



14/12/1994

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Nationality: France, Swiss

Speaking and writing:
French, English

Hobbies: climbing, horse riding (3 medals in French championship, sport horse training)

Morgane Dubied

PhD in Palaeontology - Evolutionary Biology
UMR6282 - Biogéosciences (Dijon, France)

PhD Thesis

UMR 6282 – Biogéosciences (Dijon) / Université de Bourgogne Franche-Comté / ED 554 Environnement-Santé

Postnatal development and evolution of the craniofacial complex in rodents
Directed by Pr Sophie Montuire & Dr Nicolas Navarro

Background

Being a paleontologist my main interest in evolution is the development of the craniofacial complex in rodents, i.e. the positioning of different tissues (bone, muscle, teeth, internal organs) during growth. The question of changes in the conformation of different tissues during development should be looked at both on a microevolutionary scale (at family level) and on a macroevolutionary scale (at order level). The aim is to gain a better understanding of the involvement of shape changes in the evolutionary processes that led to the diversity of a group. It is equally important to take into account the life-history traits resulting from the adaptive history of the various taxa studied. Thus, my research is divided in several axes:

- Shape change of the skull and mandible and the covariation of these two units during development, i.e. whether or not the change in shape is synchronized;
- The influence of the growth of the various tissues on these changes in shape;
- The implication of these developmental patterns in the rodent's evolutionary history;
- The comparison between macroevolution and microevolution;
- The implication of life history traits in evolution processes.

My thesis project focuses on the evolution and postnatal development (i.e. after birth) of the craniofacial complex in rodents.

Skills

- mammals anatomy (especially rodents)
- X-ray microtomography
- surface tomography
- 3D analysis (Avizo, 3DSlicer, Meshlab)
- geometric morphometrics
- univariate and multivariate statistics (R, Rstudio)

University training

2012 – Scientific Baccalaureat (Lycée Lakanal 92, France)

2012-2016 – Bachelor in Earth and Universe Sciences (Paris-Sud University, France)

2016-2018 – Master in Sedimentology Paleontology Geochemistry Georesources (University of Burgundy, France)

Research experience

2015-2017 – Inventory and promotion of the Quatrehomme Collection Musée de La Monnaye (Meung-sur-Loire, France)

Directed by C. Gilbert & Dr B. Mennecart

2017 – Study of chirotherioid footprints from Ardeche

UMR 6282 Biogéosciences

Directed by Pr E. fara

2018 – Contribution of 3D tomography to the study of the endocranum of creodonts: phylogenetic and paleoecological aspects

Naturhistosches Museum Basel & Royal Institute of Natural Sciences Belgium Bruxelles

Directed by Dr F. Solé, Dr L. Costeur & Dr B. Mennecart

Administrative functions

2018-2022 – Elected to the Council and nominated to the Board of Doctoral School 554 Environment-Health

2019-2022 – Elected to the Council and nominated to the Board of the Research Comission of the University de Burgundy

2019-2022 – Representative of the doctoral students in the Council of UMR 6282 Biogéosciences

Associative

2015-2016 – Treasurer of AGUPS (Association of Geologists of Paris-Sud University)

2016-2017 – Treasurer of the AEAEGUD (Association of Students and Former Students of the University of Dijon)

2018-2020 – Treasurer of EDIFICE (Association of doctoral students of Doctoral School 554 Environment-Health)

Scientific mediation

2015-2018 – Creation and animation of workshops (3 to 7 years old) around ecology and paleontology
La Monnaye Museum (Meung-sur-Loire)

2018-2022 – Experimentarium, creation and facilitation of popularization workshops for schools and the general public (several participations per year) University of Burgundy

2019-2024 – Participation in my Researchers' Night (four times) University of Burgundy

Editorial activities

Review editor for Frontiers in Mammal Science (Frontiers Group)

Scientific publications

2017

Dubied, M., Gilbert, C., Deléglise, M., Laurens, F., & Mennecart, B. De l'importance de la collection Quatrehomme (Musée La Monnaye, Meung-sur-Loire) dans le paysage paléontologique français. *Carnets Geol.*, 17(05), 129.

2018

Solé, F., **Dubied, M.**, Verger, K. L., & Mennecart, B. Niche partitioning of the European carnivorous mammals during the Paleogene. *Palaios*, 33(11), 514-523.

Solé, F., Dubied, M., Le Verger, K., & Mennecart, B. 3D models related to the publication: Niche partitioning of the European carnivorous mammals during the Paleogene. *MorphMuseuM*, 4, e63.

2019

Dubied, M., Solé, F., & Mennecart, B. The cranium of *Proviverra typica* (Mammalia, Hyaenodonta) and its impact on hyaenodont phylogeny and endocranial evolution. *Palaeontology*, 62(6), 983-1001.

Dubied, M., Solé, F., & Mennecart, B. 3D models related to the publication: The cranium of *Proviverra typica* (Mammalia, Hyaenodonta) and its impact on hyaenodont phylogeny and endocranial evolution. *MorphMuseuM*, 4, e74.

