Sweden. *Palaeontology* 61:855–880.
- Catalan A, Briscoe AD, Höhna S (2019) Drift and directional selection are the evolutionary forces driving gene expression divergence in eye and brain tissue of *Heliconius* butterflies. *Genetics* 213:581–594.
- Chaban EM, Ekimova IA, Schepetov DM, Kohnert PC, Schrödl M, Chernyshev A V (2019) Euopisthobranch mollusks of the order Cephalaspidea (Gastropoda: Heterobranchia) of the Kuril-Kamchatka Trench and the adjacent Pacific abyssal plain with descriptions of three new species of the genus *Spiraphiline* (Philiniidae). *Prog Oceanogr* 178:102185.
- Conci N, Wörheide G, Vargas S (2019) New non-bilateral transcriptomes provide novel insights into the evolution of coral skeletones. *Genome Biol Evol* 11:3068–3081.
- Condamine FL, Rolland J, Höhna S, Sperling FAH, Sanmartín I (2018) Testing the role of the red queen and court jester as drivers of the macroevolution of Apollo butterflies. *Syst Biol* 67:940–964.
- Coskun ÖK, Pichler M, Vargas S, Gilder S, Orsi WD (2018) Linking uncultivated microbial populations and benthic carbon turnover by using quantitative stable isotope probing. *Appl Environ Microbiol* 84:e01083–18.
- Coskun ÖK, Özen V, Wankel SD, Orsi WD (2019) Quantifying population-specific growth in benthic bacterial communities under low oxygen using (H₂O)-O-18. *ISME J* 13:1546–1559.
- Dietz L, Dömel JS, Leese F, Lehmann T, Melzer RR (2018) Feeding ecology in sea spiders (Arthropoda: Pycnogonida): what do we know? *Front Zool* 15:7.
- Dimon RJ, Vana J, Schäfer-Verwimp A, Heinrichs J, Renner MAM (2018) *Conoscyphus* belongs to Acrobolbaceae (Jungermannineae) not Lophocoleaceae (Lophocoleineae). *Aust Syst Bot* 31:209–218.
- Dömel JS, Macher T-H, Dietz L, Duncan S, Mayer C, Rozenberg A, Wolcott K, Leese F, Melzer RR (2019) Combining morphological and genomic evidence to resolve species diversity and study speciation processes of the *Pallenopsis patagonica* (Pycnogonida) species complex. *Front Zool* 16:36.
- Drainas K, Carlson CH, Jörgen KM, Schrödl M, Neusser TP (2018) The first helicoid sea slug: 3D microanatomy of *Helicohedyle dikiki* n. gen., n. sp (Panpulmonata: Acochlidiida) from Guam. *J Molluscan Stud* 84:1–11.
- Dreyer N, Yusa Y, Gale A, Melzer RR, Yamato S, Hoeg JT (2018) In the footsteps of Darwin: dwarf male attachment sites in scalpellid barnacles (Crustacea: Cirripedia: Thoracica) - implications for phylogeny and the evolution of sexual systems. *Zool J Linn Soc* 184:999–1023.
- Eitel M, Francis WR, Varoqueaux F, Daraspe J, Osigus H-J, Krebs S, Vargas S, Blum H, Williams GA, Schirwater B, Wörheide G (2018) Comparative genomics and the nature of placozoan species. *PLoS Biol* 16:e2005359.
- Ekins M, Debitus C, Erpenbeck D, Hooper JNA (2018) A new species of the sponge *Raspailia* (*Raspaxilla*) (Porifera: Demospongiae: Axinellida: Raspailiidae) from deep seamounts of the Western Pacific. *Zootaxa* 4410:379–386.
- Elbrächter M, Gottschling M, Hoppenrath M, Jahn R, Montresor M, Tillmann U, Kusber W-H (2019) Proposal to conserve the name *Alexandrium* against *Blepharocysta* (Dinophyceae). *Taxon* 68:589–590.
- Ereskovsky A, Kovtun OA, Pronin KK, Apostolov A, Erpenbeck D, Ivanenko V (2018) Sponge community of the western Black Sea shallow water caves: diversity and spatial distribution. *PeerJ* 6:e4596.
- Erpenbeck D, Steiner M, Schuster A, Genner MJ, Mancini R, Pronzato R, Ruthensteiner B, van den Spiegel D, van Soest RWM, Wörheide G (2019) Minimalist barcodes for sponges: a case study classifying African freshwater Spongillida. *Genome* 62:1–10.
- Ewin TAM, Reich M, Graham MR, Cournoyer ME (2019) *Perforocycloides nathalieae* new genus and species, an unusual Silurian cyclocystoid (Echinodermata) from Anticosti Island, Quebec, Canada. *PalZ* 93:625–635.
- Falkingham PL, Bates KT, Avanzini M, Bennett M, Bordy EM, Breithaupt BH, Castanera D, Cutton P, Diaz-Martinez I, Farlow JO, Fiorillo AR, Gatesy SM, Getty P, Hatala KG, Hornung JJ, Hyatt JA, Klein H, Lallensack JN, Martin AJ, Marty D, Matthews NA, Meyer CA, Milan J, Minter NJ, Razzolini NL, Romilio A, Salisbury SW, Sciscio L, Tanaka I, Wiseman ALA, Xing LD, Belvedere M (2018) A standard protocol for documenting modern and fossil ichnological data. *Palaeontology* 61:469–480.
- Fichtner V, Strauss H, Mavromatis V, Dietzel M, Huthweller T, Borca CN, Guagliardo P, Kilburn MR, Göttlicher J, Pederson CL, Griesshaber E, Schmahl WW, Immenhauser A (2018) Incorporation and subsequent diagenetic alteration of sulfur in Arctica islandica. *Chem Geol* 482:72–90.
- Flammensbeck CK, Haszprunar G, Korshunova T, Martynov AV, Neusser TP, Jörgen KM (2019) *Pseudovermis paradoxus* 2.03D microanatomy and ultrastructure of a vermiform, meiofaunal nudibranch (Gastropoda, Heterobranchia). *Org Divers Evol* 19:41–62.
- Fleischmann A (2018) *Drosera xerophila* (Droseraceae), a new species from Overberg District, South Africa, and an overview of the rosetted hemicryptophyte sundew species from Western Cape Province. *Willdenowia* 48:93–107.
- Forte G, Kustatscher E, Roghi G, Preto N (2018) The Permian (Kungurian, Cisuralian) palaeoenvironment and palaeoclimate of the Tregiovo Basin, Italy: Palaeobotanical, palynological and geochemical investigations. *Palaeogeogr Palaeoclimatol Palaeoecol* 495:186–204.

- Freyman WA, Höhna S (2018) Cladogenetic and anagenetic models of chromosome number evolution: a Bayesian Model averaging approach. *Syst Biol* 67:195–215.
- Freyman WA, Höhna S (2019) Stochastic character mapping of state-dependent diversification reveals the tempo of evolutionary decline in self-compatible Onagraceae lineages. *Syst Biol* 68:505–519.
