

Liste de publications de Alain Préat

Ouvrages publiés à titre de seul auteur (5)

2000

1. Préat, A. (2000). *Itinéraire Nature 4: "Au Pays des Gorges bleues" (En voiture entre Bernissart, Boussu, Saint-Ghislain et Thieu, Mons, Hainaut).*

1999

2. Préat, A. (1999). *Itinéraire Nature 3: A la recherche de la Croix d'Escaille.*

1998

3. Préat, A. (1998). *Itinéraire Nature 3: "En passant par la Lorraine" (A pied entre Vance, Sampont et Heinsch (Arlon-Luxembourg).*

1996

4. Préat, A. (1996). *Itinéraire Nature 3: "Au Pays du Roi des Cailles" (A pied entre Soulme, Romedenne et Vodélé, Philippeville-Namur)".*
5. Préat, A. (1996). *Parcours géologiques en Ardenne belge.*

Ouvrages publiés en collaboration (1)

1995

6. Préat, A., & Bertrand, M. (1995). *L'évolution des espèces biologiques est-elle prédictible?: Apport de la géologie (paléontologie).*

Parties d'ouvrages collectifs (30)

2015

7. Kolo, K., Konhauser, K., Prian, J.-P., & Préat, A. (2015, janvier). Probable fungal colonization and carbonate diagenesis of neoproterozoic stromatolites from South Gabon, Western Congo Basin In *Geology and Resource Potential of the Congo Basin* (pp. 77-96). Springer Berlin Heidelberg. doi:10.1007/978-3-642-29482-2_5

Abstract: A petrographic and SEM study of fresh Neoproterozoic carbonate stromatolites from the old Mouila quarry in South Gabon reveals abundant micrometer-sized solution cavities infilled with 0.1-3.0 μm -thick filamentous microbe-like structures, rhombohedral dolomite and quadratic-shaped dolomite crystals that may originally have been oxalates. The filaments appear entangled within an amorphous, organic matrix reminiscent of microbial extracellular polysaccharides (EPS), to which a number of small (0.5 μm) spherical grains of dolomite are attached. A number of characteristic fungal features are evident, including per-mineralized (now dolomitic) sporangia attached to their sporangiophores, dichotomous hyphae, columella, sporangial wall ornamentation, probable spore masses, and ghost traces of fungal remains. In one instance a mineralized zygosporangium with suspensors appears totally embedded in the matrix. Detailed observation of the solution cavities suggests three distinct stages of formation: (1) incipient fungal colonization, physical penetration of primary carbonate grains boundaries by penetrating fungal stolons, (2) EPS production, organic acid dissolution and neomineral formation on crystal boundaries, and (3) an advanced weathering

stage where well-developed cavities form with flanking dolomite 'collars'. Based on the observations that the cavities and fungi are stratigraphically confined to the same depths; there is no compaction, no grain interpenetration, or collapse of the former sulfate or microenterolithes (i.e., very rapid dolomitization); thin, delicate laminae in the stromatolites are well preserved; and oxygen isotope data which indicate penecontemporaneous dolomite with no post-depositional meteoric fluid interaction, all imply that the weathering features occurred during, or immediately after, dolomite formation. Similar diagenetic morphostructures were reproduced in vitro through fungal interaction with the fine-grained dolomite of Terwagne Formation (Viséan, France) used as a substrate. The results strongly suggest that Precambrian fungi played a role in post-depositional alteration of stromatolites, and importantly, may provide early physical evidence for fungi in the rock record.

8. Delpomdor, F., & Préat, A. (2015, janvier). Overview of the Neoproterozoic sedimentary series exposed along margins of the Congo Basin In *Geology and Resource Potential of the Congo Basin* (pp. 41-58). Springer Berlin Heidelberg. doi:10.1007/978-3-642-29482-2_3

Abstract: The Congo Shield is a central African large landmass with several Archean nuclei welded during the Eburnean orogeny approx. 2.1-1.8 Ga and subsequently stabilized as a coherent unit throughout late Paleoproterozoic to Meso-Neoproterozoic times. The early Neoproterozoic was marked by rifting along the margins of the Congo Shield related to the break-up of Rodinia at about 1.0 Ga, and opening of the Adamastor Ocean, followed by passive margin-type sedimentation and, finally, foreland basin deposition during the amalgamation of Gondwanaland initiated at approximately 600 Ma. We summarize the present knowledge of the lithostratigraphy of the Neoproterozoic basins exposed along margins of the Congo Basin in an attempt to establish chronostratigraphic correlations between these isolated basins in the Democratic Republic of Congo and neighboring countries.

9. Delpomdor, F., Blanpied, C., Virgone, A., & Préat, A. (2015, janvier). Sedimentology and sequence stratigraphy of the late Precambrian carbonates of the Mbuji-Mayi supergroup in the Sankuru-Mbuji-Mayi-Lomami-Lovoy basin (Democratic Republic of the Congo) In *Geology and Resource Potential of the Congo Basin* (pp. 59-76). Springer Berlin Heidelberg. doi:10.1007/978-3-642-29482-2_4

Abstract: The late Mesoproterozoic-middle Neoproterozoic carbonate succession (1155 Ma-800 Ma) of the Mbuji-Mayi Supergroup (Democratic Republic of Congo) represents a classic late Precambrian carbonate sequence whose architecture is poorly known. Here we present new data and synthesis of microfacies analysis, sequence stratigraphy, Fischer plots coupled with C and O isotopes, to evaluate the paleoecology and sea level variations of the carbonate series of the Mbuji-Mayi Supergroup, and to establish hierarchical approach stratigraphic framework from which to resolve the evolution of the Sankuru-Mbuji-Mayi-Lomami-Lovoy Basin. Our microfacies and sequence stratigraphy analyses show that the carbonate succession consists of strata accumulated on a ramp, during cyclic sedimentation across the inner ramp. Here plurimetric 'thin' peritidal cycles (± 4 m-thick on average) record a relative maximum sea level of ca. 4 m, with fluctuations in the range around 1-4 m. This shallow-water depth and the abundance of cyanobacteria suggest that water column was oxygenated. By contrast the subtidal cyclic facies at the outer/middle ramp, preserve 'thick' subtidal sequences characterized by an average thickness of ± 17 m. Accurate relative sea level fluctuations are difficult to assess in this 'deeper' environment since the facies could have been deposited in a wide range of shallow water that did not completely fill the accommodation space or available space. A probable magnitude for sea-level fluctuations here is around 10-20 m. These data are the first to place a quantitative constraint on the late Mesoproterozoic to middle Neoproterozoic carbonate deposits that have lively covered much of the

Congo Shield at the end of the Precambrian, and is therefore an important type section for Central Africa.

2011

10. Tait, J., Delpomdor, F., Préat, A., Tack, L., Straathof, G., & Kanda, V. (2011). Neoproterozoic Sequences of the West Congo and Lindi/Ubangi Supergroups in the Congo Craton, Central Africa In E. Arnaud, G. Halverson, & G. Shields-Zhou (Eds.), *The Geological Record of Neoproterozoic glaciations* (pp. 185-194). (Geological Society of London, Memoirs, 36).
11. Préat, A., Delpomdor, F., Kolo, K., Gillan, D., & Prian, J. (2011). Stromatolites and cyanobacterial mats in peritidal evaporative environments in the Neoproterozoic of Bas-Congo (Democratic Republic of Congo) and South Gabon In J. Seckbach & V. Tewari (Eds.), *Stromatolites: Interaction of microbes with sediments* (pp. 43-63). Springer Verlag. (Cellular Origin, Life in Extreme Habitats and Astrobiology).
12. Préat, A., De Jong, J., & De Ridder, C. (2011). Possible Fe isotope fractionation during microbiological processing in ancient and modern marine environments In J. Seckbach & V. Tewari (Eds.), *Stromatolites: Interaction of microbes with sediments* (pp. 651-673). Springer Verlag. (Cellular Origin, Life in Extreme Habitats and Astrobiology).

2010

13. Tait, J., Delpomdor, F., Préat, A., Tack, L., Straathof, G., & Kanda, V. (2010). Neoproterozoic Sequences of the West Congo and Lindi/Ubangi Supergroups in the Congo Craton, Central Africa In E. Arnaud, G. Halverson, & G. Shields-Zhou (Eds.), *The Geological Record of Neoproterozoic glaciations*. London: Geological Society of London.

2009

14. Bouton, P., Thieblemont, D., Simo Ndounze, S., Goujou, J., Kassadou, A., Walemba, A., Boulingui, B., Ekogha, H., Moussavou, M., Lambert, A., Roberts, D., Deschamps, Y., & Préat, A. (2009). Feuille Franceville - Boumango In *Carte géologique de la République du Gabon à 1/200000*. Libreville: Editions DGMG - Ministère des Mines, du Pétrole, des Hydrocarbures.
15. Thieblemont, D., Prian, J., Goujou, J., Gouin, J., Tegye, M., Cocherie, A., Guerrot, C., Préat, A., Boulingui, B., Ekogha, H., & Kassadou, A. (2009). Feuille Fougamou: Notice explicative In *Carte géologique de la République du Gabon à 1/200000*. Libreville: DGMG, Ministère des Mines, du pétrole, des hydrocarbures.
16. Bouton, P., Thieblemont, D., Gouin, J., Cocherie, A., Guerrot, C., Tegye, M., Préat, A., Simo Ndounze, S., Kassadou, A., Boulingui, B., & Ekogha, H. (2009). Feuille Franceville – Boumango: Notice explicative In *Carte géologique de la République du Gabon à 1/200000*. Libreville: Editions DGMG - Ministère des Mines, du Pétrole, des Hydrocarbures.
17. Bouton, P., Thieblemont, D., Simo Ndounze, S., Agenbacht, A., Walemba, A., Moussavou, M., Lambert, A., Deschamps, Y., & Préat, A. (2009). Feuille Okondja In *Carte géologique de la République du Gabon à 1/200000*. Libreville: Editions DGMG - Ministère des Mines, du Pétrole, des Hydrocarbures.
18. Bouton, P., Thieblemont, D., Gouin, J., Cocherie, A., Guerrot, C., Tegye, M., Préat, A., Simo Ndounze, S., & Moussavou, M. (2009). Feuille Okondja: Notice explicative In *Carte*

géologique de la République du Gabon à 1/200000. Libreville: Editions DGMG - Ministère des Mines, du Pétrole, des Hydrocarbures.

19. Prian, J., Thieblemont, D., Préat, A., Cocherie, A., Guerrot, C., Goujou, J., Ekogha, H., & Simo Ndounze, S. (2009). Feuille Ndendé: Notice explicative In *Carte géologique de la République du Gabon à 1/200000*. Libreville: Editions DGMG - Ministère des Mines, du Pétrole, des Hydrocarbures.
20. Prian, J., Thieblemont, D., Préat, A., Walemba, A., Simo Ndounze, S., Goujou, J., Ekogha, H., & Kassadou, A. (2009). Feuille Ndendé In *Carte géologique de la République du Gabon à 1/200000*. Libreville: Editions DGMG - Ministère des Mines, du Pétrole, des Hydrocarbures.
21. Thieblemont, D., Castaing, D., Billa, M., Bouton, P., & Préat, A. (2009). Notice explicative In *Carte géologique et des Ressources minérales de la République gabonaise à 1/1 000 000* (p. 384). Libreville: Editions DGMG - Ministère des Mines, du Pétrole, des Hydrocarbures.

2008

22. Mamet, B., & Préat, A. (2008). Algues et microproblématiques du Givétien In *Mémoire 'Patrimoine géologique, Stratotypes français'*. Paris: Muséum National d'Histoire Naturelle.

2007

23. Mamet, B., & Préat, A. (2007). Eifelian-Givetian stromatoporoid-coral reefs, Belgium: Chapter Devonian In E. Vennin, M. Aretz, F. Boulvain, & A. Munnecke (Eds.), *Facies from Paleozoic reefs and bioaccumulations* (pp. 191-193). Paris.(Mémoire du Muséum National d'Histoire Naturelle).

2005

24. Yans, J., Préat, A., Grassineau, N., Verniers, J., & Vanmeirhaeghe, J. (2005). New evidence for the Hirnantian (Upper Ordovician) in Belgium?: An integrated isotopic, biostratigraphical and sedimentological approach In P. Steemans & E. Javaux (Eds.), *Paléopalynologie et Paléobotanique du Précambrien au Paléozoïque: Carnets de Géologie -Notebooks on Geology* (p. 25). Brest.

2003

25. Préat, A., Kolo, K., Mamet, B., Gorbushina, A., & Gillan, D. (2003). Fossil and subrecent fungal communities in three calcretes series from the Devonian of the Canada Rocky Mountains, Carboniferous of northern France and Cretaceous of Central Italy In W. Krumbein, D. Paterson, & G. Zavarzin (Eds.), *Fossil and recent Biofilms: A natural History of Life on Earth* (p. 480). Dordrecht: Kluwer.

2002

26. Préat, A. (2002). L'énergie d'aujourd'hui et de demain: le point de vue d'un géologue? In *La Science et la Ville*. Bruxelles: Université Libre de Bruxelles.

2000

27. Préat, A. (2000). Le temps plus fort que roc (détérioration des pierres et des monuments publics) In *La ville, un milieu vivant* (Fondation Lucia de Brouckère pour la diffusion des Sciences ed., pp. 24-25). Université Libre de Bruxelles.

1999

28. Préat, A., & Africano, F. (1999). Contexte géologique de la dégradation des monuments: exemples de l'église Notre-Dame du Sablon à Bruxelles In *La Science et la Ville'* (Fondation Lucia De Brouckère pour la Diffusion des Sciences ed., pp. 33-44). Université Libre de Bruxelles.

1997

29. Mamet, B., & Préat, A. (1997). Geology of Belgium In E. Moores & R. Fairbridge (Eds.), *Encyclopedia of Earth Science Series: European and Asian Regional Geology* (pp. 78-83). Chapman & Hall.

1994

30. Préat, A., & Mennig, J. (1994). Reservoir modeling: Poulseur/CBA, Data Acquisition and Digitization In *Modeling the Earth for Oil Exploration* (pp. 56-60). Pergamon: Commission of the European Communities, DGXII, Science, Research and Development.
31. Préat, A., & Mennig, J. (1994). Reservoir modeling: the Poulseur/Bois d'Anthisnes quarries In *Modeling the Earth for Oil Exploration* (pp. 39-43). Pergamon: Commission of the European Communities, DGXII, Science, Research and Development.
32. Galli, C., Préat, A., & Ravenne, C. (1994). Reservoir modeling: Poulseur/CBA, the reference Model In *Modeling the Earth for Oil Exploration* (pp. 91-96). Pergamon: Commission of the European Communities, DGXII, Science, Research and Development.

1992

33. Préat, A. (1992). Les bassins sédimentaires: un exemple de modification de l'espace au cours des temps géologiques In *L'espace* (Texte publié par la Faculté des Sciences de l'ULB et la Fondation Lucia De Brouckère (ULB) pour la Diffusion des Sciences sur le thème: "L'espace"; 4 figs ed., pp. 41-56). Université Libre de Bruxelles.

1991

34. Préat, A., & Tourneur, F. (1991). Formations d'Hanonet, de Trois-Fontaines, des Terres d'Hairs et du Mont d'Hairs. In L. Dejonghe (Ed.), *Les Formations du Dévonien Moyen de la Belgique*. (pp. 45-59). Commission Nationale de Stratigraphie du Dévonien.
35. Coen-Aubert, M., Mamet, B., Préat, A., & Tourneur, F. (1991). Sédimentologie, paléoécologie et paléontologie des calcaires crinoïdiques au voisinage de la limite Eifélien- Givétien à Wellin (bord sud du Synclinorium de Dinant). In *Mém. Expl. Cartes Géol et Minières Belgique* (p. 61). Bruxelles: Ministère des Affaires Economiques.

1990

36. Préat, A. (1990). L'énergie dans la matière à travers les temps: Apport de la géologie In *Matière, énergie, temps* (Texte publié par la Faculté des Sciences de l'ULB et la Fondation Lucia De Brouckère (ULB) pour la Diffusion des Sciences sur le thème: "Matière, Energie, Temps". 2figs, 1tabl ed., pp. 43-51). Université Libre de Bruxelles.

Articles dans des revues avec comité de lecture (155)

2018

37. Delpomdor, F., Schröder, S., Préat, A., Lapointe, P., & Blanpied, C. (2018, mars). Sedimentology and chemostratigraphy of the late neoproterozoic carbonate ramp sequences of the hüttenberg formation (northwestern Namibia) and the C5 formation (western central democratic republic of congo): Record of the late post-Marinoan marine transgression on the margin of the congo craton *South African journal of geology*, 121(1), 23-42. doi:10.25131/sajg.121.0003

Abstract: The Neoproterozoic Marinoan climatic event corresponded to the Snowball Earth-type glaciation, and is commonly marked by the deposition of diamictites and by a negative carbon isotope anomaly. This event was followed by a sudden return to a greenhouse climate and a rapid post-glacial transgression with deposition of cap carbonates. Although the cap carbonates and marine carbonate sediments at the base of the post-glacial period are well known in the literature, few studies focused on the end of the marine transgression, which is a prelude to the Pan African Orogeny in Central Africa. In this paper, we present new descriptions of these carbonate rocks and a sedimentological study from key cores and outcrops in the Otavi Mountainland (Namibia) and West Congo belt (DRC) of the Hüttenberg Formation and the C5 Formation, respectively. Both successions show five main facies: (i) microbial 'mounds' and pinnacles; (ii) ooid-shoal barrier; (iii) evaporitic brackish lagoon; (iv) beach and (v) coastal sabkha. The Hüttenberg Formation consists of an open-marine mid-inner carbonate ramp setting including microbial mounds and pinnacles, and oolitic shoal-barrier Islands. The C5 Formation exhibits a hypersaline inner carbonate ramp including an ooid shoal barrier, an evaporitic brackish lagoon, a beach and a coastal sabkha plain. Sedimentological, chemostratigraphical and biostratigraphical comparisons between the C5 and Hüttenberg formations suggest these are coeval carbonate shelf deposits on the margins of the Congo Craton, with a depositional age between 580 Ma and 540 Ma for both formations.

