

Curriculum Vitae

Jorge Colmenar
2017

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Nationality: Spanish

Education

2010 – 2014: **PhD**: “Upper Ordovician brachiopods of the Mediterranean province: Systematic Palaeontology, Functional Morphology, Palaeoecology and Palaeobiogeography”. University of Zaragoza; funded by Spanish Ministry of Science and Innovation. **Qualification**: Sobresaliente Cum Laude.

2009 – 2010: **Ms Thesis**: “Biostratigraphy of genus *Calix* (Diploporita, Echinodermata) in the Central Iberian Zone (Spain).”

2003 – 2010: In Geological Sciences. Universidad Complutense of Madrid, Spain.

Career

September 2015 – Present: Postdoc researcher at the Geological Museum of the Natural History Museum of Denmark, Copenhagen.

- Using the PBDB (PalaeoBiology DataBase) to know when and why occurred the onset of the GOBE (Global Ordovician Biodiversification Event) and tracking the origin of the mayor groups from the Cambrian to early Silurian.
- My second line of research is fossil field collection-based research to analyze the extinction rate during the Hirnantian extinction and to assess the faunal recovery across the Ordovician/Silurian boundary in peri-Gondwana.

January 2015 – July 2015 **Research assistant** at the Geological Survey of Spain (IGME), Zaragoza, Spain.

- Analyzing brachiopod diversity patterns through time in Gondwana, focusing on extinction rate and faunal recovery across the Ordovician/Silurian boundary.

2012 – 2014: **Teaching Assistant**, Department of Earth Sciences, University of Zaragoza

- Teaching practicals and fieldwork on Invertebrate Palaeontology.

July 2009 – August 2009: **Assistant curator of Invertebrate Paleontology and Paleobotany**, National Museum of Natural History, Madrid, Spain

- Curating the Invertebrate and Paleobotany collections and improving the database.

2004 – 2014: **Assistant and director in Palaeontological Excavations**

- Working as volunteer and as director in various palaeontological excavations run by universities and museums.

Grants

- 2010 – 2014 – Pre-Doctoral Grant, Spanish Ministry of Sciences and Innovation, Grant.
- 2015 – 2017 – Villum Young Postdoctoral research contract, Danish private foundation.

Academic Awards

- 2014 – Best Poster of the Meeting (EJIP)

Stays in public or private R&D&I centres

- Università degli studi di Cagliari (Sardegna, Italy). With Gian Luigi Pillola. 20 days (2013-2014).
- Natural History Museum of London (United Kingdom). With Robin Cocks, 1 week (2012).
- Durham University, Department of Earth Sciences. With David A.T. Harper, 2 months (2012).
- Université de Brest (Bretagne, France). With Rémy Gourvenec and Michel Mélou, 1 week (2012).
- Museu Geológico de Lisboa (Portugal). With Miguel Ramalho, 15 days (2011).

Teaching and Students

2012-2014: Department of Earth Sciences, Zaragoza University

- Fieldwork and practicals for Invertebrate Palaeontology.

Professional Service and Memberships

- Reviewer for *EJIP*: 2014 – Present
- Reviewer for *Geogaceta*: 2016 – Present
- Co-Organizer: XII EJIP, Meeting of Youth Researchers in Palaeontology, 2014
- Member of the Society of Spanish Palaeontology: 2014 – Present
- Co-Organizer of the Progress in Echinoderm Palaeobiology, 2015
- Member of the Palaeontological Association: 2016 – Present.
- Member of the Palaeontological Society: 2016 – Present.
- Co-Organizer: XV EJIP, Meeting of Youth Researchers in Palaeontology, 2017

Language Skills

Language	Speaking	Reading	Writing
Portuguese	Advanced	Advanced	Advanced
French	Elementary	Intermediate	Elementary
Spanish	Advanced	Advanced	Advanced
English	Advanced	Advanced	Advanced

Fieldwork and Analytical Skills

Palaeontological fieldwork:

- I have experience in all ages and fossil groups. First as an amateur paleontologist, then as a volunteer in professional excavations and since I started my PhD organizing my own field works. My research is fundamentally focus on original field collections in the early Palaeozoic of Gondwana, Morocco, Spain, Sardinia, Montagne Noire, Armorican Massif, Carnic Alps and Sweden. I have advanced skills in organizing fieldwork campaigns to collecting fossils in all the countries mentioned above specially in the Ordovician of Morocco, where I organized until now 6 field campaigns in the Anti Atlas from the Southwest of Zagora to the Tafilalt region. I have also skill to communicate and to bargain with local fossil sellers for buying specimens, skills improved since my first trip to Morocco in 2004.