- Friesenbichler E, Hautmann M, Nützel A, Urlichs M, Bucher H (2019) Palaeoecology of Late Ladinian (Middle Triassic) benthic faunas from the Schlern/Sciliar and Seiser Alm/Alpe di Siusi area (South Tyrol, Italy). *PalZ* 93:1–29.
- Galitz A, Cook S de C, Ekins M, Hooper JNA, Naumann PT, de Voogd NJ, Abdul Wahab MA, Wörheide G, Erpenbeck D (2018) Identification of an aquaculture poriferan “Pest with Potential” and its phylogenetic implications. *PeerJ* 6:e5586.
- Gerasimova J V, Ezhkin AK, Beck A (2018) Four new species of *Bacidia* s.s. (Ramalinaceae, Lecanorales) in the Russian Far East. *Lichenologist* 50:603–625.
- Gierl C, Liebl D, Sanda R, Vukic J, Esmaeili HR, Reichenbacher B (2018) What can goby otolith morphology tell us? *Cybium* 42:349–363.
- Göhring A, von Carnap-Bornheim C, Hilberg V, Mayr C, Grupe G (2019) Diet and species-specific oxygen isotope relationship and isotope spacing between structural carbonate and phosphate in archaeological mammalian bones. *Archaeol Anthropol Sci* 11:2467–2487.
- Gottschling M, Tillmann U, Elbrächter M, Kusber W-H, Hoppenrath M (2019) *Glenodinium triquetrum* Ehrenb. is a species not of *Heterocapsa* F.Stein but of *Kryptoperidinium* Er.Lindem. (Kryptoperidiniaceae, Peridinales). *Phytotaxa* 391:155–158.
- Gottschling M, Tillmann U, Kusber W-H, Elbrächter M, Hoppenrath M (2019) To be or not to be: On the usefulness of infraspecific names in *Heterocapsa steinii* (Heterocapsaceae, Peridinales). *Phytotaxa* 395:134–136.
- Gottschling M, Tillmann U, Kusber W-H, Hoppenrath M, Elbrächter M (2018a) (2607) Proposal to conserve the name *Heterocapsa* (Dinophyceae) with a conserved type. *Taxon* 67:632–633.
- Gottschling M, Tillmann U, Kusber W-H, Hoppenrath M, Elbrächter M (2018b) A Gordian knot: Nomenclature and taxonomy of *Heterocapsa triquetra* (Peridinales: Heterocapsaceae). *Taxon* 67:179–185.
- Gutekunst V, Müller AU, Pohl T, Brümmer F, Malik H, Fawzi N, Erpenbeck D, Lehnert H (2018) A new fistulose demosponge species from the Persian Gulf. *Zootaxa* 4450:565–574.
- Guzman JA, Rössner GE (2018) Skull morphometrics of *Tragulid* and *Moschiola* for an improved classification of tragulid collections. *Mamm Biol* 90:78–88.
- Haug C, Rötzer MAIN (2018a) The ontogeny of *Limulus polyphemus* (Xiphosura s. str., Euchelicerata) revised: looking “under the skin”. *Dev Genes Evol* 228:49–61.
- Haug C, Rötzer MAIN (2018b) The ontogeny of the 300 million year old xiphosuran *Euproops danae* (Euchelicerata) and implications for resolving the *Euproops* species complex. *Dev Genes Evol* 228:63–74.
- Haug C, Wagner P, Bjarsch JM, Braig F, Haug JT (2018) A new “extreme” type of mantis shrimp larva. *Nauplius* 26:1–13.
- Haug C, Wagner P, Haug JT (2019) The evolutionary history of body organisation in the lineage towards modern scorpions. *Bull Geosci* 94:389–408.
- Haug JT, Haug C (2019) Beetle larvae with unusually large terminal ends and a fossil that beats them all (Scraptiidae, Coleoptera). *PeerJ* 7:e7871.
- Haug JT, Haug C, Neumann C, Sombke A, Hörnig MK (2018) Early post-embryonic polyxenidan millipedes from Saxonian amber (Eocene). *Bull Geosci* 93:1–11.
- Haug JT, Müller P, Haug C (2018) The ride of the parasite: a 100-million-year old mantis lacewing larva captured while mounting its spider host. *Zoological Letters* 4:31.
- Haug JT, Müller P, Haug C (2019a) A 100-million-year old predator: a fossil neuropteran larva with unusually elongated mouthparts. *Zoological Letters* 5:29. 1
- Haug JT, Müller P, Haug C (2019b) A 100-million-year old slim insectan predator with massive venom-injecting stylets - a new type of neuropteran larva from Burmese amber. *Bull Geosci* 94:431–440.
- Hausmann IM, Domanski H, Zuschin M (2018) Influence of setting, sieve size, and sediment depth on multivariate and univariate assemblage attributes of coral reef-associated mollusc death assemblages from the Gulf of Aqaba. *Facies* 64:20.
- He K, Roud SC, Gilder SA, Egli R, Mayr C, Petersen N (2018) Seasonal variability of magnetotactic bacteria in a freshwater pond. *Geophys Res Lett* 45:2294–2302.
- Heinrichs J, Schäfer-Verwimp A, Renner MAM, Feldberg K (2018) *Cheilolejeunea lamyi* sp nov., a fossil Lejeuneaceae from Miocene Dominican amber. *Cryptogam Bryol* 39:155–161.
- Hörnig MK, Haug C, Schneider JW, Haug JT (2018) Evolution of reproductive strategies in dictyopteran insects-clues from ovipositor morphology of extinct roachoids. *Acta Palaeontol Pol* 63:1–24.
- Höhna S, Coghill LM, Mount GG, Thomson RC, Brown JM (2018) P3: Phylogenetic posterior prediction in RevBayes. *Mol Biol Evol* 35:1028–1034.
- Holstein N, Gottschling M (2018a) Flowers of *Halgania* (Ehretiaceae, Boraginales) are set up for being buzzed and the role of intertwining anther trichomes. *Flora* 240:7–15.
- Holstein N, Gottschling M (2018b) Waking sleeping beauties: a molecular phylogeny and nomenclator of

- Halgania* (Ehretiaceae, Boraginales). *Aust Syst Bot* 31:107–119.
- Holwerda FM, Diaz VD, Blanco A, Montie R, Reurner JWF (2018) Late Cretaceous sauropod tooth morphotypes may provide supporting evidence for faunal connections between North Africa and Southern Europe. *PeerJ* 6:e5925.
- Hoover CA, Padula V, Schrödl M, Hooker Y, Valdes A (2018) Integrative taxonomy of the *Felimare californiensis* and *F. ghiselini* species complex (Nudibranchia: Chromodorididae), with description of a new species from Peru (vol 83, pg 461, 2017). *J Molluscan Stud* 84:334.
- Hornung JJ, Reich M, Frerichs U (2018) A mosasaur fauna (Squamata: Mosasauridae) from the Campanian (Upper Cretaceous) of Hannover, northern Germany. *Alcheringa* 42:543–559.