38. Delpomdor, F., Bonneville, S., Baert, K., & Préat, A. (2018, janvier). AN INTRODUCTION TO THE PRECAMBRIAN PETROLEUM SYSTEM IN THE SANKURU-MBUJI-MAYI-LOMAMI-LOVOY BASIN, SOUTH-CENTRAL DEMOCRATIC REPUBLIC OF CONGO *Journal of petroleum geology*, 41(1), 5-27. doi:10.1111/jpg.12690

Abstract: This study presents a preliminary assessment of the petroleum potential of the Meso-Neoproterozoic Mbuji-Mayi Supergroup in the Sankuru-Mbuji-Mayi-Lomami-Lovoy Basin in the southern-central Democratic Republic of Congo. This basin is one of the least explored in Central Africa and is a valuable resource for the evaluation of the petroleum system in the greater Congo Basin area. Highly altered carbonates (potential reservoir rocks) and black shales (potential source rocks) are present in the Mbuji-Mayi Supergroup, which can be divided into the BI and overlying BII groups (Stenian and Tonian, respectively). For this study, samples of the BIe to BIle subgroups from five boreholes and two outcrops were evaluated with petrographic, petrophysical and geochemical analyses. Carbonates in the BIe to BIle subgroups with reservoir potential include oolitic packstones and grainstones, stromatolitic packstones and boundstones, various dolostones, and brecciated and zoned limestones. Thin section studies showed that porosity in samples of these carbonates is mainly vuggy and mouldic with well-developed fractures, and secondary porosity is up to 12%. Black shales in the BIle subgroup have TOC contents of 0.5–1%, and the organic matter is interpreted to have been derived from precursor Type I / II kerogen. The thermal maturity of asphaltite in carbonate samples is indicated by Raman spectroscopy-derived palaeo-temperatures which range from #150 to #260°C, which is typical of low-grade metamorphism. Raman reflectance (R_{mcRo}%) values on asphaltite samples were between 1.0 and 2.7%, indicating mature organic matter corresponding to the oil and wet gas windows. Source rock maturation and primary oil migration are interpreted to have occurred during Lufilian deformation (650–530 Ma). The solid asphaltite present in fractures in the dolostones of the BIle subgroup may represent biodegraded light oil from an as-yet unknown source which probably migrated during the Cambrian-Ordovician (#540–480 Ma). This migration event may have been related to the effects of the peak phase of Lufilian deformation in the Katanga Basin to the SE. This study is intended to provide a starting-point for more detailed evaluations of

potential hydrocarbon systems in the Sankuru-Mbuji-Mayi-Lomami-Lovoy Basin and the adjacent greater Congo Basin area.

39. Préat, A., Delpomdor, F., Ackouala Mfere, A. P., & Callec, Y. (2018, janvier). Paleoenvironments, #13C and #18O signatures in the Neoproterozoic carbonates of the Comba Basin, Republic of Congo: Implications for regional correlations and Marinoan event *Journal of African earth sciences*, 137, 69-90. doi:10.1016/j.jafrearsci.2017.09.002

Abstract: The Ediacaran Schisto-Calcaire Group is a #1300 m-thick succession belonging to the West Congo Supergroup in Central Africa. In the Comba Basin, it consists of three carbonate-dominated units defined as formations (SCI to SCIII) that are unconformably overlain by clastic deposits (Mpioka Group) interpreted as a molassic formation associated with the Panafrican Orogen. The underlying Upper Tillite and Cap Carbonate (SCIIa) units, considered as markers of the Snowball Earth event were studied in three sections. We investigated the carbonates of the Schisto-Calcaire Group by defining new microfacies (MF1-MF7) and we performed C and O isotopic analyses in order to constraint the depositional and diagenetic events directly after the Marinoan interval. Stratigraphic variations of the stable isotopes are important in the series with lighter #18O values (>1.5‰) than those of the Neoproterozoic ocean in the SCIIc unit. According to regional stratigraphy a temperature effect can be dismissed and a freshwater surface layer is the origin of such negative #18O values in this unit. The negative #13C anomaly (#3.5‰ on average) of the Cap Carbonate is similarly to the #18O values (#6.4‰ on average) in the range of the marine domain during postglacial sea level rise. The sample suite as a whole (SCII and SCIII formations) displays heavier #18O and #13C than those of the lower part (SCI unit) of the Schisto-Calcaire Group. The comparison with the Lower Congo (Democratic Republic of Congo) and Nyanga (Gabon) basins shows that the meteoric flushing in SCIIc unit of the Schisto-Calcaire Group was regional and not local, and could be derived from a climatic evolution. Although an overall overprint is present, our isotopic relationships argue against overall diagenetic resetting of primary compositions and suggest that with careful examination combined with detailed petrographic analysis general depositional and diagenetic controls can be discerned in oxygen and carbon isotopic data in the Schisto-Calcaire Group.

https://dipot.ulb.ac.be/dspace/bitstream/2013/268453/1/Elsevier_252080.pdf

40. Delpomdor, F., Van Vliet, N., Devleeschouwer, X., Tack, L., & Préat, A. (2018, janvier). Evolution and estimated age of the C5 Lukala carbonate-evaporite ramp complex in the Lower Congo region (Democratic Republic of Congo): New perspectives in Central Africa *Journal of African earth sciences*, 137, 261-277. doi:10.1016/j.jafrearsci.2017.10.021

Abstract: New detailed lithological, sedimentological, chemostratigraphic data were obtained from exploration drilling samples on the C5 carbonate-dominated formation of the Neoproterozoic Lukala Subgroup (former Schisto-Calcaire Subgroup) from the West Congo Belt (WCB) in the Democratic Republic of Congo. This formation records the last post-Marinoan sea-level events that occurred in the whole basin, followed by the development of the Araçuaí-West Congo Orogen between 630 and 560 Ma. The C5 Formation consists of back-reef lagoonal and peritidal/sabkha cycles of #2.0 m in thickness, that record a short-time marine regression, rapidly flooded by a marine transgression with deposition of organic-rich argillaceous carbonates or shales under dysoxia and anoxia conditions. These dysoxic/anoxic waters were rapidly followed by a regional-scale marine transgression, favouring mixing with well-oxygenated waters, and the development of benthic Tonian to Cambro-Ordovician *Obruchevella parva*-type 'seagrasses' in the nearshore zones of the lagoons. New #13C and 87Sr/86Sr isotopic data in the C5 Formation of the Lukala Subgroup are used in the frame of a correlation with the Sete Lagoas Formation in Brazil. Relatively comparable negative to positive #13C excursions point to marine flooding of the whole basin and allow extension of the debatable Late Ediacaran age of the uppermost Sete Lagoas and C5 formations. Sr isotope "blind dating" failed due to low Sr concentration related to a dolomitization event close 540 Ma. Several tentative datings of the C5 Formation converge to a Late Ediacaran age ranging between 575 and 540 Ma.

As the overlying Mpioka folded Subgroup, the C5 series suffered the Pan African deformation, dated at 566 ± 42 Ma. Unlike the previously generally accepted interpretation, our data suggests that the Mpioka Subgroup was deposited in the Early Cambrian.

https://dipot.ulb.ac.be/dspace/bitstream/2013/269760/1/Elsevier_253387.pdf

2017

41. Casier, J.-G., Maillet, S., & Préat, A. (2017, septembre). Ostracods and rock facies across the Emsian/Eifelian boundary at Couvin (Dinant Synclinorium, Belgium) *Palaeobiodiversity and Palaeoenvironments*, 97(3), 439-448. doi:10.1007/s12549-016-0236-1

Abstract: A moderately rich ostracod fauna is reported from the upper part of the St. Joseph Formation (Fm), the Eau Noire Fm and the lower part of the Couvin Fm in the Eau Noire section located nearby Couvin. The section that crosses the Emsian/Eifelian boundary belongs entirely to the Couvinian historical stage. The ostracod fauna observed appertains to the Eifelian Mega-Assemblage and is indicative, in the Eau Noire Fm and in the Couvin Fm, of continuous shallow open-marine environments close to the fair-weather wave-base. The sampling and the number of ostracods extracted from the St. Joseph Fm are not sufficient to make environmental inferences and the study does not demonstrate an abnormal change in the ostracod fauna neither in relation with the Eau Noire Fm/Couvin Fm boundary, nor in relation with the Emsian/Eifelian boundary. The ostracods present near the Emsian/Eifelian boundary are mentioned for the first time in the southern border of the Dinant Synclinorium and they display close relations with the Eifel Mountains (Germany) and the Holy Cross Mountains (Poland).

42. Delpomdor, F., Devleeschouwer, X., Spassov, S., & Préat, A. (2017, avril). Stratigraphic correlations in mid- to late-Proterozoic carbonates of the Democratic Republic of Congo using magnetic susceptibility *Sedimentary geology*, 351, 80-101. doi:10.1016/j.sedgeo.2017.02.007

Abstract: In this paper, we have tested the application of magnetic susceptibility measurements in Cu-Ag-Zn-Pb-(Fe)-mineralized carbonates of the Ble subgroup (Democratic Republic of Congo) as an efficient tool for regional and global high-resolution stratigraphic correlations in the Neoproterozoic marine carbonates. To achieve this goal, we integrate the low-field magnetic susceptibility (XLF) data with facies analyses, geochemistry and isotope stratigraphy. The microfacies analyses of two cores, Tshinyama#S70 and Kafuku#15, drilled in the early Neoproterozoic carbonates of the Mbuji-Mayi Supergroup reveal a deep carbonate ramp setting associated with a microbial/stromatolitic mid-ramp environment. High-resolution stratigraphic correlations using magnetic susceptibility and C-isotope curves established for both cores, 190 km apart, suggest a sedimentary hiatus at the base of the Tshinyama#S70 succession. C-O and Sr isotopes and Sr/Ca and Fe abundances show that a diagenetic meteoric overprint affected the series of the Tshinyama#S70 core and a thermal effect related to mineralizing fluids affected the Kafuku#15 core carbonates.

https://dipot.ulb.ac.be/dspace/bitstream/2013/249641/1/Elsevier_233268.pdf

43. Delpomdor, F., Tack, L., & Préat, A. (2017). Facies and micromorphology of the Neoproterozoic Upper Diamictite Formation in the Democratic Republic of Congo: New evidence of sediment gravity flow *Geologica Belgica*, 20(1-2), 69-79. doi:10.20341/gb.2017.004

Abstract: The Upper Diamictite Formation of the West Congo Supergroup is a diamictite-dominated succession variously interpreted as a continental tillite, glaciomarine, and glacially-influenced or non-glacial debrite. This paper presents a detailed macro and microscale analysis of soft-sediment deformation structures in order (1) to resolve the long-standing debate on the genetic

origin of the Upper Diamictite Formation, and (2) to constrain the paleoenvironmental conditions during the Marinoan global event. The predominance of ductile and brittle deformations and grain-to-grain compression, considered as evidence of high strain rates and local high stress conditions, indicate that the diamictites were deposited as mass flows. The presence of probable pelagic clays, limestones, and the absence of direct ice-contact deposits point to a subaqueous gravity flow origin. These diamictites were deposited along the margin or at the foot of the basin slope. They were probably triggered by oversteepening and/or tectonic shocks in the Araçuaí-West Congo Orogen between 630 and 660 Ma. The Upper Diamictite Formation provides no support for the postulated global Marinoan glaciation at this time and underscores the importance of a local tectonic control on the sedimentation.

2016

44. Barale, L., Bertok, C., Salih Talabani, N., d'Atri, A., Martire, L., Piana, F., & Pr at, A. (2016, d cembre). Very hot, very shallow hydrothermal dolomitization: An example from the Maritime Alps (north-west Italy–south-east France) *Sedimentology*, 63(7), 2037-2065. doi:10.1111/sed.12294

Abstract: In the Maritime Alps (north-west Italy – south-east France), the Middle Triassic–lowermost Cretaceous platform carbonates of the Provenal Domain locally show an intense dolomitization. Dolomitized bodies, irregularly shaped and variable in size from some metres to hundreds of metres, are associated with tabular bodies of dolomite-cemented breccias, cutting the bedding at a high angle, and networks of dolomite veins. Field and petrographic observations indicate that dolomitization was a polyphase process, in which episodes of hydrofracturing and host-rock dissolution, related to episodic expulsion of overpressured fluids through faults and fracture systems, were associated with phases of host-rock dolomitization and void cementation. Fluid inclusion analysis indicates that dolomitizing fluids were relatively hot (170 to 260°C). The case study represents an outstanding example of a fossil hydrothermal system, which significantly contributes to the knowledge of such dolomitization systems in continental margin settings. The unusually favourable stratigraphic framework allows precise constraint of the timing of dolomitization (earliest Cretaceous) and, consequently, direct evaluation of the burial setting of dolomitization which, for the upper part of the dolomitized succession, was very shallow or even close to the surface. The described large-scale hydrothermal system was probably related to deep-rooted faults, and provides indirect evidence of a significant earliest Cretaceous fault activity in this part of the Alpine Tethys European palaeomargin.

45. Barale, L., Bertok, C., Salih Talabani, N., d'Atri, A., Martire, L., Piana, F., & Pr at, A. (2016, d cembre). Very hot, very shallow hydrothermal dolomitization: An example from the Maritime Alps (north-west Italy–south-east France) *Sedimentology*, 63(7), 2037-2065. doi:10.1111/sed.12294

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46. Delpomdor, F., Eyles, N., Tack, L., & Pr at, A. (2016, septembre). Pre- and post-Marinoan carbonate facies of the Democratic Republic of the Congo: Glacially- or tectonically-influenced deep-water sediments? *Palaeogeography, palaeoclimatology, palaeoecology*, 457, 144-157. doi:10.1016/j.palaeo.2016.06.014

Abstract: The upper carbonate-rich parts of the West Congo Supergroup (~1000-560 Ma) from the Democratic Republic of the Congo have hitherto been considered as a record of abrupt eustatic and climatic events accompanying glaciation and deglaciation of a Snowball Earth-type Marinoan ice age that was of global extent. These strata have however never been investigated in detail. Results of new sedimentological work at key outcrops over a 1300 km outcrop belt show that pre- and post-Marinoan carbonates are respectively, storm-influenced sediments deposited principally in a midouter-ramp setting, and deep-water slope carbonates (calicturbidites) representing a lobe-fringe or levee-overbank setting. The Upper Diamictite Formation held previously by some to be a subglacial tillite, comprises gravity flows (debrites) deposited in deep water below wave base along the unstable margins of a carbonate ramp. A direct glacial influence on sedimentation for diamictites or any accompanying facies cannot be readily identified. Sedimentary facies reported here primarily record the presence of deep-water submarine to alluvial fan systems related to extensional tectonic processes of the central-southern Maca bas Basin (now located in Brazil) between 700 Ma and 660 Ma followed by the 630-Ma onset of the pre-collisional magmatic arc in the Ara ua -West Congo Orogen. No extreme short-lived climatic or eustatic events of a Snowball Earth-type ice age are recorded in the studied succession, which primarily reflects longterm overriding regional tectonic controls resulting in diachronous sedimentation along the western margin of the Congo Craton. https://dipot.ulb.ac.be/dspace/bitstream/2013/237093/1/Elsevier_220720.pdf

47. Mansurbeg, H., Pr at, A., Koyi, H., Morad, D., Othman, R., Morad, S., Ceriani, A., Al-Aasm, I., Kolo, K., Spirov, P., & Proust, J. N. (2016, juillet). Hydrothermal dolomitization of the Bekhme formation (Upper Cretaceous), Zagros Basin, Kurdistan Region of Iraq: Record of oil migration and degradation *Sedimentary geology*, 341, 147-162. doi:10.1016/j.sedgeo.2016.05.015

Abstract: The common presence of oil seepages in dolostones is widespread in Cretaceous carbonate successions of the Kurdistan Region of Iraq. This integrated field, petrographic, chemical, stable C, O and Sr isotopes, and fluid inclusion study aims to link dolomitization to the origin and geochemical evolution of fluids and oil migration in the Upper Cretaceous Bekhme carbonates. Flux of hot basinal (hydrothermal) brines, which is suggested to have occurred during the Zagros Orogeny, resulted in dolomitization and cementation of vugs and fractures by coarse-crystalline saddle dolomite, equant calcite and anhydrite. The saddle dolomite and host dolostones have similar stable isotopic composition and formed prior to oil migration from hot (81–115  C) basinal NaCl–MgCl₂–H₂O brines with salinities of 18–22 wt.% NaCl eq. The equant calcite cement, which surrounds and hence postdates saddle dolomite, has precipitated during oil migration from cooler (60–110  C) NaCl–CaCl₂–H₂O brines (14–18 wt.% NaCl eq). The yellowish fluorescence color of oil inclusions in the equant calcite indicates that the oil had API gravity of 15–25  composition, which is lighter than present-day oil in the reservoirs (API of 10–17 ). This difference in oil composition is attributed to oil degradation by the flux of meteoric water, which is evidenced by the low $\delta^{13}\text{C}$ values ($\delta^{13}\text{C}$ 8.5  to $\delta^{13}\text{C}$ 3.9  VPDB) as well as by nil salinity and low temperature in fluid inclusions of late columnar calcite cement. This study demonstrates that linking fluid flux history and related diagenesis to the tectonic evolution of the basin provides important clues to the timing of oil migration, degradation and reservoir evolution.

https://dipot.ulb.ac.be/dspace/bitstream/2013/236848/1/Elsevier_220475.pdf

2015

48. Delpomdor, F., Tack, L., Cailteux, J. L. H. J., & Préat, A. (2015, octobre). The C2 and C3 formations of the Schisto-Calcaire Subgroup (West Congo Supergroup) in the Democratic Republic of the Congo: An example of post-Marinoan sea-level fluctuations as a result of extensional tectonisms *Journal of African earth sciences*, 110, 14-33. doi:10.1016/j.jafrearsci.2015.06.005