2020

Selden Jr, R. Z., Dockall, J. E., & **Dubied, M.** A quantitative assessment of intraspecific morphological variation in Gahagan bifaces from the southern Caddo area and central Texas. *Southeastern Archaeology*, 39(2), 125-145.

2021

Bonfante, B., Faux, P., Navarro, N., Mendoza-Revilla, J., **Dubied, M.**, Montillot, C., Wentworth, E., Poloni, L., Varon-Gonzalez, C., Jones, P., Xiong, Z., Fuentes-Guajardo, M., Palmal, S., Chacon-Duque, J.C., Hurtado, M., Villegas, V., Granja, V., Jaramillo, C., Arias, W., Barquera, R., Everardo-Martinez, P., Sanchez-Quinto, M., Gomez-Valdés, J., Villamil-Ramirez, H., Silva de Cerqueira, C.C., Hünemeier, T., Ramallo, V., Liu, F., Weinberg, S.M., Shaffer, J.R., Stergiakouli, E., Howe, L.J., Hysi, P.G., Spector, T.D., Gonzalez-José, R., Schüler-Faccini, L., Bortolini, M.-C., Acuna-Alonso, V., Canizales-Quinteros, S., Gallo, C., Poletti, G., Bedoya, G., Rothhammer, F., Thauvin-Robinet, C., Faivre, L., Costedoat, C., Balding, D., Cox, T., Kayser, M., Duplomb, L., Yalcin, B., Cotney, J., Adhikari, K. & Ruiz-Linares, A. A GWAS in Latin Americans identifies novel face shape loci, implicating VPS13B and a Denisovan introgressed region in facial variation. *Science advances*, 7(6), eabc6160.

Dubied, M., Solé, F., & Mennecart, B. Endocranum and ecology of *Eurotherium theriodis*, a European hyaenodont mammal from the Lutetian. *Palaeontologia Polonica*, 66(3).

Dubied, M., Solé, F., & Mennecart, B. 3D models related to the publication: Endocranum and ecology of *Eurotherium theriodis*, a European hyaenodont mammal from the Lutetian. *MorphMuseuM*, 4, e84.

Dubied, M., Montuire, S., & Navarro, N. Commonalities and evolutionary divergences of mandible shape ontogenies in rodents. *Journal of Evolutionary Biology*, 34(10), 1637-1652.

2022

Dubied, M., Montuire, S., & Navarro, N. Functional constraints channel mandible shape ontogenies in rodents. *Royal Society Open Science*, 9(220352), 220352.

2023

Montillot, C., Skutunova, E., **Dubied, M.**, Lahmar, A., Nguyen, S., Peerally, B., Prin, F., Duffourd, Y., Thauvin-Robinet, C., Duplomb, L., Wang, H., Ansar, M., Faivre, L., Navarro, N., Minocha, S., Collins, S.C. & Yalcin, B. Characterization of *Vps13b*-mutant mice reveals neuroanatomical and behavioral phenotypes with females less affected. *Neurobiology of Disease*, 106259.

Scientific communications

2017

4th YNHM (Young Natural History Scientists Meeting, Paris) **Dubied, M.**, Gilbert, C., Deléglise, M., Laurens, F. & Mennecart,B. Importance of Quatrehomme Collection (Monnaye Museum, Meung-sur-Loire) in the French Palaeontological landscape. Poster

APF (Association Paléontologique Française Congress, Dijon) **Dubied, M.**, Gilbert, C., Deléglise, M., Laurens, F. & Mennecart,B. Importance of Quatrehomme Collection (Monnaye Museum, Meung-sur-Loire) in the French Palaeontological landscape. Poster

2018

APF (Association Paléontologique Française Congress, Bruxelles) **Dubied, M.**, Solé, F., Le Verger, K. & Mennecart, B. Premier crâne partiel de l'espèce type de *Hyaenodon*, *H. leptorhynchus* (Mammalia, Hyaenodonta) – Réflexion sur la division des niches de mammifères carnassiers européens au cours du Paléogène. Talk

5th IPC (International Palaeontological Congress, Paris) **Dubied, M.**, Solé, F., Le Verger, K. & Mennecart, B. First partial cranium of the *Hyaenodon* type species, *H. leptorhynchus* (Mammalia, Hyaenodonta) – Consideration on the niche partitioning of the European carnivorous mammals during the Paleogene. Poster

2019

APF (Association Paléontologique Française Congress, Aix-en-Provence) **Dubied, M.**, Solé, F. & Mennecart, B. Contribution de la tomographie 3D à l'étude de l'endocrâne des Hyaenodonta. Talk

3rd ICCI (International Conference of Continental Ichnology, Saale) Fara, E., Moreau, J-D., Szewczyk, L., Venin, E., Klee, N., Verolet, M., Jiquel, S., **Dubied, M.** & Monna, F. Revisiting and exploring Middle-Late Triassic vertebrate tracksites in Ardèche (southern France). Poster