- Kaasalainen U, Heinrichs J, Renner MAM, Hedenas L, Schäfer-Verwimp A, Lee GE, Ignatov MS, Rikkinen J, Schmidt AR (2018) A Caribbean epiphyte community preserved in Miocene Dominican amber. *Earth Environ Sci Trans R Soc Edinb* 107:321–331.
- Kiesmüller C, Hörnig MK, Leipner A, Haug C, Haug JT (2019) Palaeozoic palaeodictyopteran insect nymphs with prominent ovipositors from a new locality. *Bull Geosci* 94:23–40.
- Klinges JG, Rosales SM, McMinds R, Shaver EC, Shantz AA, Peters EC, Eitel M, Wörheide G, Sharp KH, Burkepille DE, Silliman BR, Thurber RLV (2019) Phylogenetic, genomic, and biogeographic characterization of a novel and ubiquitous marine invertebrate-associated Rickettsiales parasite, *Candidatus Aquarickettsia rohweri*, gen. nov., sp. nov. *ISME J* 13:2938–2953.
- Kose SH, Grice K, Orsi WD, Ballal M, Coolen MJL (2018) Metagenomics of pigmented and cholesterol gallstones: the putative role of bacteria. *Sci Rep* 8:11218.
- Kovalchuk V, Voronkina A, Binnewerg B, Schubert M, Muzychka L, Wysokowski M, Tsurkan MV, Bechmann N, Petrenko I, Fursov A, Martinovic R, Ivanenko VN, Fromont J, Smolii OB, Joseph Y, Giovine M, Erpenbeck D, Gelinsky M, Springer A, Guan K, Bornstein SR, Ehrlich H (2019) Naturally drug-loaded chitin: Isolation and applications. *Mar Drugs* 17:574.
- Kretschmann J, Calasan AZ, Gottschling M (2018) Molecular phylogenetics of dinophytes harboring diatoms as endosymbionts (Kryptoperidiniaceae, Peridinales), with evolutionary interpretations and a focus on the identity of *Durinskia oculata* from Prague. *Mol Phylogenet Evol* 118:392–402.
- Kretschmann J, Calasan AZ, Kusber W-H, Gottschling M (2018) Still curling after all these years: *Glenodinium apiculatum* Ehrenb. (Peridinales, Dinophyceae) repeatedly found at its type locality in Berlin (Germany). *System Biodivers* 16:200–209.
- Kretschmann J, Owsiany PM, Calasan AZ, Gottschling M (2018) The Hot Spot in a Cold Environment: Puzzling Parvodinium (Peridiniopsidaceae, Peridinales) from the Polish Tatra Mountains. *Protist* 169:206–230.
- Kröner A, Nagel TJ, Hoffmann JE, Liu X, Wong J, Hegner E, Xie H, Kasper U, Hofmann A, Liu D (2018) High-temperature metamorphism and crustal melting at ca. 3.2 Ga in the eastern Kaapvaal craton, southern Africa. *Precambrian Res* 317:101–116.
- Kuhn V, Geisberger T, Huber C, Beck A, Eisenreich W (2019) A facile in vivo procedure to analyze metabolic pathways in intact lichens. *New Phytol* 224:1657–1667.
- Lam A, Toussaint EFA, Kindler C, Van Dam MH, Panjaitan R, Roderick GK, Balke M (2018) Stream flow alone does not predict population structure of diving beetles across complex tropical landscapes. *Mol Ecol* 27:3541–3554.
- Lam AW, Gueuning M, Kindler C, Van Dam M, Alvarez N, Panjaitan R, Shaverdo H, White LT, Roderick GK, Balke M (2018) Phylogeography and population genomics of a lotic water beetle across a complex tropical landscape. *Mol Ecol* 27:3346–3356.
- Laibl CF, Schrödl M, Kohnert PC (2019) 3D-microanatomy of a keystone planktonic species, the northern polar pteropod *Limacina helicina helicina* (Gastropoda: Heterobranchia). *J Molluscan Stud* 85:48–65.
- Lee GE, Bechteler J, Heinrichs J (2018) A revision of unrevised taxon names in the former genus *Taxilejeunea* (Marchantiophyta: Lejeuneaceae) from Asia. *Phytotaxa* 358:26–48.
- Lehmann T, Melzer RR (2018) Also looking like *Limulus*? - retinula axons and visual neuropils of *Amblypygi* (whip spiders). *Front Zool* 15:52.
- Lehmann T, Hess M, Melzer RR (2018) Sense organs in Pycnogonida: A review. *Acta Zool* 99:211–230.
- Lehnert H, Stones RP (2019) Two new species of Geodiidae (Porifera, Demospongiae, Astrophorina) from the Emperor Seamounts, North Pacific Ocean. *Zootaxa* 4671:381–395.
- Leuzinger L, Cavin L, Lopez-Arbarello A, Billon-Bruyat J-P (2019) A unique dental renewal mode in the extinct *Scheenstia* (Actinopterygii, Lepisosteiformes). *J Morphol* 280:S165.
- Liston JJ, Maltese AE, Lambers PH, Delsate D, Harcourt-Smith WEH, van Heteren AH (2019) Scythes, sickles and other blades: defining the diversity of pectoral fin morphotypes in Pachycormiformes. *PeerJ* 7:e7675.
- Lohberger S, Stängel M, Atwood EC, Siegert F (2018) Spatial evaluation of Indonesia's 2015 fire-affected area and estimated carbon emissions using Sentinel-1. *Glob Chang Biol* 24:644–654.
- Lopez AI, Kretschmann J, Calasan AZ, Gottschling M (2018) The many faces of *Peridinium cinctum* (Peridiniaceae, Peridinales): morphological and molecular variability in a common dinophyte. *Eur J Phycol* 53:156–165.
- Lopez-Arbarello A, Sferco E (2018) Neopterygian phylogeny: the merger assay. *Royal Society Open Science* 5:172337.
- Lopez-Arbarello A, Bürgin T, Furrer H, Stockar R (2019) Taxonomy and phylogeny of *Eosemionotus* Stolley,

- 1920 (Neopterygii: Ginglymodi) from the Middle Triassic of Europe. *Palaeontol Electronica* 22:10A.
- Madhani H, Rabeler R, Pirani A, Oxelman B, Heubl G, Zarre S (2018) Untangling phylogenetic patterns and taxonomic confusion in tribe Caryophylleae (Caryophyllaceae) with special focus on generic boundaries. *Taxon* 67:83–112.
- Mandic O, Hajek-Tadesse V, Bakrač K, Reichenbacher B, Grizelj A, Miknić M (2019) Multiproxy reconstruction of the middle Miocene Požega palaeolake in the Southern Pannonian Basin (NE Croatia) prior to the Badenian transgression of the Central Paratethys Sea. *Palaeogeogr Palaeoclimatol Palaeoecol* 516:203–219.