Abstract: In the Lower Congo region, the Ediacaran Schisto-Calcaire Subgroup consists of five carbonate-dominated formations (C1 to C5). They record tectono-eustatic sea-level fluctuations controlled by several short-time extensional tectonic events occurred in the whole basin, followed by the development of the Araçuaí-West Congo Orogen between 630. Ma and 560. Ma. The uppermost units of the C2 Formation, i.e. C2d and C2e members, consist of open marine to peritidal/sabkha cycles of 1-4. m in thickness formed during in a Highstand Systems Tract (HST). The unexposed transition between the C2 and C3 formations is interpreted as a 'final' HST phase which initiated the burial of the carbonate ramp by prograding siliciclastics or an early Transgressive Systems Tract (TST) phase. The carbonates of the C3 Formation represent open marine shallowing-upward cycles of 3-8. m in thickness, with deposition at the top of massive oolitic barrier shoals during a TST which flooded the entire the Neoproterozoic West Congo Basin. During the highstand, contributions of river water and land-derived material inputs occurred, intermittently according to the semi-arid to arid conditions that prevailed in the restricted inner ramp and in the sabkha facies belts. In term of geochemistry, the disturbed $\delta^{13}\text{C}$ trends of the post-Marinoan C2 and C3 carbonates rather reflect early diagenetic variations related to (i) the mixing of carbonate rocks with $\delta^{13}\text{C}$ and $\delta^{18}\text{O}$ depleted fluids including decarboxylation during early organic diagenesis and deep burial, or (ii) the meteoric alteration during carbonate stabilization, than temporal signals of the global ocean chemistry. This observation does not negate the stratigraphic utility of $\delta^{13}\text{C}$ ratios for intrabasinal correlations.

https://dipot.ulb.ac.be/dspace/bitstream/2013/217287/1/Elsevier_200914.pdf

49. Casier, J.-G., Maillet, S., Kasimi, R., & Préat, A. (2015, octobre). Late Eifelian and Early Givetian ostracod assemblages from Wellin, Hotton and On-Jemelle (Ardenne, Dinant Synclinorium, Belgium). Paleoenvironmental implications *Revue de micropaléontologie*, 58(4), 287-308. doi:10.1016/j.revmic.2015.04.002

Abstract: The study of 3430 ostracods collected in the Lomme, Hanonet and Trois-Fontaines formations (Late Eifelian/Early Givetian) in four sections of the Dinant Synclinorium (Ardenne) allowed the recognition of more than 75 taxa. Their study displays the progressive evolution from an external mixed siliciclastic-carbonate ramp to a carbonate platform around the Eifelian/Givetian boundary. Ostracods from the Lomme Fm are published here for the first time. The leperditicoid ostracods are probably indicative of brackish water environments during the deposition of the Trois-Fontaines Fm, and consequently point to wet and warm climatic conditions during Early Givetian times in the Dinant Synclinorium. Their absence in widespread lagoonal environments in the upper part of the Givetian may be on the contrary related to very arid climate conditions. That important climatic change is probably in relation with the Taghanic Biocrisis.

https://dipot.ulb.ac.be/dspace/bitstream/2013/226683/1/Elsevier_210310.pdf

2014

50. Delpomdor, F., Kant, F., & Préat, A. (2014, février). Neoproterozoic uppermost Haut-Shiloango Subgroup (West Congo Supergroup, Democratic Republic of Congo): Misinterpreted stromatolites and implications for sea-level fluctuations before the onset

of the Marinoan glaciation *Journal of African earth sciences*, 90, 49-63. doi:10.1016/j.jafrearsci.2013.11.008

Abstract: The middle Neoproterozoic carbonate-dominated uppermost Haut-Shiloango Subgroup (Sh8h and Sh8i members) in the Lower-Congo Province of the Democratic Republic of Congo is considered as recording pre-glacial shallow-marine sedimentation with stromatolitic reefs overlain by the Upper Diamictite Formation. We investigated these stromatolitic carbonates in order to highlight their biogenicity. Newly defined lithofacies and geochemical analyses (stable isotopes, major, trace and REE+Y elements) are used to provide insights into the origins of the depositional events that occurred immediately before Marinoan global glaciation. These insights should in turn provide constraints on the models developed for this glaciation event. The series consists of three shaly and carbonate lithofacies: (i) alternating limestones and claystones (lithofacies 1); (ii) nodular wackestones (lithofacies 2); and (iii) clast-supported conglomerates and breccias (lithofacies 3). Lithofacies 1 is an open marine low-energy mid/outer ramp system with hummocky cross-laminations and distal tempestites; lithofacies 2 is a distal slope facies with syndimentary contorted structures, slided and slumped semi-consolidated limestone beds; lithofacies 3 consists of debris flows deposited in a basinal setting controlled by syndimentary faults. None of the facies exhibits petrographic evidence of biogenicity such as stromatolitic laminar-reticulate fabrics and/or associated sediments (e.g. peloids, oncoids, ooids) or typical features such as mudcracks or clotted fabrics. The uppermost Haut-Shiloango Subgroup is made up from the stratigraphic succession of the three lithofacies and corresponds to a deepening-upward evolution from storm-influenced lithofacies in mid- and outer-ramp to deep-water environments, with emplacement of mass flow deposits in toe-of-slope settings. These processes occurred along tectonically active continental margins locally influenced by altitude glaciers, developed after a rift-drift transition. Uniform flat non-marine shale-normalized REE+Y patterns indicate freshwater-influenced signatures in the Sh8h carbonates. Moderate Y, Zr and Rb values reflect continental detrital inputs in nearshore environments rather than in deep-water environments. These nearshore sediments have been reworked from shallow inner- to mid-ramp settings into deeper outer-ramp and deep-water slope environments as a consequence of the tilting and uplifting of blocks. The blocks belonged to a graben-like basin related to the 750-670 Ma oceanic spreading in the central-southern Macaúbas Basin. © 2013 Elsevier Ltd.

https://dipot.ulb.ac.be/dspace/bitstream/2013/168148/1/Elsevier_151778.pdf

51. Thiéblemont, D., Tegye, M., Bouton, P., Pr at, A., Goujou, J. C., Weber, F., Obiang, M. E., Joron, J. L., & Treuil, M. (2014). Transition from alkaline to calc-alkaline volcanism during evolution of the Paleoproterozoic Francevillian basin of eastern Gabon (Western Central Africa) *Journal of African earth sciences*, 99(PA2), 215-227. doi:10.1016/j.jafrearsci.2013.12.007

Abstract: We report new geochemical data for the volcanic and subvolcanic rocks associated with the evolution of the Francevillian basin of eastern Gabon during Paleoproterozoic times (c. 2.1-2 Ga). Filling of this basin has proceeded through four main sedimentary or volcano-sedimentary episodes, namely FA, FB, FC and FD. Volcanism started during the FB episode being present only in the northern part of the basin (Okondja sub-basin). This volcanism is ultramafic to trachytic in composition and displays a rather constant alkaline geochemical signature. This signature is typical of a within-plate environment, consistent with the rift-setting generally postulated for the Francevillian basin during the FB period. Following FB, the FC unit is 10-20 m-thick silicic horizon (jasper) attesting for a massive input of silica in the basin. Following FC, the FD unit is a c. 200-400 m-thick volcano-sedimentary sequence including felsic tuffs and epiclastic rocks. The geochemical signatures of these rocks are totally distinct from those of the FB alkaline lavas. High Th/Ta and La/Ta ratios attest for a calc-alkaline signature and slight fractionation between heavy rare-earth suggests melting at a rather low pressure. Such characteristics are comparable to those of felsic lavas associated with the Taupo zone of New Zealand, a modern ensialic back-arc basin. Following

FD, the FE detrital unit is defined only in the Okondja region, probably associated with a late-stage collapse of the northern part of the basin. It is suggested that the alkaline to calc-alkaline volcanic transition reflects the evolution of the Francevillian basin from a diverging to a converging setting, in response to the onset of converging movements in the Eburnean Belt of Central Africa.

https://dipot.ulb.ac.be/dspace/bitstream/2013/196038/1/Elsevier_179665.pdf

2013

52. Delpomdor, F., Blanpied, C., Virgone, A., & Préat, A. (2013, décembre). Paleoenvironments in Meso-Neoproterozoic carbonates of the Mbuji-Mayi Supergroup (Democratic Republic of Congo) - Microfacies analysis combined with C-O-Sr isotopes, major-trace elements and REE+Y distributions *Journal of African earth sciences*, 88, 72-100. doi:10.1016/j.jafrearsci.2013.09.002

Abstract: The Meso- and Neoproterozoic Mbuji-Mayi Supergroup (1155Ma to ca. 800Ma) was deposited in the SE-NW trending siliciclastic-carbonate failed-rift in the Sankuru-Mbuji-Mayi-Lomami-Lovoy Basin. Drillcore- and outcrop-derived microfacies, isotope (C, O and Sr) compositions of carbonates and REE+Y distributions are integrated to unravel the paleoenvironmental and chemical conditions prevailing during deposition and alteration (or contamination) of the Mbuji-Mayi carbonates. The carbonate succession (Ble subgroup and BIIa to BIIe subgroups), composed of 11 microfacies (MF), records the evolution of a marine ramp submitted to evaporation, with basinal and low-energy outer-ramp environments (MF1-MF5), biohermal mid-ramp (MF6) and restricted tide-dominated lagoon inner-ramp (MF7-MF9) settings, overlain by lacustrine (MF10) and sabkha (MF11) environments. The ramp margin is characterized by thick stacks of stromatolitic bioherms. #13C and #18O relationships in the Mbuji-Mayi carbonates allow discrimination between meteoric (#13C: -7.5‰ to +0.0‰, #18O: -7.0‰ to -1.0‰) and burial lithifications (#13C: -1.5‰ to +0.0‰, #18O: -15.1‰ to -7.0‰), that overprinted a primary marine signal (#13C: -1.5‰ to +2.0‰, #18O: -3.0‰ to +0.5‰) partially preserved in the subgroups. Unaltered pristine signals are found in the Mbuji-Mayi carbonates with 87Sr/86Sr ratios (0.7065-0.7082) similar to those of the marine-preserved strontium signatures of the early Neoproterozoic oceans. The PAAS-normalized REE +Y distributions indicate that the Ble carbonates were altered by Fe-oxide-rich hydrothermal fluids. BIIb and BIIe carbonates exhibit uniform light REE depleted patterns suggesting inputs of detrital river material whereas a marine seawater, highlighted by the REE+Y distributions is preserved in BIIc and BII d carbonates. The pattern of carbon, oxygen and strontium isotopic variations in the Mbuji-Mayi carbonates reflects deposition and early diagenesis in variety domains in marine, evaporitic and meteoric conditions. Almost all Mbuji-Mayi carbonates display discrete seawater REE+Y distributions, reflecting influences of particulate and colloidal materials derived from riverine inputs or hydrothermal fluids. Our systematic REE+Y approach allows also to infer the nature of the dolomitization processes operating in each carbonate subgroup, i.e. dolomitization may be attributed to evaporative reflux of groundwater or mixing zones of freshwater lenses. The internal architecture and evolution of the carbonate Mbuji-Mayi succession are similar to many Phanerozoic ramps submitted to sealevel variations, climatic changes and episodic detrital inputs. © 2013 Elsevier Ltd.

https://dipot.ulb.ac.be/dspace/bitstream/2013/168186/1/Elsevier_151816.pdf

53. Delpomdor, F., Linnemann, U., Boven, A., Gärtner, A., Travin, A., Blanpied, C., Virgone, A., Jelsma, H., & Préat, A. (2013, novembre). Depositional age, provenance, and tectonic and paleoclimatic settings of the late mesoproterozoic-middle neoproterozoic mbuji-mayi supergroup, democratic republic of congo *Palaeogeography, palaeoclimatology, palaeoecology*, 389, 4-34. doi:10.1016/j.palaeo.2013.06.012

Abstract: The late Mesoproterozoic-middle Neoproterozoic period (ca. 1300Ma-800Ma) heralded extraordinary climatic and biological changes related to the tectonic changes that resulted in the assembly (~1.0Ga) and the break-up of Rodinia (880Ma-850Ma). In the Democratic Republic of Congo, these changes are recorded in the Mbuji-Mayi Supergroup which was deposited in the SE-

NW trending siliciclastic-carbonate failed-rift Sankuru-Mbuji-Mayi-Lomami-Lovoy Basin. New LA-ICP-MS U-Pb laser ablation data on detrital zircon grains retrieved from the lower arenaceous-pelitic sequence (BI group) together with C and Sr isotopic data on carbonates from the upper dolomitic-pelitic sequence (BII group) and an $^{40}\text{Ar}/^{39}\text{Ar}$ age determination on a dolerite give a new depositional time frame between 1174 ± 22 Ma and ca. 800 Ma for the Mbuji-Mayi Supergroup. The upper age limit is based on the assumption that the transition between the BIIb and BIIc subgroups recorded the Bitter Springs anomaly. In terms of tectonic and paleoclimatic settings, the BII group was deposited in the eastern passive margin of the Congo Craton during warm periods interlaced with temporarily dry and wet seasons, suggesting greenhouse conditions during the fragmentation of Rodinia. © 2013 Elsevier B.V.

https://dipot.ulb.ac.be/dspace/bitstream/2013/168225/1/Elsevier_151855.pdf

54. Delpomdor, F., & Pr at, A. (2013, novembre). Early and late neoproterozoic c, o and sr isotope chemostratigraphy in the carbonates of west congo and mbuji-mayi supergroups: A preserved marine signature? *Palaeogeography, palaeoclimatology, palaeoecology*, 389, 35-47. doi:10.1016/j.palaeo.2013.07.007

Abstract: The carbon, oxygen and strontium isotope geochemistry is the most widely applied chemostratigraphic tool in the reconstruction of paleoenvironments and indirect regional or global correlations for the Neoproterozoic times. Relatively good preserved carbonate rocks of the West Congo Supergroup, i.e. the Schisto-Calcaire Subgroup of the Democratic Republic of Congo and Gabon, and the Mbuji-Mayi Supergroup, i.e. the BII group from the Democratic Republic of Congo, make these Neoproterozoic successions unique for chemostratigraphical studies. In this paper, we propose to discuss on the fidelity of $\delta^{13}\text{C}_{\text{carb}}$ and Sr signatures in Neoproterozoic carbonates on the basis of a severe diagenetic control, using trace and major geochemistry, combined with C and O stable isotope analysis. Our result highlights that the $\delta^{13}\text{C}_{\text{carb}}$ fluctuations of the Schisto-Calcaire Subgroup reflect (i) facies variations, (ii) exchanges between isotopically light carbon in meteoric waters and carbonate during lithification and early diagenesis, and/or (iii) regional metamorphism grades rather than temporal signals of ocean chemistry, while in the unmetamorphosed carbonates of the Mbuji-Mayi Supergroup, reported to the Bitter Springs anomaly (~810 Ma), the use of $\delta^{13}\text{C}$ ratios are worldwide applicable for inter-basin correlations. © 2013 Elsevier B.V.

https://dipot.ulb.ac.be/dspace/bitstream/2013/168235/1/Elsevier_151865.pdf

55. Casier, J.-G., Devleeschouwer, X., Maillet, S., Petitclerc, E., & Pr at, A. (2013). Ostracods and rock facies of the Givetian/Frasnian transition in the Sourd d'Ave section at Ave-et-Auffe (Dinant Synclinorium, Ardenne, Belgium) *Bulletin of Geosciences*, 88(2), 241-264.
56. Mamet, B., & Pr at, A. (2013). Essai de description d'algues nouvelles pal ozoïques *Geologica Belgica*, 16(1-2), 35-48.

Abstract: Description of a dozen new genera (Cheggatellina, Emsiella, Flexitubulla, Kamaenina, Koninckoporella, Masloviporella, Paraumbellina, Pseudoepiphytella, Sphaerinvilla, Vintonella, Wapitella) associated with about forty new species. The microflora, including a few Microproblematica, are derived from many basins on a worldwide scale. The samples range from the Devonian, Carboniferous and Permian.

57. Casier, J.-G., Devleeschouwer, X., Maillet, S., Petitclerc, E., & Pr at, A. (2013). Ostracods and rock facies across the Givetian/Frasnian boundary interval in the Sourd d'Ave section at Ave-et-Auffe (Dinant Synclinorium, Belgium) *Bulletin of Geosciences*, 88(2), 241-264. doi:10.3140/bull.geosci.1340

Abstract: Ostracods from the Sourd d'Ave section have been collected in the Moulin Boreux and Fort Hulobiet Members (Fromelennes Fm., Givet Group) and in the Pont d'Avignon Member (Nismes Fm., Frasnien Group). Ostracods collected in the Fromelennes Fm. by Milhau (1983a) and in the Nismes Fm. by Casier (1987a) have been also reviewed. Forty-four ostracod species are identified in the Fromelennes Fm. and 25 in the Nismes Fm. They belong exclusively to the Eifelian Mega-Assemblage, and several assemblages indicative of restricted and shallow marine, sometimes agitated, environments are recognized in the Fromelennes Fm. The great rarity of ostracods in the upper part of this formation provides evidence for less favourable lagoonal conditions probably related to increasing aridity at the end of the Givetian. In the Frasnien Group, assemblages are exclusively open marine and indicative of increasing water depth. The majority of ostracod species recognized in the Givet Group are missing in the base of the Frasnien Group as a consequence of the Frasnien Event. A systematic list of ostracods identified in the Fromelennes Fm. at Sourd d'Ave is published as an annex. Systematic sampling has been carried out in order to establish the sedimentological evolution of the environments and to detail the Givetian-Frasnien (G/F) transition. This allowed recognition of 13 microfacies types that replicate the standard sequence of Pr at & Mamet (1989) from open marine shallow subtidal to restricted supratidal near emersion. The Boreux Member and the Fort Hulobiet Member display restricted facies (Amphipora, spongiostromid and algal bafflestones and bindstones, loferites with desiccation lumps) with poorly fossiliferous beds interbedded with higher energy peloidal and sometimes oolitic grainstone facies. Laminite horizons, sometimes with small-sized lateral linked hemispheroid stromatolites are uncommon, and are associated with dolomicrites showing pseudomorphs of evaporite minerals. These evaporitic facies become common in the upper part of the Fort Hulobiet Member suggesting the palaeoclimate became more arid at the G/F transition. Metre-scale cyclicity is pervasive throughout the Givetian part of the section. The boundary between the Givet Group and the Frasnien Group is very distinctive in the field, and is characterized by a transition from restricted evaporative lagoonal facies to open marine interbedded marly shales and nodular limestones. The upper part of the Fort Hulobiet Member consists of interbedded biostromes (semi-restricted stromatoporoid boundstones) followed by Amphipora floatstones, then fossil-poor units and restricted supratidal laminites with well-developed fenestral fabrics. The Frasnien Pont d'Avignon Member contains a rich faunal assemblage (bryozoans brachiopods, molluscs, nautiloids, tentaculitids) suggesting an abrupt drowning from the marginal Givetian carbonate platform into a Frasnien distal ramp or deep basinal environment below or near storm wave base.