12th ICVM (International Congress of Vertebrate Morphology, Prague) **Dubied, M.**, Navarro, N. & Montuire, S. Dynamics of postnatal skull disparities in rodents. Poster

16th SGM (Swiss Geoscience Meeting, Fribourg) Mennecart, B., **Dubied, M.** & Solé, F. Talking about brain dead and a giant among the dwarfs: new data on the Swiss Hyaenodonta (Mammalia). Poster

2020

PlasPhen 2020 (GDR Plasticité Phénotypique, Online) **Dubied, M.**, Navarro, N. & Montuire, S. Postnatal changes in the rodents mandible at a macroevolutionary scale. Talk

1st Virtual Conference for Women ArcheoPaleo (Online) **Dubied, M.**, Navarro, N. & Montuire, S. Postnatal shape changes in the rodents mandible at a macroevolutionary scale. Talk

2021

FJC (Forum des Jeunes Chercheurs, Dijon) **Dubied, M.**, Navarro, N. & Montuire, S. Postnatal changes in the rodents mandible at a macroevolutionary scale. Talk

27th RST (Réunion Sciences Terre, Lyon) **Dubied, M.**, Solé, F., Ladèvèze, S. & Mennecart, B. Study of the endocast anatomy of two hyaenodonts: the large *Pterodon dayuroides* and the tiny *Thereutherium thylacodes* (Hyainailouroidea). Poster

2022

PalVert (PalaeoVertebrate group conference, Online) **Dubied, M.**, Postnatal development and evolution of the craniofacial complex in rodents. Talk

2023

APF (Association Paléontologique Française Congress, Villers-sur-Mer) **Dubied, M.**, Navarro, N. & Montuire, S. Postnatal development and evolution of the craniofacial complex in rodents. Talk

2024

SMEF (Morphometrics and Forms Evolution Symposium, Dijon) **Dubied, M.**, Montuire, S. & Navarro, N. Influence of food constraint on craniofacial ontogeny and covariation in rodents

SMEF (Dijon) Guillaumot, C., Sklab, Y., **Dubied, M.**, Laffont, R. & Navarro, N. A versatile deep learning approach to generalize landmark positioning. Talk

EuroEvoDevo2024 (Helsinki) **Dubied, M.**, Montuire, S. & Navarro, N. Influence of food constraint on craniofacial ontogeny and covariation in rodents. Talk

5th MVWG (5th Meeting of the ICAZ Microvertebrate Working Group, Warsaw) **Dubied, M.**, Navarro, N. & Montuire, S. Influence of food constraint on craniofacial ontogeny and covariation in rodents. Poster

5th MVWG (Warsaw) **Dubied, M.**, Navarro, N. & Montuire, S. Macroevolutionary postnatal growth and mandible shape changes in rodents. Talk

Teaching

University Year	Grade	Course	Effective hours
2018/2019	L1 SVTE	TP/TD Palaeontology	40
	L1 SVTE	TD Earth Sciences	24
2019/2020	L1 SVTE	TP/TD Palaeontology	30
	L1 SVTE	Analysis of biological geological data	22
	L1 SVTE	Laboratory and fields practicals	16
	M2 SP2G	Data processes ans analysis / Introduction to R	9
2020/2021	M2 SEME	Field in wetland	6
	M2 SP2G	Data processes ans analysis / Introduction to R	9
		Total	156 hours

- L1 SVTE (First year of Life, Earth and Environnement Sciences Licence)
- M2 SP2G (Second year of Sedimentology, Palaeontology, Geochemistry, Georesources Master degree)
- M2 SEME (Second year of Soil, Water, Habitats, Environnement Master degree)
- TP/TD Palaeontology: Drawing and description of specimens representing the major groups of invertebrates related to the study of biological crises on the scale of geological time
- TD Earth Sciences: Initiation to earth and universe sciences
- Analysis of biological and geological data: Approach to data analysis methods on naturalistic samples. Statistics and probabilities.
- Laboratory and fields practical: Highlighting the importance of sampling methods and their biases.
- Data processes and analyses, Introduction to R: Multivariate analyses and introduction to statistical programming on R.
- Field in wetland: Reconstruction of methods for restoring and maintaining a wetland and its biodiversity. Study of the ecological, societal and economic impact of the maintenance of these areas with the Jura wetlands as an example.

Supervision

Elrick Tachet-Pépin (2022 - M2 SP2G - University of Burgundy) Morphological characterisation of the gastropod molluscs' shells: approaches, interests, limits and prospects.

Ellaury Hommey (2024 - L3 Life and environment sciencs - University of Franche-Comté Belfort) Morphometric variations in the ossicles of the middle ear in different species of rodents.

Pierre Perrotto (2024 - L2 Organismal biology - University of Burgundy) Initiation to geometric morphometrics.