- Mao Y, Webster GD, Ausich WI, Li Y, Wang Q, Reich M (2018) A new crinoid fauna from the Taiyuan Formation (early Permian) of Henan, North China. *J Paleontol* 92:1066–1080.
- Martin CH, Höhna S (2018) New evidence for the recent divergence of Devil's Hole pupfish and the plausibility of elevated mutation rates in endangered taxa. *Mol. Ecol.* 27:831–838.
- Maxwell EE, Lopez-Arbarello A (2018) A new species of the deep-bodied actinopterygian *Dapedium* from the Middle Jurassic (Aalenian) of southwestern Germany. *PeerJ* 6:e5033.
- Mayr C, Stojakowits P, Lempe B, Blaauw M, Diersche V, Grohganz M, Correa ML, Ohlendorf C, Reimer P, Zolitschka B (2019) High-resolution geochemical record of environmental changes during MIS 3 from the northern Alps (Nesseltalgraben, Germany). *Quat Sci Rev* 218:122–136.
- Mayr C, Smith RE, Lujan Garcia M, Massaferro J, Lücke A, Dubois N, Maidana N I, Meier WJ-H, Wissel H, Zolitschka B (2019) Historical eruptions of Lautaro Volcano and their impacts on lacustrine ecosystems in southern Argentina. *J Paleolimnol* 62:205–221.
- Mennecart B, de Perthuis A, Rössner GE, Guzman JA, de Perthuis A, Costeur L (2018) The first French tragulid skull (Mammalia, Ruminantia, Tragulidae) and associated tragulid remains from the Middle Miocene of Contres (Loir-et-Cher, France). *C R Palevol* 17:189–200.
- Mengual-Chulia B, Wibbelt G, Gottschling M, Bravo IG (2018) Two Novel, Distantly Related Papillomaviruses Isolated from Healthy Skin of the Timor Deer (*Rusa timorensis*). *Microbiology Resource Announcements* 6:e00505-18. d
- Michat MC, Balke M (2018) Evolution of the Juan Fernandez diving beetle, *Rhantus selkirki* (Coleoptera, Dytiscidae). *Zool Scr* 47:187–196.
- Michel M, Hardulak LA, Meier-Dörnberg T, Moriniere J, Hausmann A, Back W, Haszprunar G, Jacob F, Hutzler M (2019) High throughput sequencing as a novel quality control method for industrial yeast starter cultures. *Brewing Science* 72:63–68.
- Mielke M, Wölfer J, Arnold P, van Heteren AH, Amson E, Nyakatura JA (2018) Trabecular architecture in the sciuriform femoral head: allometry and functional adaptation. *Zoological Letters* 4:10.
- Mills DB, Francis WR, Vargas S, Larsen M, Elemans CPH, Canfield DE, Wörheide G (2018) The last common ancestor of animals lacked the HIF pathway and respired in low-oxygen environments. *Elife* 7:e31176.
- More KD, Orsi WD, Galy V, Giosan L, He L, Grice K, Coolen MJL (2018) A 43 kyr record of protist communities and their response to oxygen minimum zone variability in the Northeastern Arabian Sea. *Earth Planet Sci Lett* 496:248–256.
- Nose M, Schlagintweit F, Nützel A (2018) New record of Halimedacean algae from the Upper Triassic of the Southern Alps (Dolomites, Italy). *Rivista italiana di paleontologia e stratigrafia.* 124:421–431.
- Nützel A (2018) *Racheliella*, a new mathildoid gastropod genus (Gastropoda, lower Heterobranchia) from the Late Triassic St. Cassian Formation (N Italy). *Neues Jahrbuch für Geologie und Paläontologie - Abhandlungen* 287:207–211.
- Nützel A, Kaim A, Gradinaru E (2018) Middle Triassic (Anisian, Bithynian) gastropods from North Dobrogea (Romania) and their significance for gastropod recovery from the end-Permian mass extinction event. *Papers in Palaeontology.* 4:477–512.
- Olive S, Taverne L, Lopez-Arbarello A (2019) A new genus of coccolepidid actinopterygian from the Cretaceous Iguanodon-bearing locality of Bernissart, Belgium. *Cretaceous Res* 95:318–335.
- Orsi WD (2018) Ecology and evolution of seafloor and subseafloor microbial communities. *Nat Rev Microbiol* 16:671–683.
- Ortega-Arbulu A-S, Pichler M, Vuillemin A, Orsi WD (2019) Effects of organic matter and low oxygen on the mycobenthos in a coastal lagoon. *Environ Microbiol* 21:374–388.
- Penk SBR, Altner M, Cerwenka AF, Schliewen UK, Reichenbacher B (2019) New fossil cichlid from the middle Miocene of East Africa revealed as oldest known member of the Oreochromini. *Sci Rep* 9:10198.
- Perez-Ramos A, Kupczik K, Van Heteren AH, Rabeder G, Grandal-D'Anglade A, Pastor FJ, Serrano FJ, Figueirido B (2019) A three-dimensional analysis of tooth-root morphology in living bears and implications for feeding behaviour in the extinct cave bear. *Hist Biol* 31:461–473.
- Pett W, Adamski M, Adamska M, Francis WR, Eitel M, Pisani D, Wörheide G (2019) The role of homology and orthology in the phylogenomic analysis of meta-zoan gene content. *Mol Biol Evol* 36:643–649.
- Pichler M, Coskun ÖK, Ortega-Arbulu A-S, Conci N, Wörheide G, Vargas S, Orsi WD (2018) A 16S rRNA gene sequencing and analysis protocol for the Illumina MiniSeq platform. *Microbiologyopen* 7:e611. d
- Piehl S, Mitterwallner V, Atwood EC, Bochow M, Laforch C (2019) Abundance and distribution of large microplastics (1–5 mm) within beach sediments at

- the Po River Delta, northeast Italy. *Mar Pollut Bull* 149:110515.