58. Casier, J.-G., & Pr at, A. (2013). Ostracodes et lithologie du stratotype de la formation du mont d'haurs (Giv tien, Synclinorium de Dinant) *Revue de pal obiologie*, 32(2), 481-501.

Abstract: The stratotype of the Mont d'Haurs Formation (Early Givetian, *Polygnathus timorensis* conodont Zone) is composed of a thick alternation (>130 m) of massive limestones rich in stromatoporoids and corals, and of thin beds of finely granulated limestones. The environment is open marine, shallow (in the photic zone) and is characterized by strong energy fluctuations along a proximal-distal gradient from an inner shelf where numerous bioconstructions with stromatoporoids and corals (*tabulata* and *rugosa*) developed. The constructors display numerous mutual encrustment relations and are frequently fragmented. The reworking is mainly due to storms activities, sometimes to the swell. Crinoidal meadows and *Girvanella* mats are destroyed, and their products were mixed with other benthic bioclasts (brachiopods, ostracods, mollusks, bryozoa and algae). More than 5,000 ostracods have been extracted from 95 samples in the top of the Terres d'Haurs Formation and in the Mont d'Haurs Formation. Sixty-six ostracod species are recognized and they belong exclusively to the Eifelian Mega-Assemblage. In the Mont d'Haurs Formation, the associations of ostracods are indicative of shallow well oxygenated marine environments. Sometimes ostracods indicate the proximity of agitated environments. This study of ostracods of the Mont d'Haurs Formation is the last of a series on the Mont d'Haurs geological structure. One hundred and sixteen ostracod species have been recognized from the upper part of the Hanonet Formation to the upper part of the Mont d'Haurs Formation. They give evidence for the frequent changes of the sedimentation conditions

during the Early Givetian in the locality-type region for the Givetian since lagoonal, semi-restricted, agitated shallow to deep calm marine environments are recognized.

2012

59. Bouton, P., Préat, A., Thieblemont, D., & Eban Obang, M. (2012). Le Gabon à l'aube de la vie *Pour la science*, 413, 50-57.
60. Bouton, P., Préat, A., Thieblemont, D., & Ebang Obiang, M. (2012). Les environnements de la vie au Paléoprotérozoïque (Gabon) *Pour la science*, 50-57.

2011

61. Préat, A., Delpomdor, F., Bouton, P., Thiéblemont, D., Prian, J.-P., & Ndounze, S. (2011, août). Paleoproterozoic high #13C dolomites from the Lastoursville and Franceville basins (SE Gabon): Stratigraphic and synsedimentary subsidence implications *Precambrian research*, 189(1-2), 212-228. doi:10.1016/j.precamres.2011.05.013

Abstract: New data for the isotopic composition of carbon in shallow-marine sedimentary carbonates in southeastern Gabon (Franceville and Lastoursville sub-basins) indicate that the seawater value of #13C in these sediments underwent a large positive excursion around 2.1Ga. These carbonate rocks belong to the FC Formation of the Francevillian Group deposited along the margin of the Archean Chaillu Craton in open-marine shelf and evaporite settings and experienced, locally, lower greenschist facies metamorphism. Four microfacies (MF1-MF4) are recognized from subtidal cyanobacterial dolomites to inter- and supratidal collapse breccias (MF4). The dolomites exhibit elevated 13C values, most values are above 0.50‰, the highest value is 9.74‰ and the average value is near 4‰ vs. VPDB, consistent with deposition during the large worldwide positive excursion between 2.22 and 2.06Ga. These positive #13C values are independent of the microfacies type. Such high 13C values are also recorded in reworked carbonates (dolomites) embedded in coarse-grained sandstones and conglomerates interstratified in the black shales of the underlying FB Formation suggesting that the dolomites were at least stratigraphically equivalent to the black shale deposits. Interaction between early structural development and sediment fill lead to the formation of several sub-basins with distinct differences in terms of amount and timing of subsidence. The 13C-enriched dolomites are probably linked to high burial rate of organic carbon starting with the deposition of the FB sediments in this extensional geotectonic context. As a consequence the cherty and dolomitic FC Formation cannot longer be considered as a marker interval. The end of the positive excursion is located near the top of the Francevillian Series (i.e. FE) and could be used in future studies as a potential chemostratigraphic tool in the Paleoproterozoic. © 2011 Elsevier B.V.

 https://dipot.ulb.ac.be/dspace/bitstream/2013/183050/1/Elsevier_166677.pdf

62. Préat, A., Prian, J.-P., Thiéblemont, D., Obame, R. M., & Delpomdor, F. (2011, juin). Stable isotopes of oxygen and carbon compositions in the Neoproterozoic of South Gabon (Schisto-Calcaire Subgroup, Nyanga Basin): Are cap carbonates and lithoherms recording a particular destabilization event after the Marinoan glaciation? *Journal of African earth sciences*, 60(4), 273-287. doi:10.1016/j.jafrearsci.2011.03.005

Abstract: Geologic evidence of tropical sea level glaciation in the Neoproterozoic remains a matter of debate in the Snowball Earth hypothesis. The Niari Tillite Formation and the cap carbonates record the late Neoproterozoic Marinoan glaciation in South Gabon. These cap carbonates are located at the base of the Schisto-Calcaire Subgroup a predominantly carbonate succession that rests with sharp contact on top of the Niari Tillite. Integrating sedimentological and stable isotope data, a consistent sequence of precipitation events is proposed, with strongly negative #13C values pointing to a particular event in the cap carbonates (average #13C value=-3.2‰ V-PDB)

and in a further newly defined lithohermal unit (average $\delta^{13}\text{C}$ value = -4.6‰ V-PDB). Subsequent shallow evaporative platform carbonates display carbon and oxygen isotopic compositions indicative of relatively unaltered seawater values. Strongly negative $\delta^{18}\text{O}$ values in the lithoherms and replacement of aragonite fans by equigranular calcite suggest flushing of meteoric water derived from glacial meltwater. © 2011 Elsevier Ltd.

https://dipot.ulb.ac.be/dspace/bitstream/2013/167707/1/Elsevier_151337.pdf

63. Préat, A., Prian, J., Thieblemont, D., Obarne, R., & Delpomdor, F. (2011). Stable isotopes of oxygen and carbon in the Neoproterozoic of South Gabon (Schisto-Calcaire Subgroup, Nyanga Basin): Are cap carbonate and lithoherms recording a particular destabilization event after the Marinoan glaciation? *Journal of African earth sciences*, 60, 273-287.
64. Préat, A., Bouton, P., Thieblemont, D., Prian, J., Simo Ndounze, S., & Delpomdor, F. (2011). Paleoproterozoic high $\delta^{13}\text{C}$ dolomites from Lastoursville and Franceville basins (SE Gabon): stratigraphical synsedimentary subsidence implications. *Precambrian research*, 189, 212-228.
65. Préat, A., Mamet, B., Di Stefano, P., Martire, L., & Kolo, K. (2011). Microbially-induced Fe and Mn oxides in condensed pelagic sediments (Middle-Upper Jurassic, Western Sicily). *Sedimentary geology*, 237, 179-188.
66. Casier, J.-G., Devleeschouwer, X., Moreau, J. F., Petitclerc, E., & Préat, A. (2011). Ostracods, rock facies and magnetic susceptibility records from the stratotype of the Terres d'Haus Formation (Givetian) at the Mont d'Haus (Givet, France). *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 81, 97-128.
67. Casier, J.-G., Devleeschouwer, X., Petitclerc, E., & Préat, A. (2011). Ostracods, rock facies and magnetic susceptibility of the Hanonet Formation and Trois-Fontaines transition (Early Givetian) at the Mont d'Haus (Givet, France). *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*.
68. Ait Abdelouahab, D., Bouzenoune, A., & Préat, A. (2011). Les isotopes stables du carbone et de l'oxygène des carbonates (calcaires et sidérites) du gisement de fer de Boukhadra (Algérie nord-orientale) *Bulletin - Office national de la géologie*, 22(3), 381-395.
69. Delpomdor, F., Devleeschouwer, X., blanpied, C., Schroder, S., Fernández, M., & Préat, A. (2011). Microfacies and magnetic susceptibility in two Proterozoic carbonate sequences (Kasai Province, Democratic Republic of Congo) *Terra nova*.
70. Devleeschouwer, X., Casier, J.-G., Petitclerc, E., & Préat, A. (2011). Drowning of a carbonate platform at the Givetian/Frasnian boundary (Sourd d'Ave section, Belgium): a comparison of different proxies (magnetic susceptibility, microfacies and gamma-ray spectrometry) *Berichte des Institutes für Geologie und Paläontologie der Karl-Franzens-Universität Graz, Österreich*, 3.
71. Casier, J.-G., Devleeschouwer, X., Maillet, S., Petitclerc, E., & Préat, A. (2011). Ostracods, rock facies and magnetic susceptibility of the Givetian/Frasnian transition at Ave-et-Auffe (Dinant, Synclinorium, Belgium) *Berichte des Institutes für Geologie und Paläontologie der Karl-Franzens-Universität Graz, Österreich*, 2.

72. Tait, J., Delpomdor, F., Préat, A., Tack, L., Straathof, G., & Nkula, V. K. (2011, janvier). Neoproterozoic sequences of the West Congo and Lindi/Ubangi Supergroups in the Congo Craton, Central Africa *Memoirs of the Geological Society of London*, 36(1), 185-194. doi:10.1144/M36.13

Abstract: The focus of this chapter is the West Congo Supergroup in the West Congo Belt (WCB), which extends along the western margin of the Congo Craton from Gabon in the north to northern Angola in the south, and the Lindi/Ubangi Supergroup of the Lindian and Fouroumbala - Bakouma Basins exposed on the northern margin of the craton. In both regions, up to two distinct diamictite horizons have been recognized, the younger of which is often associated with carbonate rocks. Geochronological constraints are generally rather poor, many of the deposits lack modern sedimentological analysis, and the glacial versus non-glacial genesis of the diamictites is a matter of debate in the literature. However, recent studies suggest a periglacial influence of diamictite deposition, particularly for the sequences in the WCB. The stratigraphy of the various basins is described, available geochemical and geochronological information collated, and recent work regarding the periglacial nature of the diamictites discussed. Finally, an updated chronostratigraphic correlation between the basins is presented. However, much more work is required, particularly in the Neoproterozoic basins on the northern margin of the Congo Craton, and more accurate geochronological constraints are required before the Neoproterozoic palaeogeography and depositional environments of the western and northern Congo Craton can be fully understood. © The Geological Society of London 2011.

73. Casier, J.-G., Moreau, J., Devleeschouwer, X., Petitclerc, E., & Préat, A. (2011). Ostracods, rock facies and magnetic susceptibility records from the stratotype of the Terres d'Haus Formation (Givetian) at the Mont d'Haus Givet France) *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 81, 97-128.

Abstract: More than 5,500 carapaces, valves and fragments of ostracods, were extracted from 48 samples collected in the stratotype of the Terres d'Haus Formation (= Fm) and in the very base of the stratotype of the Mont d'Haus Fm, at the Mont d'Haus, close to Givet. Fiftytwo species belonging to several assemblages of the Eifelian MegaAssemblage have been identified. They are generally indicative of neritic marine environments below fair-weather wave base, some even below storm wave base. Ostracods indicative of semi-restricted environments are also present but the sedimentological analysis displays that these ostracods have been mainly transported from these shallow settings. Close to the boundary of the Terres d'Haus Fm and the Mont d'Haus Fm, thick-shelled ostracods indicate that the energy of the environment increased. The richness in ostracods and their great diversity in the two studied sections prove that the living conditions were particularly favourable for these crustaceans. Ten microfacies are recognized, the succession of which (from 1 to 10) constitutes a standard shallowing upward sequence, with environments ranging from open marine, near storm wave base, to coastal, close to subaerial exposure. The microfacies analysis points to a carbonate ramp system with oolitic shoals and algal shoals separating semi-restricted and coastal areas from the open marine environment. Storm events and those related to the wave activity redistributed many organisms, which formed diversified communities with abundant echinoderms, bryozoans, molluscs and brachiopods in the peri-shoal environments. The lithological curve reflects a progressive and transgressive evolution in two phases marked by two parasequence sets: the first set records the destabilization of the overlain carbonate platform (Trois-Fontaines Fm) leading to the establishment of a shallow "open lagoon" in the inner ramp, the second set corresponds to the development of several shoals at the inner-mid ramp zones. No important reefal episode is present and shoals are of modest relief. The salinity and energy were the key parameters controlling the zonation of the organisms and the distribution of the environments. Low-field magnetic susceptibility (XLF) values are weak and eight magnetic susceptibility evolutions are reported along the lithological column. The magnetic susceptibility and microfacies curves are more or less mimetic in the lower half of the section and opposite in the upper part of the Terres

d'Hours Fm. A significant decreasing trend of the low-field magnetic susceptibility values across the boundary between the Terres d'Hours Fm and the Mont d'Hours Fm is presented. Two linear regression models show a moderately positive correlation between XLF values and microfacies in the lower half of the section and a moderately strong negative correlation between these two parameters in the upper part of the Terres d'Hours Fm. The water agitation is highest in the mid and inner ramp, associated to the oolite and algal shoal environments and corresponds to the lowest mean XLF values presented in the models. The lower half of the section corresponds more to a carbonate platform profile in opposition to the second model, which confirm the carbonate ramp morphology. The average XLF values in the upper part of the Terres d'Hours Fm are more homogeneous compared to those reported in the lower half of the Terres d'Hours Fm. High-resolution stratigraphic correlation for the base of the Mont d'Hours Fm in Belgium and France is proposed due to similar XLF data established in the "Les Monts de Baileux" section 40 km distant from the stratotype area.

2010

74. Mamet, B., & Pr  at, A. (2010). Un atlas d'algues calcaires: Carbonif  re, Alaska arctique *Carnets de g  ologie*, 60.
75. Casier, J.-G., El Hassani, A., & Pr  at, A. (2010). Ostracodes du D  vonien moyen et sup  rieur du Tafilalt (Maroc) *Revue de micropal  ontologie*, 53, 29-51.
76. Pr  at, A., Kolo, K., Prian, J., & Delpomdor, F. (2010). A peritidal evaporite environment in the Neoproterozoic of South Gabon (Schisto-Calcaire Subgroup, Nyanga Basin) *Precambrian research*, 177, 253-265.
77. Devleeschouwer, X., Petitclerc, E., Spassov, S., & Pr  at, A. (2010). The Givetian-Frasnian boundary at Nismes parastratotype (Belgium): the magnetic susceptibility signal controlled by ferromagnetic minerals *Geologica Belgica*, 13(4), 345-360.

Abstract: A comparison between microfacies and magnetic susceptibility (MS) curves has been performed at the Givetian-Frasnian transition in southern Belgium. The MS curve is subdivided in four magnetic sequences. Most of the section has MS and MF curves anti-correlated. Hysteresis parameters reveal a low coercivity mineral of magnetite type phase and a high coercivity mineral (i.e. hematite) in all samples. Strong correlation between ferromagnetic and low-field magnetic susceptibilities suggests that ferromagnetic minerals control almost totally the MS signal with an increasing upsection abundance of paramagnetic grains (iron-bearing clay minerals and pyrite). A decreased proportion of superparamagnetic grains, probably of diagenetic origin, is observed upsection. The hematite grains increases in the Frasnian as attested by the higher hematite contribution to the IRM500mT. The anti-correlation between the magnetic viscosity coefficient and the hematite contribution to the IRM500mT suggest that hematite are not associated to the superparamagnetic fraction and has a detrital origin. The opposite evolutions could be partly explained by sedimentological parameters and by an increased amount of primary detrital magnetite and hematite upsection. This detrital influx highlights the drowning of the carbonate platform at the end of the Givetian illustrating the progressive change from a Givetian rimmed platform towards a Frasnian ramp setting.

78. Casier, J.-G., Cambier, G., Devleeschouwer, X., Petitclerc, E., & Pr  at, A. (2010). Ostracods, rock facies and magnetic susceptibility of the Trois-Fontaines and Mont d'Hours Formations (Givetian) in the Rancennes quarry at the Mont d'Hours (Givet, France) *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 80, 85-114.

2009

79. Casier, J.-G., & Préat, A. (2009). Comments on the Devonian/Carboniferous and Frasnian/Famennian boundary stratotype (La Serre and Coumiac, Montagne Noire, France). *Palaeontographica Americana*, 200-201.
80. Casier, J.-G., Berra, I., & Préat, A. (2009). Devonian ostracodes from Devils Gate (Eureka, Nevada) *Palaeontographica Americana*, 63, 199-200.
81. Mamet, B., & Préat, A. (2009). Algues et microfossiles problématiques du Dévonien Moyen du 'Fondry des Chiens' (bord sud du Synclinorium de Dinant, Belgique): implications paléobathymétriques *Revue de micropaléontologie*, 52, 249-263.
82. Préat, A., & Casier, J.-G. (2009). Late Givetian to Middle Frasnian ostracods from Nismes (Dinant Synclinorium, Belgium) and their lithological context. *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 79, 87-115.

Abstract: About 2,450 carapaces, valves and fragments of ostracods have been extracted from 94 samples collected in the Fromelennes, Nismes and Moulin Lienaux Formations at Nismes, close to Frasnes (southern border of the Dinant Synclinorium, Belgium). Sixty-three taxa belonging to the Eifelian Mega-Assemblage are recognized. The only significant change as deduced from the ostracod fauna is the progressive transition from lagoonal and semi-restricted environments to open-marine environments in the upper part of the Fromelennes Fm. The *Polyzygia beckmanni* Zone and the *Favulella lecomptei* Zone established on metacopid ostracods are recognized at Nismes, and the simultaneous occurrence of these two species in a sample collected in the upper part of the Sourd d'Ave Mbr implies the emendation of the definition of the *P. beckmanni* Zone. The new definition is: presence of *P. beckmanni* before the first occurrence of *F. lecomptei*. A new species, *Ovatoquasillites nismesensis* nov. sp., is described. The sedimentological analysis confirms that the transition of the Givetian and Frasnian stages does not correspond to a particular event. The evolution of the lithological curve across the Givetian / Frasnian boundary allows the recognition of 5 sequences recording a general drowning of the Givetian carbonate platform. No effective barrier system was active at that time suggesting that the Givetian carbonate platform was already dismantled prior to its definitive drowning.