Analytical techniques:

- I have advanced skills in statistical analysis using PAST, working with databases specially to perform Discriminant Analysis (DA), Cluster Analysis (CA), Detrended Correspondence Analysis (DCA), Principal Components Analysis (PCA), Thin Plate Splines (TPS) Deformation Method, α , β , γ diversity, PCO, as well as using TPSdig and TPSutil software to landmarks acquisition. In the same way I have skills using PAUP to perform cladistic analyses. All these skills are proven in my publication record.

Peer-reviewed Publications

Submitted

- **Colmenar, J.** & Rasmussen, C.M.Ø. A Gondwanan perspective on the onset of the GOBE suggests first wave of radiations to be caused by speciation within Cambrian clades. *Lethaia*.

In press

- **Colmenar, J.**, Pereira, S., Sá, A.A., Silva, C.M. da & Young, T.P. A Kralodvorian (upper Katian, Upper Ordovician) benthic association from the Ferradosa Formation (Central Portugal) and its significance for the redefinition and subdivision of the Kralodvorian Stage. *Bulletin of Geosciences*.
- Mergl, M., Hoşgör, İ., Yılmaz, İ.O., Zamora, S. & **Colmenar, J.** Divaricate pattern in the Cambro-Ordovician obolid brachiopods from Gondwana. *Historical Biology*. (Corresponding author).

2017

- Cole, S., Ausich, W.I. **Colmenar, J.** & Zamora, S. Filling the Gondwanan gap: paleobiogeographic implications of new crinoids from the Castillejo and Fombuena formations (Middle and Upper Ordovician, Iberian Chains, Spain). *Journal of Paleontology*. doi: 10.1017/jpa.2016.135

2016

- **Colmenar, J.** Ordovician Rafinesquininae (Brachiopoda, Rhynchonelliformea) from peri-Gondwana. *Acta Palaeontologica Polonica*, 61 (2), 293–326.
- Álvaro, J.J., **Colmenar, J.**, Monceret, E., Pouclet, A. & Vizcaïno, D. Late Ordovician (post-Sardic) rifting branches in the North Gondwanan Montagne Noire and Mouthoumet massifs of southern France. *Tectonophysics*, 681, 111–123.

- Gutiérrez-Marco, J.C., Sá, A.A., Villas, E., Bernárdez, E., **Colmenar, J.**, Zamora, S., Rábano, I., Lorenzo, S., Sarmiento, G.N., García-Bellido, D.C., Piçarra, J.M., Pereira, S. & Jiménez-Sánchez, A. Cronoestratigrafía del Ordovícico ibérico. *Geotemas* 16 (1), 145–148.

2015

- **Colmenar, J.** The arrival of brachiopods of the Nicolella Community to the Mediterranean margin of Gondwana during the Late Ordovician: palaeogeographical and palaeoecological implications. *Palaeogeography, Palaeoclimatology, Palaeoecology*, 428, 12–20.
- **Colmenar, J.** & Alvaro, J.J. Integrated brachiopod-based bioevents and sequence-stratigraphic framework for a Late Ordovician subpolar platform, eastern Anti-Atlas, Morocco. *Geological Magazine*, 152 (4), 603–620.
- Villas, E., **Colmenar, J.** & Gutiérrez-Marco, J.C. Late Ordovician brachiopods from Peru and their palaeobiogeographical relationships. *Palaeontology*, 58 (3), 455–487.
- Gutiérrez-Marco, J.C., Sá, A.A., Rábano, I., Sarmiento, G.N., García-Bellido, D.C., Bernárdez, E., Lorenzo, S., Villas, E., Jiménez-Sánchez, A., **Colmenar, J.** & Zamora, S. Iberian Ordovician and its International Correlation. *Stratigraphy*, 12 (2), 107–108.

2014

- **Colmenar, J.**, Harper, D.A.T. & Villas, E. Morphofunctional analysis of *Svobodaina* species (Brachiopoda, Heterorthidae) from south-western Europe. *Palaeontology*, 57 (1), 193–214.
- **Colmenar, J.**, Sá, A.A. & Vaz, N. A draboviid brachiopod association from the Upper Ordovician of Portugal: Palaeoecological and palaeogeographical significance. *GFF*, 136 (1), 60–64.
- Castanera, D., **Colmenar, J.**, Sauqué, V., Canudo, J.I. Geometric morphometric analysis applied to theropod tracks from the Lower Cretaceous (Berriasian) of Spain. *Palaeontology*, 58 (1), 183–200.