- Prathapan KD, Pethiyagoda R, Bawa KS, Raven PH, Rajan PD, Acosta LE, Adams B, Adl S, Ah Yong ST, Anderson R, Arango CP, Arnedo MA, Armbruster JW, Javier Avila L, Azevedo CO, Baldo D, Barclay MVL, Baron-Szabo R, Bauer AM, Bentlage B, Bezdek A, Bird G, Blagoderov V, Bocak L, Bonaldo A, Bond JE, Borkent CJ, Branham MA, Carranza S, Carreno R, de Carvalho MR, Castroviejo-Fisher S, Chiba H, Ciampor F, Clarke DJ, Collins AG, Constantino R, Crespo FA, Daly M, Dominiak P, Dronen N, Dubois A, Duda TF Jr, Eleaume M, Erlacher S, Estrela PC, Evenhuis N, Fehlauer-Ale KH, Fery H, Fritz U, Gaimari SD, Garrison R, Gaubert P, Geiger DL, Gill AC, Gimmel ML, Goldschmidt T, Goswami R, Perez Gonzalez A, Gonzalez VH, Gordon D, Gower DJ, Greenslade P, Gusarov VI, Hajdu E, Harms D, Heinicke MP, Hilton EJ, Hodgson CJ, Hormiga G, Hughes LE, Hutchings P, Jäger P, Jennings JT, Kadej M, Kaila L, Kaminiski MJ, Karaman GS, Karanovic T, Kathirithamby J, Kerr PH, Kirkendall LR, Kitahara MV, Klautau M, Kondratieff BC, Kroh A, Labarque FM, Leavengood JM Jr, Letardi A, Liang A-P, Lima FCT, Liu Z, Lobl I, Lohrmann V, Malchus N, Malipatil MB, Marques AC, Matzke-Karasz R, Mayer G, Mayoral JG, McInnes SJ, Minelli A, Moir ML, Monks S, Morrone JJ, Muster C, Nagy ZT, Narayanan KS, Nearn EH, Nekola J, Nihei SS, Nützel A, Ohler A, Dill Orrico VG, Padial JM, Page LM, Passos P, Paulson D, Perkins PD, Pflingstl T, Prieto C, Pinheiro LR, Pinto-da-Rocha R, Prendini L, Price B, De Prins J, Ramirez M, Rasmussen C, Rasmussen P, Rede D, Ribera I, Ricarte A, Rivera J, Rix MG, Rossaro B, Roy AD, Ruiz GRS, Salles FF, Sanborn AF, Sartori M, Schöller M, Schmelz RM, Schrödl M, Segniagbeto GH, Serrano J, Shimano S, Shin MK, Sidorchuk E, Siler CD, Sket B, Smith AD, Smith ABT, Smith R, Smith-Pardo AH, Sparks J, Sterrer WE, Stroinski A, Svavarsson J, Toledo M, Twomey E, Vasudevan K, Vences M, de Voogd N, Wang Q, Watson GW, Weiner WM, Weksler M, Wesener T, Whitmore D, Wiklund H, Williams PH, Winterton SL, Wood TS, Yen S-H, Zaher H, Zhang Z-Q, Zhou H-Z, 35 Countries 172 Co-Signatories (2018) When the cure kills-CBD limits biodiversity research National laws fearing biopiracy squelch taxonomy studies. *Science* 360:1405–1406.
- Rabal-Garcés R, Castanera D, Luzon A, Barco JL, Canudo JI (2018) A Palaeoichnological Itinerary Through the Cenozoic of the Southern Margin of the Pyrenees and the Northern Ebro Basin (Aragón, Northeast Spain). *Geoheritage* 10:499–509.
- Rauhut OWM, Pinuela L, Castanera D, Garcia-Ramos J-C, Sanchez Cela I (2018a) The largest European theropod dinosaurs: remains of a gigantic megalosaurid and giant theropod tracks from the Kimmeridgian of Asturias, Spain. *PeerJ* 6:e4963.
- Rauhut OWM, Foth C, Tischlinger H (2018b) The oldest *Archaeopteryx* (Theropoda: Avialiae): a new specimen from the Kimmeridgian/Tithonian boundary of Schamhaupten, Bavaria. *PeerJ* 6:e4191.
- Rauhut OWM, Pol D (2019) Probable basal allosauroid from the early Middle Jurassic Canadon Asfalto Formation of Argentina highlights phylogenetic uncertainty in tetanuran theropod dinosaurs. *Sci Rep* 9:18826.
- Rauhut OWM, Tischlinger H, Foth C (2019) A non-archaeopterygid avialan theropod from the Late Jurassic of southern Germany. *Elife* 8:e43789.
- Regalado L, Schmidt AR, Appelhans MS, Ilsemann B, Schneider H, Krings M, Heinrichs J (2018a) A fossil species of the enigmatic early polypod fern genus *Cystodium* (Cystodiaceae) in Cretaceous amber from Myanmar (vol 7, 14615, 2017). *Sci Rep* 8:4272.
- Regalado L, Schmidt AR, Appelhans MS, Ilsemann B, Schneider H, Krings M, Heinrichs J (2018b) A fossil species of the enigmatic early polypod fern genus *Cystodium* (Cystodiaceae) in Cretaceous amber from Myanmar (vol 7, 2017). *Sci Rep* 8:488.
- Regalado L, Schmidt AR, Krings M, Bechteler J, Schneider H, Heinrichs J (2018c) Fossil evidence of eupolypod ferns in the mid-Cretaceous of Myanmar. *Plant Syst Evol* 304:1–13.
- Regalado L, Loriga J, Bechteler J, Beck A, Schneider H, Heinrichs J (2018d) Phylogenetic biogeography reveals the timing and source areas of the *Adiantum* species (Pteridaceae) in the West Indies, with a special focus on Cuba. *J Biogeogr* 45:541–551.
- Reich M, Stegemann TR, Hausmann IM, Roden VJ, Nützel A (2018) The youngest ophiocistoid: a first Palaeozoic-type echinoderm group representative from the Mesozoic. *Palaeontology* 61:803–811.
- Renard E, Leys SP, Wörheide G, Borchellini C (2018) Understanding Animal Evolution: The added value of sponge transcriptomics and genomics: The disconnect between gene content and body plan evolution. *Bioessays* 40:1700237.
- Renner MAM, Heslewood MM, Heinrichs J (2018) Geometric morphometric methods achieve type specimen assignment in the cryptic *Plagiochila arbuscula* complex (Plagiochilaceae: Jungermanniopsida) with the minimum of morphological evidence. *Bot J Linn Soc* 186:108–128.
- Romano C, Lopez-Arbarello A, Ware D, Jenks JF, Brinkmann W (2019) Marine Early Triassic Actinopterygii from the Candelaria Hills (Esmeralda County, Nevada, USA). *J Paleontol* 93:971–1000.
- Romeikat C, Lopez AI, Tietze C, Kretschmann J, Gottschling M (2019) Typification for reliable application of subspecific names within *Peridinium cinctum* (Peridinales, Dinophyceae). *Phytotaxa* 424:147–157.
- Rüegg S, Bräuchler C, Geist J, Heubl G, Melzer A, Raeder U (2019) Phenotypic variation disguises genetic differences among *Najas major* and *N. marina*, and their hybrids. *Aquat Bot* 153:15–23.
- Saka S, Uysal I, Kapsiotis A, Bağcı U, Ersoy EY, Su B-X, Seitz H-M, Hegner E (2019) Petrological character-

- istics and geochemical compositions of the Neotethyan Mersin ophiolite (southern Turkey): Processes of melt depletion, refertilization, chromitite formation and oceanic crust generation. *J Asian Earth Sci* 176:281–299.
- Salmaki Y, Heubl G, Weigend M (2019) Towards a new classification of tribe Stachydeae (Lamiaceae): naming clades using molecular evidence. *Bot J Linn Soc* 190:345–358.
- Schädel M, Perrichot V, Haug JT (2019) Exceptionally preserved cryptoniscium larvae morphological details of rare isopod crustaceans from French Cretaceous Vendean amber. *Palaeontol Electronica* 22:71. 7
- Schrödl M (2019) A scientist's warning: Stop neglecting biodiversity in climate change! *Spixiana* 42:1–5.