2008

83. Mamet, B., & Préat, A. (2008, décembre). The hunt for *Cummingsella* (Carboniferous, Chlorophyta) *Geologia Croatica*, 61(2-3), 123-128.

Abstract: Until recently *Cummingsella* was only known by two rare and puzzling species, erected on very limited material. The genus was therefore considered as representing a very uncommon and puzzling form that played no role in carbonate sedimentation. Recent studies of Visean carbonates in the American Midcontinent have disclosed a prolific *Cummingsella* flora that indicates the proximity of an algal bant *Cummingsella* can therefore be considered locally abundant and cosmopolitan (Europe, Australia, North America), ranging in age from the Tournaisian to the Namurian (Serpukhovian).

84. Préat, A., de Jong, J., Mamet, B., & Mattielli, N. (2008, août). Stable iron isotopes and microbial mediation in red pigmentation of the Rosso Ammonitico (mid-late Jurassic, Verona area, Italy). *Astrobiology*, 8(4), 841-857. doi:10.1089/ast.2006.0035

Abstract: The iron (Fe) isotopic composition of 17 Jurassic limestones from the Rosso Ammonitico of Verona (Italy) have been analyzed by Multiple-Collector Inductively Coupled Plasma Mass Spectrometry (MC-ICP-MS). Such analysis allowed for the recognition of a clear iron isotopic

fractionation (mean -0.8 per thousand, ranging between -1.52 to -0.06 per thousand) on a millimeter-centimeter scale between the red and grey facies of the studied formation. After gentle acid leaching, measurements of the Fe isotopic compositions gave $\delta(56)\text{Fe}$ values that were systematically lower in the red facies residues (median: -0.84 per thousand, range: -1.46 to +0.26 per thousand) compared to the grey facies residues (median: -0.08 per thousand, range: -0.34 to +0.23 per thousand). In addition, the red facies residues were characterized by a lighter $\delta(56)\text{Fe}$ signal relative to their corresponding leachates. These Fe isotopic fractionations could be a sensitive fingerprint of a biotic process; systematic isotopic differences between the red and grey facies residues, which consist of hematite and X-ray amorphous iron hydroxides, respectively, are hypothesized to have resulted from the oxidizing activity of iron bacteria and fungi in the red facies. The grey Fe isotopic data match the Fe isotopic signature of the terrestrial baseline established for igneous rocks and low-C(org) clastic sedimentary rocks. The Fe isotopic compositions of the grey laminations are consistent with the influx of detrital iron minerals and lack of microbial redox processes at the water-interface during deposition. Total Fe concentration measurements were performed by Inductively Coupled Plasma Atomic Emission Spectroscopy (ICP-AES) (confirmed by concentration estimations obtained by MC-ICP-MS analyses of microdrilled samples) on five samples, and resultant values range between 0.30% (mean) in the grey facies and 1.31% (mean) in the red facies. No correlation was observed between bulk Fe content and pigmentation or between bulk Fe content and Fe isotopic compositions. The rapid transformation of the original iron oxyhydroxides to hematite could have preserved the original isotopic composition if it had occurred at about the same temperature. This paper supports the use of Fe isotopes as sensitive tracers of biological activities recorded in old sedimentary sequences that contain microfossils of iron bacteria and fungi. However, a careful interpretation of the iron isotopic fractionation in terms of biotic versus abiotic processes requires supporting data or direct observations to characterize the biological, (geo)chemical, or physical context in relation to the geologic setting. This will become even more pertinent when Fe isotopic studies are expanded to the interplanetary realm.

85. Pr at, A., El Hassani, A., & Mamet, B. (2008). Contribution   l' tude des Ostracodes du D vonien Moyen et Sup rieur du Tafilalt *Revue de micropal ontologie*.
86. Pr at, A., El Hassani, A., & Mamet, B. (2008). Iron bacteria in Devonian carbonates (Tafilalt, Anti-Atlas, Morocco) *Facies*, 54(1), 107-120.
87. Baele, J.-M., Boulvain, F., De Jong, J., Mattielli, N., Papier, S., & Pr at, A. (2008). Iron microbial mats in modern and phanerozoic environments *Proceedings of SPIE - The International Society for Optical Engineering*, 7097, 70970N. doi:10.1117/12.801597

Abstract: The recognition of iron microbial mats in terrestrial environments is of great relevance for the search for extraterrestrial life, especially on Mars where significant iron minerals were identified in the subsurface. Most researches focused on very ancient microbial mats (e.g. BIFs) since they formed on Earth at a time where similar conditions are supposed to have prevailed on Mars too. However, environmental proxies are often difficult to use for these deposits on Earth which, in addition, may be heavily transformed due to diagenesis or even metamorphism. Here we present modern and phanerozoic iron microbial mats occurrences illustrating the wide variety of environments in which they form, including many marine settings, ponds, creeks, caves, volcanoes, etc. Contrarily to their Precambrian counterparts, Modern and Phanerozoic deposits are usually less affected by diagenesis and the environmental conditions likely to be better constrained. Therefore, their investigation may help for the search for morphological and geochemical biosignatures (e.g. iron isotopes) in ancient iron microbial occurrences on Earth but also on other Planets. In particular, many of the case studies presented here show that microstromatolite-like morphologies may be valuable targets for screening potential biosignatures in various rock types.

2007

88. Yans, J., Corfield, R., Racki, G., & Pr at, A. (2007, mars). Evidence for perturbation of the carbon cycle in the Middle Frasnian punctata Zone (Late Devonian) *Geological magazine*, 144(2), 263-270. doi:10.1017/S0016756806003037

Abstract: New carbon isotopic data from the Devonian of Ardennes (Belgium) and partly from the Holy Cross Mountains (Poland) highlight an abrupt and high-amplitude negative excursion in the punctata conodont Zone. Published information from Moravia and China suggests that this Middle Frasnian negative excursion, jointly with the preceding large-scale positive shift, should be used as a global chemostratigraphic marker. Causation scenarios for this negative 'punctata Event' are correlated neither with major biota turnover nor major sea-level changes, but may be related to: (1) the Alamo Impact Event, that led to (2) the massive dissociation of methane hydrates and (3) the rapid onset of global warming.   2007 Cambridge University Press.

89. Kolo, K., Keppens, E., Pr at, A., & Claeys, P. (2007, mars). Experimental observations on fungal diagenesis of carbonate substrates *Journal of geophysical research*, 112(1), G01007. doi:10.1029/2006JG000203
90. Casier, J.-G., & Pr at, A. (2007). Ostracods and lithofacies of the Middle/Upper Devonian boundary stratotype (Puech de la Suque, Montagne Noire, France) *Bulletin de la Soci t  g ologique de France*, 178(4), 293-304.
91. Mamet, B., & Pr at, A. (2007). Jurassic microfacies, Ammonitico Rosso Limestone, Subbetic Cordillera, Spain *Revista Espanola de Micropaleontologia.*, 38(2), 219-228.
92. Yans, Y., Corfield, R., Racki, G., & Pr at, A. (2007). Evidence for perturbation of the carbon cycle in Middle Frasnian punctata Zone *Geological magazine*, 144(2), 1-8.
93. Pr at, A., Blockmans, S., Capette, L., Dumoulin, V., & Mamet, B. (2007). Microfaci s d'une lentille biohermale   la limite Eif lien-Giv tien ('Fondry des Chiens', Nismes, bord sud du Synclinorium de Dinant) *Geologica Belgica*, 10(1-2), 3-25.

Abstract: The biohermal lens of the 'Fondry des Chiens' belongs to the Eifelian-Givetian transition beds near Nismes (southern flank of the Dinant basin). The lens is 64 m thick and composed of a stromatopore-coral framestone. It is overlain by restricted lagoonal algal and cyanophycean facies near the emersion, and overlies Udoteacean and coral-bryozoan coverstones forming the flanks of two other unexposed lenses. Two crinoidal soles stabilized by syntaxial cementation constitute the substratum of these lenses. The reefal sedimentation is regressive. The log is based on the succession of 10 carbonate microfacies (MF1-10, standard sequence). The deepest microfacies (MF1) is open marine at the upper limit of the storm waves and the dysphotic-euphotic boundary. The shallowest sediments were partly emerged (lagoonal sediments, MF10). The exposed reefal lens (rudstones and framestones, MF6-7) and the flanks (grainstones, floatstones and coverstones, MF3-4-5) of the two other lenses are preserved due to early isopachous intergranular cement in the original cavities of the framestones or 'intramicritic' (replacement of the matrix) cementation in the floatstones and coverstones. The similarity of the facies and their algal content suggest that the sedimentary model proposed at Wellin is applicable at Nismes. Sequential analysis points to a three steps regressive evolution of the sedimentation probably related to a discontinuous subsidence. The sequences have similar thicknesses (sixty or so meters) and grade from the dysphotic-euphotic boundary estimated here around twenty meters deep to emersion. As for Wellin, the subsidence is thus much more important than the eustatic regression.

2006

94. Préat, A., Morano, S., Loreau, J.-P., Durlet, C., & Mamet, B. (2006, mai). Petrography and biosedimentology of the Rosso Ammonitico Veronese (middle-upper Jurassic, north-eastern Italy) *Facies*, 52(2), 265-278. doi:10.1007/s10347-005-0032-2

Abstract: A petrographic and biosedimentological study of the Rosso Ammonitico Veronese from the Trento Plateau (north-eastern Italy) shows that diagenetic (neomorphism, recrystallization) and biological processes (microbial content and pigmentation) influenced the formation and alteration of the carbonate matrix. The subject of this article is the interaction of early diagenetic processes and an attempt to explain the different colors of the matrix (red, pink, grey). Nearly 200 samples derived from 14 sections (Callovian to Tithonian) located in the Verona area have been studied by means of classical, cathodoluminescence and SEM microscopy. Calcite and ferruginous microfilaments of different shapes and sizes are present and tentatively attributed to fungi and iron bacteria. These micro-organisms precipitated iron oxy-hydroxides at poorly dysoxic-anoxic sediment-water interfaces. Further liberation of submicronic hydroxides (now hematite) was responsible for the red pigmentation of the carbonate matrices, originally composed of less than 1 µm-sized micrite. Controversial smaller nanograins (0.1-0.5 µm) attributed to nanobacteria or planktonic picoeukaryotes have been observed in the reddish samples. Recrystallization of the micrite leads to the formation of new micritic crystals, between 2 and 4 µm in size, then to microspar crystals. Micritic textures are linked to the different colours of the samples. The intensity of the red colour is correlated with the presence of hematite (former iron hydroxides) and the presence of planar subhedral micritic grains. In contrast, pink and greyish samples are linked to the increasingly coalescent structure of anhedral micritic and microsparitic crystals. © Springer-Verlag 2005.

95. Préat, A. (2006). Le Givétien franco-belge : moteur de la sédimentation: Eustatisme vs subsidence ? *Géologie de la France*, 1,2, 45-51.
96. Mamet, B., & Préat, A. (2006). Iron-bacterial mediation in Phanerozoic red limestones: state of the art *Sedimentary geology*, 185, 147-157.
97. Casier, J.-G., Berra, I., Olempska, E., Sandberg, C., & Préat, A. (2006). Ostracods and rock facies of the Early and Middle Frasnian at Devils Gate in Nevada: Relationship to the Alamo Event. *Acta Geologica Polonica*, 51(4), 813-828.
98. Casier, J.-G., & Préat, A. (2006). Ostracods and their environmental setting close to the Eifelian-Givetian boundary at Aisemont (Namur Synclinorium) *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 76, 5-29.
99. Casier, J.-G., & Préat, A. (2006). Givetian *Geologica Belgica*, 9(1-2), 9-18.
100. Casier, J.-G., & Préat, A. (2006). Ostracods and lithofacies close to the Eifelian-Givetian boundary (Devonian) at Aisemont (Namur Synclinorium, Belgium) *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 76, 5-29.

Abstract: The paper presents the sedimentological analysis and the ostracod study of the upper part of the Rivière Fm. and of the stratotype of the Névremont Fm. in the Aisemont section, the reference section for the Eifelian-Givetian boundary (Devonian) in the southern border of the Namur Synclinorium, Belgium. Thirteen major microfacies types are defined. Their stratigraphic succession records the transition from a mixed siliciclastic-carbonate ramp (upper Eifelian) to a carbonate platform (lower Givetian). About 6,350 ostracods were extracted. Forty species (19 in open nomenclature) are recognized in the Rivière Fm. and 48 species (27 in open nomenclature) in the Névremont Fm. They belong exclusively to the Eifelian Mega-Assemblage and their distribution is controlled mainly by water energy and salinity variations. The sedimentological analysis and the

study of ostracods are in good agreement with recent conodont study of Gouwy & Bultynck (2003). Our work confirms the position of the Rivière and Névremont formations boundary and highlights a gap of the major part of the Hanonet and Trois-Fontaines formations of the southern Dinant Synclinorium. This hiatus is probably associated with the lowstand systems tract at the Eifelian-Givetian boundary interval in northern France and southern Belgium (Préat, 2004). The presence of *Quassilites fromelennensis* and *Jenningsina heddebauti*, indicates that a great part of the transitional zone of Gouwy & Bultynck (2003) is of Givetian age.

101. Préat, A., Morano, S., Loreau, J., Durllet, C., & Mamet, B. (2006). Petrography and biostratigraphy of the Rosso Ammonitico Veronese (Middle-Upper Jurassic, Northeastern Italy) *Facies*, 52, 265-278.

2005

102. Mamet, B., & Préat, A. (2005). Why is 'red marble' red ? *Revista Espanola de Micropaleontologia.*, 37(1), 13-21.
103. Mamet, B., & Préat, A. (2005). Microfaciès d'une lentille biohermale à la limite Eifélien-Givétien (Wellin, bord sud du Synclinorium de Dinant). *Geologica Belgica*, 8(3), 85-111.
104. Casier, J.-G., Lebon, A., Mamet, B., & Préat, A. (2005). Ostracods and lithofacies close to the Devonian-Carboniferous boundary in the Chanxhe and Rivage sections, northeastern part of the Dinant basin, Belgium. *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 75, 95-126.
105. Mamet, B., & Préat, A. (2005). Sédimentologie de la série viséenne d'Avesnes-sur-Helpe (Avesnois, Nord de la France) *Geologica Belgica*, 81(2), 91-107.

2004

106. Casier, J.-G., Mamet, B., Sandberg, C., & Préat, A. (2004). Ostracods and sedimentology of the D/C transition beds in the Anseremme railway bridge section, Dinant basin, Belgium. *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 74, 45-68.
107. Casier, J.-G., Mamet, B., Préat, A., & Sandberg, C. C. (2004). Sedimentology, conodonts and ostracods of the Devonian - Carboniferous strata of the Anseremme railway bridge section, Dinant Basin, Belgium *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 74, 45-68.

Abstract: Seven major carbonate microfacies are defined in the Devonian - Carboniferous (D/C) strata (50 m) of the Anseremme railway bridge section, south of Dinant. They permit recognition of several levels encompassing the Etroeungt and Hastière formations. "Bathymetric" sequences range from open marine, below the storm wave base, to semi-restricted lagoon. This sequence records a shallowing-upward trend of the relative sea level, from environments below the storm wave base to strongly eroded supratidal pre-evaporitic environments. Faunal components (echinoderms, brachiopods...) indicate open-marine domain for the first six microfacies located within the dysphoticeuphotic zone in relatively shallow waters. The textures of the rocks (mudstones to rudstones) associated with lamination characteristics indicate the position of the storm (SWB) and the fair-weather (FWWB) wave bases. Microfacies seven suggests a semi-restricted platform with salinity fluctuations from hypersaline brines to brackish waters. Thus, the boundary of the Etroeungt/Hastière formations is marked by an abrupt drop in sea level. Carbonate micro-conglomerates recording an important erosive phase and a sedimentary hiatus. The environment is again open marine in the upper part of the Hastière Formation. Our conclusion is that the Anseremme section

is not a reliable continuous succession for the study of the D/C boundary. This confirms the VAN STEENWINKEL (1988, 1993 hypothesis based on other arguments. Conodont faunas demonstrate that the Devonian sequence spans the five youngest conodont zones, but that two of these zones are not represented. The Epinette Formation is dated as the youngest part of the Middle expansa Zone. Thus, the boundary with the Late praesulcata Zone probably coincides with the sharp sedimentological change at the base of the Etroeungt Formation, which is interpreted to belong entirely to this zone. The disconformably overlying basal bed 159 of the Hastière Formation is dated as Late praesulcata Zone, with the Early and Middle praesulcata Zones unrepresented because of an hiatus or unconformity. Sparse conodont faunas suggest that only the two next-to-oldest Carboniferous duplicata and sandbergi Zones are represented in the higher part of the Hastière Formation. The oldest Carboniferous sulcata Zone and possibly part of the duplicata Zone are unrepresented because of an hiatus or unconformity above bed 159. Ostracods are abundant and diversified at most levels in the Anseremme railway bridge section and sixty taxa, the majority in open nomenclature, have been identified and nearly all of them are figured. The ostracod fauna is indicative of shallow-marine environments between fair-weather and storm wave bases in the Etroeungt Formation, and to shallower water conditions periodically subjected to minor salinity variations in the base of the Hastière Formation. The upper part of the Hastière Formation is marked by a sea-level rise associated with a moderate decrease of the oxygenation of bottom waters. The intra-Devonian hiatus at the Etroeungt-Hastière boundary shows no abnormal extinctions and no appearance of new taxa. Thus, the Hangenberg Event is not recognizable in the studied section. Neither the sedimentological analysis nor the palaeontological study of the Bocahut quarry in the Avesnois and of the Anseremme railway bridge section confirm the hypothesis of a highstand for the Hastière Formation.