2013

- **Colmenar, J.**, Villas, E. & Vizcaíno, D. Upper Ordovician brachiopods from the Montagne Noire (France): Endemic Gondwanan predecessors of prehirnantian low-latitude immigrants. *Bulletin of Geosciences*, 88 (1), 153–174.
- Reyes-Abril, J., Villas, E., Gutiérrez-Marco, J.C., Jiménez-Sánchez, A. & **Colmenar, J.** Middle Ordovician harknessellid brachiopods (Dalmanellidina) from the Mediterranean margin of Gondwana. *Bulletin of Geosciences*, 88 (4), 813–828.

Non Peer-Reviewed Publications and conferences

- **Colmenar, J.**, Rasmussen, C.M.Ø. 2016. A Gondwanan perspective on the onset of the GOBE: preliminary brachiopod a-diversity data from the Iberian Peninsula. In: Proceedings of the IGCP 653 Opening Meeting (Durham, UK).
- Rasmussen, C.M.Ø., **Colmenar, J.**, Nielsen, M.L. & Kröger, B. 2016. Constructing a high-resolution biodiversity curve through the GOBE interval by applying time slices based on lithostratigraphical ranges of fossil occurrences in the Paleobiology Database. In: Proceedings of the IGCP 653 Opening Meeting (Durham, UK).
- **Colmenar, J.**, Pereira, S., Sá, A.A., Silva, C.M. da & Young, T.P. 2016. First report of the *Foliomena* Fauna in Portugal. In: Proceedings of the 60th Annual PalAss Meeting (Lyon, France).

- **Colmenar, J.**, Pereira, S., Sá, A.A. & Silva, C.M. da. 2016. An Upper Ordovician benthic assemblage from the Cabeço Pedrogão locality (Central Iberian Zone, Portugal): biostratigraphical and palaeobiogeographical remarks. In: *New perspectives on the Evolution of Phanerozoic Biotas and Ecosystems. Proceedings of the XIV EJIP* (Alpuente, Valencia, Spain).
- Cole, S., Ausich, W.I. **Colmenar, J.** & Zamora, S. 2016. A new Gondwanan crinoid fauna from the Upper Ordovician (Katian) of Spain: systematics and paleobiogeographic implications. In: *Proceedings of the 2016 GSA Annual Meeting* (Denver, USA).
- Pereira, S., **Colmenar, J.**, Sá, A.A., Silva, C.M. da & Young, T.P. 2016 The Vinha de Leira Má locality (Upper Ordovician, Buçaco, Portugal): considerations on the age and the lithostratigraphy of the Porto de Santa Anna Formation. In: *Livro de actas do VI Congresso Jovens Investigadores em Geociências, LEG 2016* (Estremoz, Portugal).
- Villas, E. **Colmenar, J.** Gutiérrez-Marco, J.C. García-Bellido, D.C., Lorenzo, S., Pereira, S. & Álvaro, J.J. 2016. The Hirnantia fauna and the correlation of the uppermost Ordovician in the Central Anti-Atlas (Morocco). In: *Proceedings of the 35th International Geological Congress* (Cape Town, South Africa).
- Villas, E., **Colmenar, J.**, Gutiérrez-Marco, J.C., Pereira, S., Álvaro, J.J., García-Bellido, D.C. & Lorenzo, S. 2016. Biostratigraphic assessment of the uppermost Ordovician in the central Anti-Atlas (Morocco). In: *Proceedings of the 60th Annual PalAss Meeting* (Lyon, France).
- **Colmenar, J.** & Álvaro, J.J. 2015. Upper Ordovician of the Tafilalt region (eastern Anti-Atlas, Morocco): brachiopod associations, bioevents and sequence-stratigraphy.
- **Colmenar, J.**, Bernárdez, E., Gutiérrez-Marco, J.C., Rábano, I. & Zamora, S. 2015. Reevaluation of the Hirnantia Fauna based on new finds from Spain. In: *Proceedings of the 2015 GSA Annual Meeting* (Baltimore, USA).
- **Colmenar, J.**, Pereira, S. Sá, A.A. & da Silva, C.M. 2015. An outstanding upper Katian (Upper Ordovician) fossil assemblage from Portugal (Buçaco, Central Iberian Zone): biostratigraphical and palaeobiogeographical significance. In: *Proceedings of the 59th Annual PalAss Meeting* (Cardiff, Wales), pp. 21.
- **Colmenar, J.** 2015. Palaeoecology of the Late Ordovician brachiopod associations from the Mediterranean margin of Gondwana. In: *Proceedings of the XIII EJIP* (Cercedilla, Spain), pp. 75–77.
- Bernárdez, E., **Colmenar, J.**, Gutiérrez-Marco, J.C., Rábano, I. & Zamora, S. 2015. New peri-Gondwanan records of the Hirnantia Fauna in the latest Ordovician of Spain. In: *Proceedings of the Gondwana 15 Meeting* (Madrid, Spain).
- **Colmenar, J.** Villas, E. Gutiérrez-Marco, J.C. and Zamora, S. 2015. Ordovician to Devonian echinoderm faunas from the Iberian Chains. In: S. Zamora (coord.), J.J. Álvaro, M. Arbizu, J. **Colmenar, J.** Esteve, E. Fernández-Martínez, L.P. Fernández, J.C. Gutiérrez-Marco, J.L. Suárez Andrés, E. Villas and J. Waters. *Field trip guide: Palaeozoic Echinoderms from Northern Spain*. 79 p. ISBN: 978-84-7840-961-7.
- Sumrall, C.D., Deline, B., **Colmenar, J.**, Sheffield, S.L. & Zamora, S. 2015. New data on Late Ordovician (Katian) echinoderms from Sardinia, Italy. In: *Progress in Echinoderm Palaeobiology / S. Zamora & I. Rábano, editores*. – Madrid : Instituto Geológico y Minero de España, 2015. pp. 175–180. ISBN: 978-84-7840-961-7.
- **Colmenar, J.** 2014. The poleward brachiopod migration during the Boda event and its use to perform precise palaeogeographical reconstructions. In: *New insights on ancient life* (Boltaña, Spain), pp. 33–36. ISBN: 978-84-92522-78-1.
- Arreguín-Rodríguez, G.; **Colmenar, J.**, Díaz Berenguer, E., Galán, J., Legarda-Lisarrri, A., Parrilla-Bel, J., Puértolas-Pascual, E. & Silva-Casal, R. 2014. *New insights on ancient life*. 245 pp. Prensas Universitarias de Zaragoza. ISBN: 978-84-92522-78-1.