- Schubert M, Binnewerg B, Voronkina A, Muzychka L, Wysokowski M, Petrenko I, Kovalchuk V, Tsurkan M, Martinovic R, Bechmann N, Ivanenko VN, Fursov A, Smolii OB, Fromont J, Joseph Y, Bornstein SR, Giovine M, Erpenbeck D, Guan K, Ehrlich H (2019) Naturally prefabricated marine biomaterials: Isolation and applications of flat chitinous 3D scaffolds from *lanthella labyrinthus* (Demospongiae: Verongiida). *Int J Mol Sci* 20:5105. 1
- Schuster A, Pisera A, Kelly M, Bell LJ, Pomponi SA, Wörheide G, Erpenbeck D (2018) New species and a molecular dating analysis of *Vetulina* Schmidt, 1879 (Porifera: Demospongiae: Sphaerocladina) reveal an ancient relict fauna with Tethys origin. *Zool J Linn Soc* 184:585–604.
- Setiawan E, Erpenbeck D, Wörheide G, De Voogd NJ (2018) Bearing the wrong identity: A case study of an Indo-Pacific common shallow water sponge of the genus *Neopetrosia* (Haplosclerida; Petrosiidae). *Zootaxa* 4500:43–58.
- Shaverdo H, Sagata K, Balke M (2018) Introduction of the *Exocelina casuarina*-group, with a key to its representatives and descriptions of 19 new species from New Guinea (Coleoptera, Dytiscidae, Copelatinae). *Zookeys* 803:7–70.
- Shaverdo H, Surbakti S, Warikar EL, Sagata K, Balke M (2019) Nine new species groups, 15 new species, and one new subspecies of New Guinea diving beetles of the genus *Exocelina* Broun, 1886 (Coleoptera, Dytiscidae, Copelatinae). *Zookeys* 878:73–143.
- Shimpi GG, Vargas S, Wörheide G (2018) Modified parallel strategies for preparation of heteroduplex plasmids for in vitro mismatch repair assays. *Anal Biochem* 556:35–39.
- Silvestro D, Tejedor MF, Serrano-Serrano ML, Loiseau O, Rossier V, Rolland J, Zizka A, Höhna S, Antonelli A, Salamin N (2019) Early arrival and climatically-linked geographic expansion of new world monkeys from tiny African ancestors. *Syst Biol* 68:78–92.
- Singh J, Singh N, Chauhan P, Yadav RR, Bräuning A, Mayr C, Rastogi T (2019) Tree-ring delta O-18 records of abating June-July monsoon rainfall over the Himalayan region in the last 273 years. *Quat Int* 532:48–56.
- Smith RE, Smith VC, Fontijn K, Gebhardt AC, Wastegard S, Zolitschka B, Ohlendorf C, Stern C, Mayr C (2019) Refining the Late Quaternary tephrochronology for southern South America using the Laguna Potrok Aike sedimentary record. *Quat Sci Rev* 218:137–156.
- Steinert G, Wemheuer B, Janussen D, Erpenbeck D, Daniel R, Simon M, Brinkhoff T, Schupp PJ (2019) Prokaryotic diversity and community patterns in Antarctic Continental Shelf sponges. *Frontiers in Marine Science* 6:297.
- Stone RP, Lehnert H, Hoff GR (2019) Inventory of the eastern Bering Sea sponge fauna, geographic range extensions and description of *Antho ridgwayi* sp. nov. *Zootaxa* 4567:236–250.
- Tajika A, Nützel A, Klug C (2018) The old and the new plankton: ecological replacement of associations of mollusc plankton and giant filter feeders after the Cretaceous? *PeerJ* 6:e4219.
- Tankovic MS, Baricevic A, Perusco VS, Melzer RR, Lopez AI, Dömel JS, Hess M, Kuzat N, Pfannkuchen DM, Pfannkuchen M (2018) Experimental evidence for shaping and bloom inducing effects of decapod larvae of *Xantho poressa* (Olivi, 1792) on marine phytoplankton. *J Mar Biol Assoc U K* 98:1881–1887.
- Teimori A, Esmaeili HR, Hamidan N, Reichenbacher B (2018) Systematics and historical biogeography of the *Aphanius dispar* species group (Teleostei: Aphaniidae) and description of a new species from Southern Iran. *J Zoolog Syst Evol Res* 56:579–598.
- Tillmann U, Gottschling M (2018) Proposal to conserve the name *Amphidoma* (Dinophyceae) as being of feminine gender and with a conserved type. *Taxon* 67:203.
- Tillmann U, Gottschling M, Guinder V, Krock B (2018) *Amphidoma parvula* (Amphidomataceae), a new planktonic dinophyte from the Argentine Sea. *Eur J Phycol* 53:14–28.
- Tillmann U, Gottschling M, Krock B, Smith KF, Guinder V (2019) High abundance of Amphidomataceae (Dinophyceae) during the 2015 spring bloom of the Argentinean Shelf and a new, non-toxicogenic ribotype of *Azadinium spinosum*. *Harmful Algae* 84:244–260.
- Tillmann U, Hoppenrath M, Gottschling M (2019) Reliable determination of *Procoentrum micans* Ehrenb. (Procoentrales, Dinophyceae) based on newly collected material from the type locality. *Eur J Phycol* 54:417–431.
- Tomasello S, Stuessy T, Oberprieler C, Heubl G (2019) Ragweeds and relatives: Molecular phylogenetics of Ambrosiinae (Asteraceae). *Mol Phylogenet Evol* 130:104–114.
- Toussaint EFA, Dias FMS, Mielke OHH, Casagrande MM, Sanudo-Restrepo CP, Lam A, Moriniere J, Balke M, Vila R (2019) Flight over the Proto-Caribbean seaway: Phylogeny and macroevolution of Neotropical leafwing butterflies. *Mol Phylogenet Evol* 137:86–103.
- Topuz G, Hegner E, Homam SM, Ackerman L, Pfänder JA, Karimi H (2018) Geochemical and geochronologi-

- cal evidence for a Middle Permian oceanic plateau fragment in the Paleo-Tethyan suture zone of NE Iran. *Contrib Mineral Petrol* 173:81.
- Vacelet J, Erpenbeck D, Diaz C, Ehrlich H, Fromont J (2019) New family and genus for Dendrilla-like sponges with characters of Verongiida. Part I redescription of *Dendrilla lacunosa* Hentschel 1912, diagnosis of the new family Ernstiliidae and *Ernstilla* n. g. *Zool Anz* 280:14–20.
- Vahed NS, Esmaeili HR, Masoudi M, Reichenbacher B (2018) Early otolith development in the critically endangered tooth-carp, *Aphanius farsicus* (Teleostei: Cyprinodontidae). *Environ Biol Fishes* 101:1309–1317.
- Vahed NS, Esmaeili HR, Masoudi M, Reichenbacher B (2019) Ontogenetic Otolith Development in an Endemic Tooth-Carp, *Aphanius vladykovi* (Teleostei: Aphaniidae). *J Ichthyol* 59:336–343.