2003

108. Han, G., Yans, J., Goudalier, M., Lacquement, F., Corfield, R., Mansy, J.-L., Boulvain, F., & Préat, A. (2003). Recognition and implication of tectonic loading induced reheating in the northern Variscan front (Belgium and northern France) based on an illite Kubler index and oxygen isotope study *International journal of earth sciences*, 92(3), 348-363.
109. Mamet, B., & Préat, A. (2003). Sur l'origine de la pigmentation de l'Ammonitico Rosso (Jurassique, région de Vérone, Italie du Nord) *Revue de micropaléontologie*, 46(1), 35-46.
110. Casier, J.-G., & Préat, A. (2003). Ostracods and lithofacies of the Devonian-Carboniferous boundary series in the Avesnois, North of France. *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 73, 83-107.
111. Mamet, B., & Préat, A. (2003). Sur les difficultés d'interprétation des hiatus stratigraphiques (exemple tiré de la transition dévono-carbonifère, Bassin de Dinant). *Geologica Belgica*, 6(1-2), 49-65.
112. Casier, J.-G., & Préat, A. (2003). Ostracods and lithofacies of the Devonian-Carboniferous boundary beds in the Avesnois, North of France *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 73, 83-107.

Abstract: Seven major carbonate microfacies are defined in the Devonian-Carboniferous (D-C) transitional strata (90 m) of the Bocahut quarry (Avesnes "basin"), and ten levels ranging through the Epinette, Etroeungt, Avesnelles and Hastière formations are recognized. The "bathymetric" sequences range from open marine spiculite, below the storm wave base to semi-restricted lagoon. A standard sequence records a shallowing-upward trend, from environments below the storm wave base to strongly eroded supratidal pre-evaporitic environments. Faunal components (echinoderms, brachiopods...) point to an open marine domain for the first six microfacies. Except for the "black"

mudstones of microfacies containing rare algae, the environment is located within the dysphotic-euphotic zone. Ostracods are abundant and diversified throughout the studied section. Sixty-six species are identified and belong to an assemblage of the Eifelian ecotype indicating oxygenated shallow marine environments generally between storm and fair-weather wave bases. The absence of some platycopid ostracods at the base of the Hastière Formation could be related to the hiatus observed between the Avesnelles and Hastière formations. That hiatus probably corresponds to the Hangenberg Event; however, its effect on the distribution of ostracods was very reduced. Ostracods and sedimentology show that the Bocahut quarry displays the most complete succession presently known through the D-C transition in Northern France (Avesnes "basin") and Southern Belgium (Dinant basin) although it is far from being continuous. Two new species are described: *Sacclatia? advena* nov. sp. and *Healdianella dorsosulcata* nov. sp.

113. Mamet, B., & Pr at, A. (2003, janvier). Sur l'origine bact erienne et fongique de la pigmentation de l'Ammonitico Rosso (Jurassique, r gion de Verone, Italie du nord) *Revue de micropal eontologie*, 46(1), 35-46. doi:10.1016/S0035-1598(03)00006-0

Abstract: Fourteen sections in the Ammonitico Rosso Veronese (Callovian to Tithonian, Trento altpiano) disclose the presence of diverse facies ranging from pelagic to outer platform. In spite of this diversity, red limestones are present at different levels. Many microfacies are similar to those observed in other Paleozoic and Mesozoic red carbonates with an abundance of hematitic bioconstructions. We therefore postulate that the origin of the pigmentation is similar in all the studied cases and due to the activity of iron-oxidizing bacteria. Nevertheless, 2 notable differences are observed: the presence in the Ammonitico Rosso of manganese and the existence of in situ bacterial-fungal mats in the matrix. These "algal" mats can represent up to 20% of the sediment. Their excellent preservation (absence of packing down or crushing) is due to the slow sedimentation rate of the pelagic sediments or of the hardgrounds.   2003  ditions scientifiques et m dicales Elsevier SAS. All rights reserved.

https://dipot.ulb.ac.be/dspace/bitstream/2013/170798/1/Elsevier_154428.pdf

2002

114. Devleeschouwer, X., Herbosch, A., & Pr at, A. (2002, juin). Microfacies, sequence stratigraphy and clay mineralogy of a condensed deep-water section around the Frasnian/Famennian boundary (Steinbruch Schmidt, Germany) *Palaeogeography, palaeoclimatology, palaeoecology*, 181(1-3), 171-193. doi:10.1016/S0031-0182(01)00478-3

Abstract: A multidisciplinary analysis (microfacies, sequential stratigraphy and clay mineralogy) was made on Frasnian/Famennian (F/F) boundary strata of the Steinbruch Schmidt section in Western Germany. Three major microfacies are recognised. Their succession records a shallowing-upward evolution from deep, quiet and poorly oxygenated environments, below the storm wave base, to environments influenced by current activities close to the storm wave base. The Kellwasser Horizons correspond to the deepest microfacies. The shallowest microfacies correspond to fine-grained calcareous tempestites or turbidites coming from a distant shelf of northwest Germany. The sequential pattern through the F/F boundary shows the succession of seven systems tracts. Two sequence boundaries are located just above the Lower Kellwasser Horizon and at the F/F boundary itself. These are underlined by hardgrounds suggesting time gaps. The Kellwasser Horizons correspond to sea-level highstands and the overlying beds record a transition from lowstand to transgressive systems tracts. Illite and kaolinite are the dominant clay minerals associated with mixed layers and traces of chlorite. Illite abundance is maximal during Kellwasser Horizons. Illite and kaolinite were probably inherited from a highly weathered source area although part of the illite is diagenetic. Kaolinite is the second most abundant clay mineral and is particularly well represented (up to 50%) between the Kellwasser Horizons. An unusual clay assemblage of illite and mixed layers is associated with a bentonite layer. Kaolinite increases during times when thin tempestites

or turbiditic microbioclastic layers come from a distant shelf during sea-level falls. The kaolinite percentage reaches its maximum at the top of the lowstand systems tract. The high percentage of kaolinite suggests a hot-wet climate and could be related to global warming. © 2002 Elsevier Science B.V. All rights reserved.

https://dipot.ulb.ac.be/dspace/bitstream/2013/184605/1/Elsevier_168232.pdf

115. Chen, D., Tucker, M., Shen, Y.-T., Yans, J., & Prétat, A. (2002). Carbon isotope excursions and sea-level change: implications for the Frasnian-Famennian biotic crisis *Memoirs of the Geological Society of London*, 159, 623-626.
116. Casier, J.-G., Devleeschouwer, X., Lethiers, F., Prétat, A., & Racki, G. (2002). Ostracods and fore-reef sedimentology of the Frasnian-Famennian boundary beds in Kielce (Holy Cross Mountains, Poland) *Acta Palaeontologica Polonica*, 47(2), 227-246.
117. Devleeschouwer, X., Herbosch, A., & Prétat, A. (2002). Microfacies, sequence stratigraphy and clay mineralogy of a condensed deep-water section around the Frasnian/ Famennian boundary (Steinbruch Schmidt, Germany) *Palaeogeography, palaeoclimatology, palaeoecology*, 181(1-3), 171-193.
118. Kolo, K., Mamet, B., & Prétat, A. (2002). Dichotomous filamentous dolomite crystal growth in the Lower Carboniferous from Northern France: A possible direct production of fungal activity? *Aardkundige mededelingen*, 12, 117-120.
119. Han, G., Yans, J., Goudalier, M., Lacquement, F., Corfield, R., Mansy, J.-L., Boulvain, F., & Prétat, A. (2002). Recognition and implication of tectonic loading re-heating in the Late Paleozoic succession of the Dinant Synclinorium (Belgium, France), based on an illite crystallinity and oxygen isotope study. *Aardkundige mededelingen*, 12, 97-98.
120. Mamet, B., & Prétat, A. (2002). Sur les difficultés d'interprétation des hiatus stratigraphiques. *Aardkundige mededelingen*, 12, 121-123.
121. Casier, J.-G., Lethiers, F., & Prétat, A. (2002). Ostracods and sedimentology of the La Serre Devonian/Carboniferous stratotype section (La Serre, Montagne Noire, France) *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 72, 43-68.
122. Han, G., Prétat, A., Yans, J., Goudalier, M., Lacquement, F., Mansy, J.-L., Corfield, R., & Boulvain, F. (2002). Recognition and implication of tectonic loading re-heating in the late Palaeozoic succession of the Dinant synclinorium (Belgium, N France) based on an illite crystallinity and oxygen isotope study *Aardkundige mededelingen*, 12, 97-98.

2001

123. Boulvain, F., De Ridder, C., Gillan, D., Mamet, B., & Prétat, A. (2001). Iron microbial communities in Belgian Frasnian carbonate mounds *Facies*, 44, 47-60.
124. Casier, J.-G., Lethiers, F., & Prétat, A. (2001). Ostracods and rock facies associated with the Devonian-Carboniferous boundary series in the Puech de la Suque section, Montagne Noire, France. *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 71, 31-52.

2000

125. Han, G., Préat, A., Chamley, H., Deconinck, J. F., & Mansy, J.-L. (2000). Palaeozoic clay mineral sedimentation and diagenesis in the Dinant and Avesnes Basins (Belgium, France): relationship with Variscan tectonism *Sedimentary geology*, 136(3-4), 217-238. doi:10.1016/S0037-0738(00)00103-2

Abstract: Clay mineral investigations have been performed on more than 500 limestones and shales sampled in Lower Devonian (Emsian) to Lower Carboniferous (Namurian) outcrops in the Dinant and Avesnes Basins (Ardenne Massif, NW Europe). Clay mineral data have been placed in the palaeoenvironmental and structural histories documented by previous lithological, stratigraphical, palaeontological, diagenetic and tectonic contexts. The clay associations are dominated by illite and chlorite derived partly from the erosion of land masses surrounding the marine domain. The geothermal gradient estimated from correlation with conodont colour alteration index ranges between 40 and 70°C/km. A diachronous northwards migration of the diagenesis/metamorphism interface links to uplift caused by Late Carboniferous compressional folding and overthrusting. Associated clay minerals include smectite, locally preserved from diagenetic changes mainly by early pore closure, that reflect lagoonal or quiet offshore marine conditions. Smectite and subordinate kaolinite abundances decrease upwards during the Devonian in three successive intervals suggesting alternations of sub-arid to drier climates. The local occurrence of corrensites (ordered chlorite-smectite mixed-layer) is attributed to the moderate diagenetic transformation of pre-existing smectite (C) 2000 Elsevier Science B.V. All rights reserved.

126. Préat, A., Mamet, B., De Ridder, C., Boulvain, F., & Gillan, D. (2000). Iron Bacterial and fungal mats, Bajocian stratotype (Mid-Jurassic, northern Normandy, France) *Contributions to Sedimentary Geology*, 137(3-4), 107-126.
127. Sebbar, A., Préat, A., & Mamet, B. (2000). Microfaciès et biozonation de la rampe mixte carbonifère du bassin de Tindouf, Algérie *Bulletin des Centres de recherches exploration-production Elf-Aquitaine. Mémoire*, 22(2), 203-239.
128. Gillan, D., Warnaud, M., De Vrind- De Jong, E., Boulvain, F., Préat, A., & De Ridder, C. (2000). Iron Oxidation and Deposition in the Biofilm Coverign *Montacuta ferruginosa* (Molusca bivalvia) *Geomicrobiology journal*, 17, 141-150.
129. Sebbar, A., Préat, A., Mamet, B., & Nedjari, A. (2000). Microfaciès et modèle sédimentaire du Carbonifère (Serpukhovien-Moscovien inférieur) du bassin de Reggane (Sahara Central, Algérie) *Bulletin - Office national de la géologie*, 11(1), 61-105.
130. Casier, J.-G., Devleeschouwer, X., Lethiers, F., Préat, A., & Racki, G. (2000). Ostracods and sedimentology of the Frasnian-Famennian boundary beds in the Kostomloty section (Holy Cross Mountains, Poland) *Bulletin - Institut royal des sciences naturelles de Belgique. Sciences de la terre*, 70, 53-74.
131. Sebbar, A., Préat, A., Mamet, B., & Nedjari, A. (2000). Microfaciès et modèle sédimentaire du Carbonifère (Serpukhovien-Moscovien inférieur) du bassin de Reggane (Sahara Central, Algérie) *Bulletin de la Sous-Direction de la géologie*, 11(1), 61-105.
132. Sebbar, A., Préat, A., Mamet, B., & Nedjari, A. (2000). Microfaciès et modèle sédimentaire du Carbonifère (Serpukhovien-Moscovien inférieur) du bassin de Béchar (Sahara Septentrional, Algérie) *Bulletin de la Sous-Direction de la géologie*, 10(1), 159-211.

133. Gillan, D., Warnau, M., De Vrind- De Jong, E., Boulvain, F., Préat, A., & De Ridder, C. (2000). Iron oxidation and deposition in the biofilm covering *Montacuta ferruginosa* (Mollusca, Bivalvia) *Geomorphology*, 17(2), 1-10.

Abstract: The shell of the bivalve *Montacuta ferruginosa* is covered with a rust-colored biofilm. This biofilm includes filamentous bacteria and protozoa encrusted with a mineral, rich in ferric ion and phosphate. The aim of this research was to study two possible microbial iron precipitation pathways in the biofilm, namely, microbial iron oxidation and microbial degradation of organic Fe(III) complexes. The iron-oxidizing activity was assayed spectrophotometrically by monitoring the formation of the dye Wurster blue in biofilm extracts. Iron-oxidizing activity was effectively detected in extracts obtained by oxalic acid treatment of biofilm fragments. Extracts obtained without oxalic acid treatment, heated extracts, or extracts supplemented with H(g)Cl₂ did not show any activity. This suggests that an iron-oxidizing factor (IOF), possibly an enzyme, coprecipitated with the mineral. Additional information gathered by using sodium dodecyl sulfate-polyacrylamide gel electrophoresis, gel-filtration chromatography, and UV spectrophotometry indicate that the IOF would be a small peptide or glycopeptide (1,350 Da). Microbial degradation of organic Fe(III) complexes was assayed with biofilm fragments incubated in a medium containing ferric citrate. Analysis of the supernatants after various intervals revealed that the complex was degraded by living microorganisms much faster than in the heat-killed negative controls. We conclude that ferric iron precipitation in the biofilm may proceed by way of microbial Fe(II) oxidation as well as microbial degradation of organic Fe(III) complexes.

1999

134. Mamet, B., Préat, A., & Lehmami, M. (1999, décembre). Algues calcaires marines du devonien Marocain (meseta) *Revue de micropaléontologie*, 42(4), 301-314.

Abstract: Brief description of Devonian algal microflora observed in open marine, semi-restricted and restricted environments compared with the French-Belgian Devonian. The abundance and fair preservation of the Sphaerocodiaceans permit erection of two new genera (*Pseudosphaerocodium* et *Sphaerocodiella*) and three new species (*Sphaerocodium tortuosum*, *Pseudosphaerocodium halysiformis*, *Sphaerocodiella punctata*).

135. Préat, A., Mamet, B., Bernard, A., & Gillan, D. (1999, juillet). Bacterial mediation, red matrices diagenesis, Devonian, Montagne Noire (southern France) *Sedimentary geology*, 126(1-4), 223-242. doi:10.1016/S0037-0738(99)00042-1

Abstract: Two Devonian red carbonate rock sections are studied in the Montagne Noire, at Coumiac (Frasnian/Famennian) and at the Pic de Vissou (Eifelian/Givetian). The sediments are grey-red mudstones and wackestones rich in pelagic fossils. They are characteristic of an outer ramp. The Coumiac sequence is condensed with numerous hardgrounds and hiatuses. The Pic de Vissou succession is more complete and shallower origin. In both cases, the origin of the red coloration of the micritic matrix is probably linked to bacterial activity which produced submicronic hematite. Both iron and manganese concentrations are low (average 0.2%). Bacteria from ferruginous microstromatolites, blisters, microtufts, 'hedgehogs' filling sponge perforations and thin continuous mineralized films (probably biofilms). Hardgrounds are underlined by ferruginous microstromatolites. The origin of the matrix color is probably related to the destruction of these bacterial constructions, the submicronic hematite ultimately coating the crystal faces of the calcite mosaic. During early lithification, microfissures appeared and were invaded by microbial colonies. Scanning electron microscopy (SEM) shows that these colonies are composed of spheroidal beads. This suggests continuity of the bacterial activity during early diagenesis. Later on, these early fissures were cut by burrows. Subsequently a secondary fissure network transected all the previously mentioned sedimentary structures. This late fissure network is characterized by

diagenetically remobilized hematite and/or calcite. The latest alterations are stylolites and ultimate tectonic fractures.

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136. Mamet, B., Préat, A., & Lehmami, M. (1999). Algues calcaires marines du Dévonien marocian (Meseta) *Revue de micropaléontologie*, 42(4), 301-314.
137. Préat, A., Mamet, B., Gillan, D., & Bernard, A. (1999). Microbial mediation in carbonate diagenesis of red matrices in the Devonian of Montagne Noire (South of France) *Sedimentary geology*, 129, 223-242.
138. Préat, A., Dumoulin, V., & Bertrand, M. (1999). Sédimentologie et analyse séquentielle de la Formation de Philippeville (Frasnien moyen) des coupes de Pry et de Laneffe (Synclinorium de Dinant). *Bulletin de la Société belge de géologie*, 105(3-4), 119-137.
139. Dumoulin, V., Bertrand, M., & Préat, A. (1999). Microfaciès et cyclicité au sein d'un complexe biostromal du Frasnien moyen à Cerfontaine "Massif de Philippeville", Synclinorium de Dinant, Belgique. *Bulletin de la Société belge de géologie*, 105(3-4), 99-118.

1998

140. Weis, D., Herbosch, A., & Préat, A. (1998). Geochemistry and Sr-isotopic geo-chemistry of the F/F boundary Coumiac section (France): inferences for sea-level variations *Mineralogical magazine*, 62, 1645-1646.
141. Préat, A., Mamet, B., Bernard, A., & Gillan, D. (1998). Role des organismes microbiens dans la formation des matrices rougeâtres paleozoïques: Exemple du devonien, montagne noire *Revue de micropaléontologie*, 42(2), 161-182.