- Zamora, S., **Colmenar, J.** & Ausich, W.I. 2014. The echinoderm faunas from the Fombuena Formation (Upper Ordovician, Iberian Chains, Spain). XXX Jornadas de la Sociedad Española de Paleontología. *Fundamental!*, 24, 257– 259.
 - Zamora, S., **Colmenar, J.**, Deline, B., Sheffield, S.L. & Sumrall, C.D. 2014. New data on Late Ordovician (Katian) echinoderms from Sardinia, Italy. In: Geological Society of America Abstracts with Programs, 46, (6), p.139.
 - **Colmenar, J.**, Harper, D.A.T. & Villas, E. 2013. Muscles versus environment: Morphofunctional analysis of the brachiopod genus *Svobodaina*. In: Proceedings of the 3rd IGCP 591 Annual Meeting (Sweden). 67–68. ISBN 978-91-86746-87-2.
 - Villas, E., **Colmenar, J.**, Gutiérrez-Marco, J.C. & Chacaltana, C. 2013. Ordovician brachiopods from Peru and the persistence of a Gondwanan faunal signal in Avalonia during the late Sandbian. In: Proceedings of the 3rd IGCP 591 Annual Meeting (Sweden). 327–328. ISBN 978-91-86746-87-2.
 - **Colmenar, J.** 2012. El género *Hedstroemina* (Brachiopoda, Articulata) en el Ordovícico Superior de la Provincia Mediterránea: sistemática y morfología funcional. In: Libro de resúmenes de las XXVII Jornadas de la Sociedad Española de Paleontología (SEP). Balearic Islands (Spain). 153–156. ISBN 978-84-370-8993-5.
 - **Colmenar, J.** 2012. Taxonomía e implicaciones paleoecológicas de los braquiópodos del Ordovícico Superior de la Montaña Negra. In: Seminarios de Geología. 2, pp. 29 - 30. Aragón (Spain): ISBN 978-84-92522-53-8.
 - **Colmenar, J.**, Villas, E. & Vizcaíno, D. 2011. Estudio preliminar de los braquiópodos de la Arenisca de Glauzy del Ordovícico Superior de la Montaña Negra, Francia. In: Paleontologia i evolució, 5, 71–73. Catalonia (Spain): Gràfica Masana, ISBN: 978-84-615-3001-4.
 - Gutiérrez-Marco, J.C. & **Colmenar, J.** 2011. Biostratigraphy of the genus *Calix* (Echinodermata, Diploporita) in the Middle Ordovician from the Central Iberian Zone. In: Ordovician of the World. 11th International Symposium on the Ordovician System. 135-147. ISBN: 978-84-7840-857-3.
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