- Van der Wal S, Haug JT (2019) Letter to the editor referencing “The apparent kleptoparasitism in fish-parasitic gnathiid isopods” 10.1007/s00436-018-6152-8. *Parasitol Res* 118:1679–1682.
- Van Heteren AH, Figueirido B (2019) Diet reconstruction in cave bears from craniodental morphology: past evidences, new results and future directions. *Hist Biol* 31:500–509.
- Van Heteren AH, Kraft R (2019) Spix’s type specimens of Neotropical primates at the Bavarian State Collection of Zoology: a revision with reference to the currently recognised species. *Spixiana* 42:141–160.
- Van Heteren AH, Arlegi M, Santos E, Arsuaga J-L, Gomez-Olivencia A (2019) Cranial and mandibular morphology of Middle Pleistocene cave bears (*Ursus deningeri*): implications for diet and evolution. *Hist Biol* 31:485–499.
- Vasilikopoulos A, Balke M, Beutel RG, Donath A, Podsiadlowski L, Pflug JM, Waterhouse RM, Meusemann K, Peters RS, Escalona HE, Mayer C, Liu S, Hendrich L, Alarie Y, Bilton DT, Jia F, Zhou X, Maddison DR, Niehuis O, Misof B (2019) Phylogenomics of the superfamily Dytiscoidea (Coleoptera: Adephaga) with an evaluation of phylogenetic conflict and systematic error. *Mol Phylogenet Evol* 135:270–285.
- Veiskarami GH, Khodayari H, Heubl G, Weigend M, Zarre S (2019) Phylogenetic relationships of Iranian *Allium* sect. *Allium* (Amaryllidaceae, Alliioideae) as inferred from nrDNA ITS, cpDNA rps16 and trnL-F sequences. *Nord J Bot* 37:e02109.
- Voigt O, Ruthensteiner B, Leiva L, Fradusco B, Wörheide G (2018) A new species of the calcareous sponge genus *Leuclathrina* (Calcarea: Calcinea: Clathrinida) from the Maldives. *Zootaxa* 4382:147–158.
- Vuillemin A, Horn F, Friese A, Winkel M, Alawi M, Wagner D, Henny C, Orsi WD, Crowe SA, Kallmeyer J (2018) Metabolic potential of microbial communities from ferruginous sediments. *Environ Microbiol* 20:4297–4313.
- Vuillemin A, Ariztegui D, Horn F, Kallmeyer J, Orsi WD, Team PS (2018) Microbial community composition along a 50 000-year lacustrine sediment sequence. *FEMS Microbiol Ecol* 94:fiy029.
- Vuillemin A, Wankel SD, Coskun ÖK, Magritsch T, Vargas S, Estes ER, Spivack AJ, Smith DC, Pockalny R, Murray RW, D’Hondt S, Orsi WD (2019) Archaea dominate oxic subseafloor communities over multimillion-year time scales. *Sci Adv* 5:eaaw4108.
- Wagner P, Haug JT, Haug C (2019) A new calmanostracan crustacean species from the Cretaceous Yixian Formation and a simple approach for differentiating fossil tadpole shrimps and their relatives. *Zoological Letters* 5:20.
- Wagner P, Haug JT, Sell J, Haug C (2018) A fossil crustacean from the Upper Triassic of southern Germany with kazacharthran affinities. *Paleontol Res* 22:57–63.
- Wölfer J, Amson E, Arnold P, Botton-Divet L, Fabre A-C, van Heteren AH, Nyakatura JA (2019) Femoral morphology of sciuriform rodents in light of scaling and locomotor ecology. *J Anat* 234:731–747.
- Wooster MK, Voigt O, Erpenbeck D, Wörheide G, Berumen ML (2019) Sponges of the Red Sea. In: Voolstra, CR and Berumen, ML (ed) *Coral reefs of the Red Sea*. Springer International Publishing AG, Gewerbestrasse 11, Cham, CH-6330, Switzerland, p 91–122
- Zolitschka B, Fey M, Janssen S, Maidana NI, Mayr C, Wulf S, Haberzettl T, Corbella H, Lücke A, Ohlendorf C, Schäbitz F (2019) Southern Hemispheric Westerlies control sedimentary processes of Laguna Azul (south-eastern Patagonia, Argentina). *Holocene* 29:403–420.

Other Peer reviewed Journals

- Daxner-Höck, G. Erbajeva, M.A., Göhlich, U.B., Lopez-Guerrero, P., Narantsetseg, T., Mennecart, B., Olivier, A., Vasilyan, D. & Ziegler, R. (2019) The Oligocene Vertebrate assemblage of Shine Us (Khaliun Basin, Western Mongolia). *Annalen des Naturhistorischen Museums in Wien* 121:195–256.
- Fleischmann A (2019) Floristische Kurzberichte. *Ber Bayer Bot Ges* 89:298 – 306.
- Fleischmann A (2018) Floristische Kurzmitteilungen. *Ber Bayer Bot Ges* 88:143–166.
- Fleischmann A, Gonella PM, Rivadavia F (2018a) A new sectional name for the Brazilian tetraploid clade of *Drosera* subgenus *Drosera*. *Carniv PI Newslett* 47:4–9.
- Fleischmann A, Rivadavia F, Gonella PM (2018b) Erratum. *Carniv PI Newslett* 47:135.
- Poppinga S, Alamsyah F, Bauer U, Fleischmann A, Horstmann M, Klink S, Kruppert S, Lin Q, Müller U, Northrop A, Płachno BJ, Prins A, Scharm M (2018) What's new in the world of carnivorous plants - Summary of two symposia held in July 2017. *Carniv PI Newslett* 47:18–27.
- Reich M, Kutscher M (2018) Die Echinodermen der Rügener Schreibkreide (Maastrichtium, Deutschland) – ein kurzes Update der nachgewiesenen Arten. *Zitteliana* 92:33–36.
- Reich M, Kutscher M, Stegemann TR (2018a) 6. Arbeitstreffen deutschsprachiger Echinodermenforscher, Sassnitz/Rügen, 06.-08. April 2018. Kurzfassungen und Exkursionsführer. 39 pp.; München (BSPG).
- Reich M, Herrig E, Frenzel P, Kutscher M (2018b) Die Rügener Schreibkreide – Lebewelt und Ablagerungsverhältnisse eines pelagischen oberkretazischen Sedimentationsraumes. *Zitteliana* 92:17–32.
- Röper M, Reich M (2018) Übersicht zur Verarbeitung der Echinodermata in den Oberjura-Plattenkalken (Kimmeridgium–Tithonium) des Solnhofenarchipels (Bayern, Deutschland). *Zitteliana* 92:37–39.
- Schlauer J, Carow T, Fleischmann A (2019) Quinones from “Gondwanan” sundews. *Carniv PI Newslett* 48:13–17.