Abstract: The Middle and Upper Devonian red 'griottes' limestones of the Montagne Noire (South of France) are deposited on a distal hemipelagic outer ramp, well below the storm wave base and the photic zone, by more than about a hundred meters of water, in poorly oxygenated environments. The red coloration of the micritic matrix is probably related to bacterial activity, and more specifically to iron-bacteria linked to the Siderocapsaceae. These bacterial communities formed benthic microtufts and mats which trapped the ferrous iron. The destruction of these mineralogical-microbial communities allowed dispersion of the submicronic hematite in the micritic matrices. In other European Paleozoic red carbonate matrices ('griottes'), the red pigmentation is also related to iron-bacteria similar to the Recent Beggiatoales and Siderocapsaceae

142. Préat, A., Mamet, B., & Devleeschouwer, X. (1998). Sédimentologie du stratotype de la limite Frasnien-Famennien (Coumiac, Montagne Noire, France) *Bulletin de la Société géologique de France*, 169(3), 331-342.

Abstract: The Devonian Coumiac carbonate series is well known since it is the point reference in time for the Frasnian-Famennian boundary. Its fossil content has been extensively studied, in particular conodonts, ammonoids and trilobites. However, little attention has been paid to its sedimentology and sequence interpretation. The succession is condensed, as the Frasnian is reduced to 20-30 metres of red and grey argillaceous and micritic carbonates. Four microfacies are recognized. MF1 is a shale and argillaceous mudstone rich in radiolarians. MF2 is a sponge wackestone/bafflestone with variable amounts of tentaculites. MF3 is a laminated wackestone/packstone with tentaculites, ammonoids and bivalves. MF4 is a crinoidal packstone. Numerous (more than 20) hardgrounds are underlined by the presence of hematite concentrations, ferruginous

microstromatolites, bioerosions and microbreccias. Their number increases from bottom to top and reaches a maximum at the F/F boundary. Some shallow water re-sedimented fauna and flora (stromatoporoids, calcispheres, cyanobacteria, blue green algae) are present. Some are reworked microbreccias derived from a distant ramp, some are rafted elements. Despite the difficulty of establishing a bathymetric sequence, the ordering of the sequence is established using mostly sedimentological criteria e.g. tempestite laminations, graded-bedding, granulometry. They allow to recognize a distal-proximal gradient. MF1 is the deepest facies, just below the storm wave base, without evidence of turbidites or mudflows. MF2 and MF3 are still below fair-weather wave base, most of the sponge bafflestones of MF2 being in situ. MF3 is composed of reworked hemipelagic fauna (tentaculites/ammonoids). Both are still below the photic zone. MF4 is near fair-weather wave base and reaches the photic zone. Fossils are derived from the destruction of nearby crinoidal meadows. The Coumiac succession is a distal carbonate ramp, its lower part being characterized by hemipelagic sedimentation. The remainder of the series is a progressive regression punctuated by six important eustatic fluctuations. The red pigmentation is caused by ferro-oxidizing bacterial activity. Hematite is present in hardgrounds, sponge perforations, omcooids, simple and complex microstromatolites, dichotomic tufts and mud cracks. These bacterial bioconstructions seem to develop a very quiet dysaerobic waters associated to important sequential fluctuations. The bioconstructions indicate mostly calm sedimentation, well below the photic zone and in poorly oxygenated waters. This work shows also the importance of hiatuses associated to the F/F boundary.

1997

143. Mamet, B., Préat, A., & De Ridder, C. (1997). Bacterial Origin of the Red Pigmentation, Devonian Slivenec Limestone *Facies*, 36, 47-51.
144. Casier, J.-G., Lehmami, M., & Préat, A. (1997). Ostracodes et sédimentologie du Givétien à Ain Khira (Meseta nord-occidentale du Maroc) *Revue de paléobiologie*, 16(1), 151-167.

Abstract: Fifty ostracod species, of which 44 are figured herein, have been identified in the Givetian of the Ain Khira section located in the NW Meseta of Morocco. These species belong to the Eifelian ecotype and are indicative of a well oxygenated shallow marine environment near fair-weather wave base and temporary, in the upper part of the section, near storm wave base. Assemblages rich in *Coeloenellina* POLENOVA, 1952. are indicative of semi-restricted water conditions on the inner ramp. The study of ostracods don't prove the existence of lagoonal water conditions unlike the sedimentological study. However the occurrence of marine ostracods in lagoonal environments can be explained by sea incursions during exceptional events as storms or spring tides. The occurrence of *Polyzygia beckmanni* KRÖMMELBEIN, 1954, in the upper part of the section proves that a large part of the Givetian is present at Ain Khira.

145. Mamet, B., Préat, A., & De Ridder, C. (1997). Bacterial origin of the red pigmentation in the Devonian Slivenec Limestone, Czech Republic *Facies*,(36), 173-187.

Abstract: The deep-red lenses of the Pragian Slivenec Limestone have been extensively quarried for ornamental purposes since the XIIIth century. Petrographic microscope observations indicate that the hematite stainings of the limestone follow ten different patterns. They range from massive non-directional filling of cavities to mineralized films and microstromatolites. Numerous iron-rich endoliths are observed. Some could be derived from bacterial or lichen perforations and some related to ferric bacteria. Infiltration along welded calcite crystals, regular mineralized films and microstromatolites suggest a ferric bacterial origin for the pigment. This is confirmed by scanning microscope examinations of polished sections, that show hematite concentrations along micrometric filamentous sheaths.

146. Casier, J.-G., Lehmani, M., & Préat, A. (1997). Ostracodes et sédimentologie du givétien à Ain Khira *Revue de paléobiologie*, 16(1), 151-167.

1996

147. Kasimi, R., & Préat, A. (1996). Sédimentation de rampe mixte silico-carbonatée des couches de transition eiféliennes-givéliennes franco-belges: Deuxième partie : Cyclostratigraphie et paléostructuration *Bulletin des Centres de recherches exploration-production Elf-Aquitaine. Mémoire*, 20(1), 61-90.
148. Casier, J.-G., & Préat, A. (1996). Ostracodes et sédimentologie au passage Eifélien/Givélien dans la Marbrière du Pic de Vissous *Bulletin des Centres de recherches exploration-production Elf-Aquitaine. Mémoire*, 20(2), 367-387.
149. Préat, A., & Carliez, D. (1996). Microfaciès et cyclicité dans le Givélien supérieur de Fromelennes (Synclinorium de Dinant, France). *Annales de la Société géologique de Belgique*, 117(1), 227-243.

Abstract: The focus of this paper is on the small-scale cyclicity of the Fromelennes Formation (upper Givetian), and how stacking patterns of meter-scale cycles (fifth-order cycles) can be used to define internal components of a larger-scale sequence (third-order) and estimate variations in relative sea level. Thirty-seven asymmetric parasequences (5th order cycles, averaging 2 m) are recognized and show two basic patterns: an upward-fining and -thinning parasequence (or, 'ufth'), and an aggradational parasequence (or, 'as'). Their stacking pattern allows recognition of six parasequences sets (PSQS1 to PSQS6) which are used to identify the upper part of a transgressive systems tract and the lower part of a highstand systems tract. Five periods of sea level fluctuations affected the very shallow part of a carbonate platform dominated by small-sized coral and stromatopoid bioconstructions and extensive stromatolitic and codiacean algal mats.

1995

150. Casier, J.-G., Kasimi, R., & Préat, A. (1995). Les ostracodes au passage Eifélien/givélien à Glageon (Avesnois, France) *Geobios*, 28(4), 487-499. doi:10.1016/S0016-6995(95)80025-5

Abstract: Fifty-six ostracod species are recognized in the Hanonet Formation (Upper Eifelian) and in the lowermost Trois-Fontaines Formation (Lower Givetian) of the Glageon Quarry (Southern border of the Dinant Basin, Avesnois, Northern France). The ostracods belong to the Eifel ecotype sensu Becker (in Bandel & Becker, 1975) and two assemblages are recognized: 1. assemblage III characterizes a relatively quiet marine environment below wave base on the mid-ramp setting (Hanonet Formation); 2. assemblage II characterizes a shallow marine environment above wave base on the inner-ramp (lower part of the Trois-Fontaines Formation). Comparatively with other outcrops from the Southern border of the Dinant Basin, the sea level fluctuations were of very low amplitude near the Eifelian/Givetian boundary at Glageon. The study of sediments in Glageon is consistent with the data from ostracods. © 1995.

https://dipot.ulb.ac.be/dspace/bitstream/2013/126434/1/Elsevier_107990.pdf

151. Préat, A., & Kasimi, R. (1995). Sédimentation de rampe mixte silico-carbonatée des couches de transition eiféliennes-givéliennes franco-belges: Première partie: microfaciès et modèle sédimentaire *Bulletin des Centres de recherches exploration-production Elf-Aquitaine. Mémoire*, 19(2), 329-375.

Abstract: The Belgian carbonate-dominated Devonian series, about 1.5 km thick, shows the succession of silico-carbonate ramp systems and carbonate platforms with slight slope and no

real barrier. This article consists of a systematic study of the Belgian-French Upper Eifelian-Lower Givetian stratigraphic interval (*Tortodus kockelianus* and *Polygnathus ensensis conodont* zones). A sedimentological model for this Eifelian-Givetian, argillaceous carbonate succession enables the recognition of 10 major microfacies. They range from the open marine (below the storm-wave base) to reefal complexes, open lagoons and peritidal environments near subaerial exposure. The sedimentary model consists of a homoclinal, storm-influenced ramp system showing a large shoreface extension. The cyclostratigraphical analysis of these Eifelian-Givetian facies will specify the evolution of the third order eustatic curve and establish the palaeotectonic structure of the studied area. -from English summary

1994

152. Préat, A., & Weis, D. (1994). Variations du niveau marin dans le Dévonien carbonaté de Belgique: approches sédimentologique et séquentielle (première partie) *Bulletin de la Société géologique de France*, 165(5), 469-483.
153. Mamet, B., & Préat, A. (1994). Algues calcaires de l'Eifélien Inférieur (Calcaire de Couvin, Synclinorium de Dinant) *Revue de micropaléontologie*, 37(2), 135-159.
154. Mamet, B., Préat, A., & Roux, A. (1994). Sur la présence de *Gymnocodium* (Algue) dans le Dévonien Moyen (Synclinorium de Dinant, Belgique) *Geobios*, 175-180.
155. Weis, D., & Préat, A. (1994). Variations du niveau marin dans le Dévonien carbonaté de Belgique: approches géochimique et isotopique (Sr,C et O) (deuxième partie) *Bulletin de la Société géologique de France*, 165(5), 485-497.

1993

156. Tourneur, F., Vanguetstaine, M., Buttler, C., Mamet, B., Poty, E., & Préat, A. (1993). A preliminary study of the Ashgill carbonate beds from the lower part of the Fosses Formation (Condruz, Belgium) *Geological magazine*, 130(5), 673-679. doi:10.1017/S0016756800020987

Abstract: The sedimentology and palaeontology of carbonate beds in the lower part of the Fosses Formation (Ashgill of the Condruz area, central Belgium) have been investigated. Two depositional interpretations are suggested: deposition either near a platform-ramp margin as bioclastic turbidites and interbedded shales or on a shelf as a transgressive sequence following a regressive event. Faunal affinities with the Baltic area and Wales are confirmed, and the location of Belgium in the tropics during the Ashgill is supported by the calcareous algae and the coral fauna. © 1993, Cambridge University Press. All rights reserved.

157. Préat, A., & Racki, G. (1993). Small-scale cyclicity sedimentation in the Early Givetian of the Gory Swietokrzyskie Mountains: Comparison with the Ardenne sequence *Annales Societatis Geologorum Poloniae*, 63, 13-31.
158. Vennin, E., Soria, A., Préat, A., & Melendez, A. (1993). Analisis secuencial durante el intervalo Barremiense-Aptiense en la Cubeta de Oliete *Cuadernos de geología ibérica*, 17, 257-283.
159. Bertrand, M., Coen-Aubert, M., Dumoulin, V., Préat, A., & Tourneur, F. (1993). Sédimentologie et paléoécologie de l'Emsien supérieur et de l'Eifélien inférieur des régions de Couvin et de Villers-la-Tour (Bord Sud du Synclinorium de Dinant, Belgique) *Neues Jahrbuch für Geologie und Paläontologie. Abhandlungen*, 188(2), 177-211.

1992

160. Mamet, B., & Préat, A. (1992). Algues du Dévonien Moyen de Wellin (Synclitorium de Dinant, Belgique) *Revue de micropaléontologie*, 35(1), 53-75.
161. Casier, J.-G., Préat, A., & Kasimi, R. (1992). Ostracodes et sédimentologie du sommet de l'Eifélien et de la base du Givétien, à Couvin (bord sud du Bassin de Dinant, Belgique). *Bulletin - Institut royal des sciences naturelles de Belgique*, 62, 75-108.

1991

162. Boulvain, F., & Préat, A. (1991). Dynamique sédimentaire du Couvinien Supérieur au Frasnien Supérieur dans les Bassins de Namur et de Dinant (Belgique, France) *Annales de la Société géologique de Belgique*, 113(2), 125-126.
163. Casier, J.-G., & Préat, A. (1991). Evolution sédimentaire et Ostracodes de la base du Givétien à Resteigne (bord sud du Bassin de Dinant). *Bulletin - Institut royal des sciences naturelles de Belgique*, 61, 157-177.

1990

164. Casier, J.-G., & Préat, A. (1990). Sédimentologie et Ostracodes de la limite Eifélien-Givétien à Resteigne (bord sud du Bassin de Dinant, Belgique). *Bulletin - Institut royal des sciences naturelles de Belgique*, 60, 75-105.

1989

165. Préat, A. (1989). Sedimentology, facies and depositional environment of the Hanonet (Upper Eifelian) and Trois-Fontaines (Lower Givetian) Formations in Couvin area (Dinant basin, Belgium) *Bulletin de la Société belge de géologie*, 98(2), 149-154.
166. De Putter, T., & Préat, A. (1989). Sédimento-diagenèse de séquences émerives de type shallowing-upward dans la Grande Brèche calcaire du Viséen supérieur de Belgique *Comptes rendus de l'Académie des sciences. Série 2. Sciences de la terre et des planètes*, 309, 1827-1831.
167. Préat, A. (1989). Sedimentology, facies and depositional environment of the Hanonet (Upper Eifelian) and Trois-Fontaines (Lower Givetian) formations in Couvin area (Dinant Basin, Belgium) *Bulletin - Societe Belge de Geologie*, 98(2), 149-154.

Abstract: During Middle Devonian (Eifelian) times a major sea-level rise led to the development of an extensive siliciclastic-carbonate ramp over the Dinant and Namur basins. The evolution of this continental margin leads to a good understanding of shelf evolution from Eifelian to Frasnian times. An initial mixed ramp (Eifelian) consisting mainly of organic buildups and shoal-water complexes evolved into a carbonate progradational accretionary platform consisting of shallowing-upward subtidal to supratidal cycles that grade locally into evaporite-carbonate cycles along an arid coastline. This cyclic sedimentation was interrupted during a major event of incipient shelf drowning associated with backstepping of the rim and development of algal-sponge bioherms on a low-ramp continental slope environment. Microfacies analysis of the Hanonet and Trois-Fontaines formations shows that the transition from Eifelian to Givetian times is marked by an entire regressive progradational megasequence partly interrupted by minor transgressive phases. Three distinct zones can be recognized. -from Author

168. Préat, A., & Mamet, B. (1989). Sédimentation de la plate-forme carbonatée givétienne franco-belge *Bulletin des Centres de recherches exploration-production Elf-Aquitaine. Mémoire*, 13(1), 47-86.

Abstract: A sedimentological model for the Givetian carbonate succession of the Dinant and Namur basins enables recognition of 13 major microfacies. They range from the open marine, below wave action zone, to reefal complexes, lagoons, and evaporitic sabkhas. The rhythmic sedimentation is primarily controlled by subsidence which is in turn counterbalanced by algal carbonate production. -from English summary

1987

169. Mamet, B., & Pr at, A. (1987). Algues giv tiennes du bord sud du Bassin de Dinant et des r gions limitrophes *Annales de la Soci t  g ologique de Belgique*, 109, 431-454.
170. Pr at, A., Ceuleneer, G., & Boulvain, F. (1987). Etude s dimentologique des calcaires du Giv tien Inf rieur d'Olloy-sur-Viroin (bord sud du Bassin de Dinant, Belgique) *Annales de la Soci t  g ologique du Nord*, 251-265.

1986

171. Pr at, A., & Lapi re, S. (1986). D couverte d'un niveau de marbre blanc d' ge Frasnien   Gourdinne (Province de Namur, Belgique) *Bulletin de la Soci t  belge de g ologie*, 95(1), 65-71.
172. Pr at, A., & Boulvain, F. (1986). Les calcaires laminaires du Giv tien Inf rieur du Bassin de Dinant: t moins pal og ographiques et pal oclimatiques *Annales de la Soci t  g ologique du Nord*, 49-64.
173. Coen-Aubert, M., Pr at, A., & Tourneur, F. (1986). Compte-rendu de l'excursion de la Soci t  belge de G ologie du 6 novembre 1985 consacr e   l' tude du sommet du Couvinien et du Giv tien au bord sud du Bassin de Dinant, de Resteigne   Beauraing *Bulletin de la Soci t  belge de g ologie*, 95(4), 247-256.
174. Boulvain, F., & Pr at, A. (1986). Les calcaires laminaires du Giv tien Sup rieur du bord sud du Bassin de Dinant (Belgique, France): t moins d'une  volution pal oclimatique *Annales de la Soci t  g ologique de Belgique*, 109, 609-619.