Other publications

- Ansorge J, Reich M (2018) Komplette Libelle *Sphenophlebia pommerana* Ansorge, 1996. Fossilien (Journal für Erdgeschichte) 35:60–61.
- Höhna S, Freyman WA, Nolen Z, Huelsenbeck JP (2019) A Bayesian approach for estimating branch-specific speciation and extinction rates. bioRxiv 555805.
- Krings M, Harper CJ, Cúneo NR, Rothwell GW (eds) (2018) Transformative Paleobotany. Papers to Commemorate the Life and Legacy of Thomas N. Taylor, London, San Diego, CA, Cambridge, MA, Oxford, Elsevier/Academic Press Inc
- Musser JM, Schippers KJ, Nickel M, Mizzon G, Kohn AB, Pape C, Hammel JU, Wolf F, Liang C, Hernández-Plaza A, Achim K, Schieber NL, Francis WR, Vargas R. S, Kling S, Renkert M, Feuda R, Gaspar I, Burkhardt P, Bork P, Beck M, Kreshuk A, Wörheide G, Huerta-Cepas J, Schwab Y, Moroz LL, Arendt D (2019) Profiling cellular diversity in sponges informs animal cell type and nervous system evolution. bioRxiv 758276.
- Nose M (2018) Ein problematisches Ediacara-Fossil aus dem Neoproterozoikum von Namibia? *Beltanelliformis brunsae* Menner in Keller et al., 1974. Freunde der Bayerischen Staatssammlung für Paläontologie und Historische Geologie München eV, Jahresbericht und Mitteilungen 46:40–43.
- Nose M (2019) *Entelophyllum* sp. – eine rugose Stockkoralle aus dem Silur der Insel Gotland, Schweden. Jber 2018 u Mitt Freunde Bayer Staatsslg Paläont Hist Geol München eV 47:31–34.
- Nützel A (2019a) Die Cassian-Formation: Ein Blick in die Diversität des frühen Erdmittelalters. Freunde der Bayerischen Staatssammlung für Paläontologie und Historische Geologie München eV, Jahresbericht 2018 und Mitteilungen 47:47–70.
- Nützel A (2019b) Ist Paläontologie Briefmarkensammeln? GMit 73:73.
- Nützel A, Reichenbacher B, Krings M (2019) Abstracts of the 90th Annual Meeting of the Paläontologische Gesellschaft, Munich 2019. 151pp.
- Orsi WD, Vuillemin A, Rodriguez P, Coskun ÖK, Gomez-Saez GV, Lavik G, Morholz V, Ferdelman TG (2019) Lokiarchaeon exhibits homoacetogenesis. bioRxiv.
- Reich M (2018/2019) Friedrich von Alberti-Preis an Michael Krings. SNSB Jahresheft (Aus den Staatlichen Naturwissenschaftlichen Sammlungen Bayerns) 2018/2019
- Reich M (2018) Bernstein-Gitterwanze *Paleocader strictur* Golub & Popov, 1998, Baltischer Bernstein; Paläogen: Eozän, Halbinsel Samland. Fossilien (Journal für Erdgeschichte) 35:56.
- Reich M, Gehler A (2018) Meteoritensammlung. In: Beisiegel U (ed) Die Sammlungen, Museen und Gärten der Universität Göttingen (2nd rev. ed.). Göttingen (Universitätsverlag Göttingen), pp 136–137
- Reich M, Krings M (2019) „Faszination Bernstein“. Fotoausstellung im Paläontologischen Museum München. GMit 78:123.
- Reich M, Stegemann TR (2018a) 16th International Echinoderm Conference in Nagoya (Japan). GMit 73:72.
- Reich M, Stegemann TR (2018b) Geologische Sammlungen. In: Beisiegel U (ed) Die Sammlungen, Museen und Gärten der Universität Göttingen (2nd rev. ed.). Göttingen (Universitätsverlag Göttingen), pp 120–121
- Reich M, Stegemann TR (2018c) Paläobotanische Sammlungen. In: Beisiegel U (ed) Die Sammlungen, Museen und Gärten der Universität Göttingen (2nd rev. ed.). Göttingen (Universitätsverlag Göttingen), pp 122–123
- Reich M, Stegemann TR (2018d) Paläozoologische Sammlungen. In: Beisiegel U (ed) Die Sammlungen, Museen und Gärten der Universität Göttingen (2nd rev. ed.). Göttingen (Universitätsverlag Göttingen), pp 124–125
- Reich M, Stegemann TR (2019) 10th European Conference on Echinoderms, Moskau 16.-19.09.2019. GMit 78:107-108.
- Reich M, Wörheide G (2018) 175 Jahre Bayerische Staatssammlung für Paläontologie und Geologie in München. GMit 72:103–104.
- Reich M, Gehler A, Stegemann TR (2018a) Historische Geowissenschaften. In: Beisiegel U (ed) Die Sammlungen, Museen und Gärten der Universität Göttingen (2nd rev. ed.). Göttingen (Universitätsverlag Göttingen), pp 138–139
- Reich M, Gehler A, Stegemann TR (2018b) Mineralogische Sammlungen. In: Beisiegel U (ed) Die Sammlungen, Museen und Gärten der Universität Göttingen (2nd rev. ed.). Göttingen (Universitätsverlag Göttingen), pp 132–133
- Reich M, Hornung JJ, Stegemann TR (2018a) Geologische Sammlung des Adolfinums Bückeberg. In: Beisiegel U (ed) Die Sammlungen, Museen und Gärten der Universität Göttingen (2nd rev. ed.). Göttingen (Universitätsverlag Göttingen), pp 130–131
- Reich M, Ilsemann B, Krings M (2019) Faszination Bernstein. Momentaufnahmen aus einer vergangenen Zeit / Fascination Amber. Snapshots from the Distant Past 60 pp.
- Reich M, Stegemann TR, Gehler A (2018a) Bernsteinsammlungen. In: Beisiegel U (ed) Die Sammlungen, Museen und Gärten der Universität Göttingen (2nd rev. ed.). Göttingen (Universitätsverlag Göttingen), pp 128–129
- Reich M, Stegemann TR, Gehler A (2018b) Geopark. In: Beisiegel U (ed) Die Sammlungen, Museen und Gärten der Universität Göttingen (2nd rev. ed.). pp 126–127
- Reich M, Krings M, Fischer J, Jovanovic-Kruspel S (2019) „Paläo-Art“. Sonderausstellung im Paläontologischen Museum München. GMit 78:125.

- Reitner J, Stegemann T, Reich M (2018) Auswertung der PalZ-Umfrage. GMit 72:94–95.
- Schultz M, Reich M (2018) Blumenbachsche Schädel-sammlung. In: Beisiegel U (ed) Die Sammlungen, Museen und Gärten der Universität Göttingen (2nd rev. ed.). Göttingen (Universitätsverlag Göttingen), pp 72–73
- Stegemann T, Reich M (2018) 6. Arbeitstreffen deutschsprachiger Echinodermenforscher in Sassnitz/Rügen. GMit 72:95–96.