Abstract: Laminar limestones, abundant in the Fromelennes Formation (Upper Givetian, Dinant Basin) are subtidal to supratidal deposits. Sedimentological analysis enables recognition of six microfacies, each of them characteristic of different environments in an extensive tidal flat complex. The sedimentation is controlled by the binding role of algal mats during flooding of the tidal flat. -from English summary

1985

175. Mamet, B., & Pr at, A. (1985). Sur la pr sence de Palaeomicrodium (Algue?, Incertae sedis) dans le Giv tien Inf rieur de Belgique *Geobios*, 18(3), 389-392.
176. Mamet, B., & Pr at, A. (1985). Sur quelques Algues Vertes nouvelles du giv tien de la Belgique *Revue de micropal ontologie*, 28(4), 67-74.
177. Mamet, B., Naisse, F., Perez, R. S., & Pr at, A. (1985). Frondilina tailferensis, n. sp. Un Foraminif re nouveau du Frasnien de la Belgique *Bulletin de la Soci t  belge de g ologie*, 94(4), 269-271.

178. Mamet, B., & Préat, A. (1985). *Triangulinella tricarinata*: une Paléobéréselle (Algue) nouvelle du Givétien de Belgique *Bulletin de la Société belge de géologie*, 94(1), 61-64.
179. Mamet, B., & Préat, A. (1985). Sur la présence de *Palaeomicrocodium* (Algue?, Incertae sedis?) dans le Givétien inférieur de Belgique *Geobios*, 18(3), 389-395.

Abstract: Describes the oldest recorded microcodiacean from the Early Givetian Alvaux Limestone (Namur Syncline, Belgium). *Palaeomicrocodium devonicum* Mamet & Roux characterizes very shallow water carbonates associated with *Sphaerocodium* mudmounds. Cenozoic contamination is excluded. © 1985.

1984

180. Herbosch, A., Cauet, S., & Préat, A. (1984). Réponse aux commentaires formulés par L. Dejonghe *Mineralium Deposita*, 19, 317. doi:10.1007/BF00204387
181. Préat, A., Coen-Aubert, M., Mamet, B., & Tourneur, F. (1984). Sédimentologie et paléoécologie de trois niveaux récifaux du Givétien Inférieur de Resteigne (bord sud du Bassin de Dinant, Belgique) *Bulletin de la Société belge de géologie*, 93(1), 227-240.

1983

182. Préat, A., Cauet, S., & Herbosch, A. (1983). Caractère épigénétique-étranger des gîtes filoniens Pb-Zn (Ba-F) du district du bord Sud du synclinorium de Dinant (Belgique) *Mineralium Deposita*, 18, 349-363.
183. Poels, J., & Préat, A. (1983). Mise en évidence d'une série évaporitique dans le Viséen inférieur de Vedrin (Province de Namur). *Bulletin de la Société belge de géologie*, 92(4), 337-350.

Abstract: The disused sphalerite-galena mine at Vedrin, Belgium, shows a 160 m-thick uninterrupted, well-stratified series of limestones and mainly dolostones. Several evaporitic horizons are characterized by pseudomorphous lenticular or lozenge-shaped gypsum and nodular anhydrite. Petrographic study distinguished 12 carbonate microfacies of sedimentary environments similar to supratidal sabkhas. The dynamic evolution is described on the basis of dolomitization in which pseudomorphs of lutecite and quartzine type occur. The Lower Visean at Vedrin can be compared with present-day sediments in the Persian Gulf.-R.V.T.

184. Préat, A., & Herbosch, A. (1983). Sédimentologie et lithogéochimie: exemple du Givétien du bord sud du Synclinorium de Dinant *Professional paper - Geological survey of Belgium*, 197, 71-123.
185. Mamet, B., & Préat, A. (1983). *Resteignella resteignensis*: une Phylloïde nouvelle du Givétien de Belgique *Bulletin de la Société belge de géologie*, 92(4), 293-300.

1982

186. Mamet, B., & Préat, A. (1982). *Givetianella tsienii*: une Dasycladacée nouvelle du Givétien de Belgique. *Bulletin de la Société belge de géologie*, 91(4), 209-216.
187. Mamet, B., Préat, A., & Boulvain, F. (1982). Sur la structure des Labyrinthoconidae (Algues problématiques, Givétien) *Annales de la Société géologique de Belgique*, 105, 283-287.

188. Préat, A., & Boulvain, F. (1982). Etude sédimentologique des calcaires givétiens à Vaucelles (bord sud du Bassin de Dinant) *Annales de la Société géologique de Belgique*, 105, 273-282.
189. Préat, A., & Boulvain, F. (1982). Etude sedimentologique des calcaires givétiens a Vaucelles (bord Sud du synclinorium de Dinant). *Annales, Societe Geologique de Belgique*, 105(2), 273-282.

Abstract: Detailed sedimentological study of the Vaucelles quarries allowed the definition of a standard sequence of 12 carbonate microfacies comparable to those of recent carbonate platform environments. The sedimentation depends essentially on the migration of tidal channels, the destruction of oolitic bars and the development of algal mats. Correlation by sequential analysis with the reference section of the Givet Group shows that the quarries correspond to the Trois-Fontaines Formation. However, the succession at Vaucelles appears in considerably reduced thickness, which may be due to the presence of a submarine high in this area.-from English summary

1979

190. Herbosch, A., De Witte, S., & Préat, A. (1979). Recherche sur les indices de minéralisations uranifères dans la région de Visé *Professional paper - Service géologique de Belgique*, 162.
191. Jedwab, J., & Préat, A. (1979). Présence de raspite (PbWO₄, Monoclinique) dans l'anthoinite (AlOH.WO₄.H₂O, Triclinique) de Gifurwe, Rwanda *Bulletin de la Société belge de géologie*, 88, 185-195.

Articles dans des revues sans comité de lecture (1)

1983

192. Herbosch, A., Cauet, S., & Préat, A. (1983). Recherche de métallotectes de nature géochimique pour la prospection des gîtes Pb-Zn belges *Professional paper - Service géologique de Belgique*, 197.

Communications publiées lors de congrès ou colloques nationaux et internationaux (55)

2011

193. Tack, L., Delpomdor, F., Kanda Nkula, V., Préat, A., Baudet, D., Dewaele, S., Fernández-Alonso, M. C., & Boven, A. (2011). The Neoproterozoic West Congo and Katanga Supergroups: Similarities and Differences Abstract session presented at Colloque international "La Quête des Ressources en Afrique centrale-2"(1-3 Decembre 2010: Tervuren, Belgique).
194. Préat, A., De Jong, J., De Ridder, C., Gillan, D., & Martire, L. (2011). Why is red marble red: could Fe-isotopes shed light on this question through the study of the Italian Ammonitico Rosso and Recent organisms ? Abstract session presented at Epitome 2011, Geotalia VIII Forum Italiano di Science della Terra(19-23 Septembre 2011: Italie).

2010

195. Préat, A. (2010). Research on iron isotopes in Phanerozoic red limestones with iron bacteria Abstract session presented at Revitalizing Research in Kurdistan(13-17 Decembre 2010: Erbil, Iraq).
196. Delpomdor, F., Devleeschouwer, X., blanpied, C., Schroeder, S., & Préat, A. (2010). Magnetic susceptibility and microfacies compared in Proterozoic carbonate sequences (Kasai Province, Democratic Republic of Congo) Abstract session presented at Strati2010(30 Aout- 02 Septembre 2010: Paris, France).
197. Devleeschouwer, X., Petitclerc, E., Spassov, S., & Préat, A. (2010). The Givetian-Frasnian boundary at Nismes parastratotype (Belgium): ferromagnetic minerals (magnetite and hematite) carrying the magnetic signal Abstract session presented at Strati2010(30 Aout - 02 Septembre 2010: Université Pierre et Marie Curie, Paris 6, France).
198. Devleeschouwer, X., Petitclerc, E., Hubert, B., Pinte, E., Maillet, S., Cronier, C., bignon, A., Spassov, S., & Préat, A. (2010). New insights from rock magnetism, sedimentology, reefal and peri-reefal fauna in the Mont d'Haurs and Fromelennes Formation (Late Givetian) at 'Cul d'Houille' section (Flohimont, France) Abstract session presented at Strati2010(30 Aout- 02 Septembre 2010: Université Pierre et Marie Curie, Paris 6, France).
199. Casier, J.-G., & Préat, A. (2010). Comments on Devonian GSSPs and on the Devonian / Carboniferous boundary Abstract session presented at Strati 2010(30 aout- 02 Septembre 2010: Université Pierre et Marie Curie, Paris 6, France).
200. Casier, J.-G., Devleeschouwer, X., Petitclerc, E., & Préat, A. (2010). Ostracods, microfacies and magnetic susceptibility of the lower part of the Givetian in the type-locality Abstract session presented at Strati2010(30 Aout- 02 Septembre 2010: Université Pierre et Marie Curie, Paris 6, France).
201. Devleeschouwer, X., Riquier, L., Averbuch, O., Herbosch, A., Tribovillard, N., & Préat, A. (2010). Rock magnetism, sedimentology, gamma-ray logging, clay mineralogy and geochemistry at the Frasnian-Famennian GSSP (Coumiac, Montagne Noire, France): a synthesis Abstract session presented at Strati2010(30 Augustus – 2 September 2010: Université P et M Curie, Paris 6, France).

2009

202. Casier, J.-G., Cambier, G., Devleeschouwer, X., Petitclerc, E., & Préat, A. (2009). Ostracods, rock facies and magnetic susceptibility of the Trois-Fontaines /Terres d'Haurs transition in the type locality for the Givetian Abstract session presented at Geological Society of America Annual Meeting(18-21 Octobre 2009: Portland, Oregon, USA).
203. Petitclerc, E., Devleeschouwer, X., Spassov, S., Casier, J.-G., & Préat, A. (2009). Givetian/Frasnian boundary (Nismes and Sourd d'Ave sections, Southern Belgium): tracing the magnetic mineralogy signal Abstract session presented at (20-23 Septembre 2009: Alghero, Italia).
204. Delpomdor, F., Tack, L., & Préat, A. (2009). Microstructures within probable glacial Neoproterozoic Diamicrites around the Congo River Basin in Democratic Republic of Congo: A comparative micromorphological study Abstract session presented at

(6-13 septembre 2009: Geol. Soc. London, Fermor Meeting, Rodinia, supercontinents, superplumes and Scotland).

205. Devleeschouwer, X., Cambier, G., Petitclerc, E., Casier, J.-G., & Préat, A. (2009). Givetian platform carbonates (Givet, France): rock magnetism, microfacies interpretation and ostracod study Abstract session presented at ASF(12: 25-31 Octobre 2009: Rennes).

2008

206. Delpomdor, F., Tack, L., & Préat, A. (2008). Microstructures in the Neoproterozoic tillites around the Congo River Basin (CRB), Democratic Republic of Congo (DRC): Comparison with the Karoo tillites from the Dekese borehole in the CRB Abstract session presented at CAG22, GSAf13(4-6 Novembre 2008: Hammamet, Tunisie).
207. Delpomdor, F., Préat, A., & Tack, L. (2008). Paleoenvironments of the Neoproterozoic carbonates in the Schisto-Calcaire Subgroup (C2 and C3) in Democratic Republic of Congo: lithostratigraphy and diagenesis Abstract session presented at CAG22, GSAf13(4-6 novembre 2008: Hammamet, Tunisie).

2007

208. Della Porta, G., Mamet, B., & Préat, A. (2007). Microbial mediation in the formation of red limestones, Upper Carboniferous, Cantabrian Mountains, Spain In T. E. Wong (Ed.), *Proceedings of the XVth International Congress on Carboniferous and Permian Stratigraphy* (pp. 243-250). Amsterdam: Royal Netherlands Academy of Arts and Sciences.

2006

209. Berra, I., Averbuch, O., & Préat, A. (2006). Erosion de la chaîne Antler et eutrophisation des eaux de bassin à la limite Frasnien-Famennien de la coupe de Devils Gate (USA, Nevada): une relation possible entre tectonique et crise biologique *Réunion des Sciences de la Terre* (p. 300). Société Géologique de France, Société française de minéralogie et cristallographie.
210. Préat, A., de Jong, J., Mattielli, N., & Mamet, B. (2006). Les isotopes du fer: apport à la biosédimentologie. Exemple de l'Ammonitico Rosso du Nord de l'Italie (Jurassique, région de Vérone) *Réunion des Sciences de la Terre* (p. 221). Société géologique de France, Société française de Minéralogie et de Cristallographie.
211. Casier, J.-G., El Hassani, A., & Préat, A. (2006). Ostracods and rock facies of the Eifelian/Givetian and Givetian/Frasnian boundary stratotypes *GSA Abstracts: Vol. 38* (7 ed., p. 552). Geological Society of America.
212. Préat, A. (2006). Le Givétien franco-belge: moteur de la sédimentation. Eustatisme vs subsidence *Géologie de l'Ardenne Occidentale* (pp. 13-21). BRGM- SGF.
213. Casier, J.-G., El Hassani, A., & Préat, A. (2006). Contribution à l'étude des Ostracodes du Dévonien Moyen et Supérieur du Tafilalt (Maroc) Abstract session presented at Réunion des Ostracodologues de langue française(21: 19-22 avril 2006: Tétouan, Maroc).

2005

214. Préat, A., Mattielli, N., De Jong, J., & Mamet, B. (2005). Stable iron isotopes data asses microbial mediation in the Rosso Ammonitico (Mid-Late Jurassic, Verona, Italy) Abstract

session presented at GSA Annual Meeting & Exposition(16-19 Octobre 2005: Salt Lake City, USA).

215. Berra, I., Casier, J.-G., & Prétat, A. (2005). Eutrophication of basinal waters around the Frasnian-Famenian boundary at the Devils Gate Section (Nevada): a relation with mass extinction ? Abstract session presented at GSA Annual Meeting and Exposition(16-19 Octobre 2005: Salt Lake City, Usa).
216. Casier, J.-G., Olempska, E., Berra, I., & Prétat, A. (2005). Ostracods from the Lower Member of the Devils Gate Formation (Frasnian) in the type locality: Relation with the Alamo Event. Abstract session presented at GSA Annual Meeting & Exposition(16-19 Octobre 2005: Salt Lake City, USA).

2004

217. Prétat, A., & Gillan, D. (2004). Activités microbiennes (ferro-bactéries et fungi) et origine des matrices carbonatées rougeâtres au Paléozoïque *Ecole d'Eté des Carbonates récifaux et de plate-forme* (pp. 1-23). Assoc. Sédim. France.
218. Prétat, A. (2004). Le Paléozoïque franco-belge: un exemple de la difficulté de l'estimation temporelle des cycles et séries *Ecole d'Eté des Carbonates récifaux et de plate-forme* (pp. 1-23). Assoc. Sédim. France.
219. Kolo, K., Claeys, P., & Prétat, A. (2004). Experimental monitoring of fungal diagenesis of carbonate substrates. *Microbialite and microbial communities in sedimentary systems, Workshop*: Vol. 46 (pp. 67-68). Paris: Camoins 1 Gautret, Public, ASF.
220. Mamet, B., & Prétat, A. (2004). Morphologies minérales (hématite, pyrite, dolomite) attribuables à l'action microbienne *Microbialite and microbial communities in sedimentary systems, Workshop*: Vol. 46 (p. 71). Paris: Camoin 1 Gautret, Public. ASF.
221. Prétat, A., Mamet, B., de Jong, J., Durllet, C., Morano, S., & Mattielli, N. (2004). Origine de la pigmentation de l'Ammonitico Rosso d'Italie du Nord (Jurassique Moyen, Région de Vérone): Biosédimentologie, Diagenèse et Géochimie isotopique du Fer *Workshop* (pp. 79-82). Paris: Eds Camoin 1 Gautret.

2003

222. Mamet, B., & Prétat, A. (2003). Why is 'red marble' red ? Abstract session presented at International Symposium on fossil algae(18-20 Septembre 2003: Granada, Spain).
223. Della Porta, G., Mamet, B., & Prétat, A. (2003). Bacterial mediation in the formation of red lime stones, Upper Carboniferous, Cantabrian Mountains, Spain Abstract session presented at (XV ICC-P)(10-16 Aout 2003: Utrecht, Pays-Bas).
224. Morano, S., Loreau, J., Durllet, C., Mamet, B., & Prétat, A. (2003). The 'Rosso Ammonitico' Veronese (Jurassic, Italy): Diagenesis and Microbial Content Abstract session presented at 8th International Symposium on fossil algae(18-20 Septembre 2003: Granada, Spain).

2002

225. Han, G., Yans, J., Goudalier, M., Lacquement, F., Corfield, R., Mansy, J.-L., Boulvain, F., & Prétat, A. (2002). Recognition and implication of tectonic loading reh-heating in late Paleozoic succession of the Dinant Synclinorium (Belgium and Northern France) from

Frasnian illite crystallinities and oxygen isotopes *Contributions to Geology of Belgium and Northwest Europe: Proceedings of the first Geologica Belgica International Meeting*: Vol. 12 (pp. 97-98). Aadrk Medel.

226. Mamet, B., & Pr at, A. (2002). Sur les difficult s d'interpr tation des hiatus stratigraphiques *Contributions to Geology of Belgium and Northwest Europe: Proceedings of the first Geologica Belgica International Meeting*: Vol. 12 (pp. 117-118). Aadrk Medel.
227. Kolo, K., Mamet, B., & Pr at, A. (2002). Dichotomous filamentous dolomite crystal growth in the Lower Carboniferous from Northern France: A possible direct production of fungal activity? In P. Degryse & M. Sintubin (Eds.), *Contributions to Geology of Belgium and Northwest Europe: Proceedings of the first Geologica Belgica International Meeting* (pp. 121-123). Aadrk Medel.

1997

228. Lehmani, M., Pr at, A., Schwarzacher, W., & Keppens, E. (1997). A meter-scale cyclicity in the Middle Devonian of northwestern Meseta (Morocco): Is it a Milankovitch signature? Abstract session presented at 18th IAS Regional European Meeting of Sedimentology(2-4 Septembre 1997: Heidelberg, Allemagne).
229. Bertrand, M., Dumoulin, V., Pr at, A., & Racki, G. (1997). Sequence stratigraphy of the Middle-Upper Frasnian transition: a comparison between Belgium (Philippeville area) and Poland (Holy Cross Mountains) Abstract session presented at 18th IAS Regional European Meeting of Sedimentology(2-4 Septembre 1997: Heidelberg, Allemagne).
230. Bertrand, M., Pr at, A., Weis, D., & Racki, G. (1997). Comparisons between burial diagenesis indicators of a Frasnian carbonate platform (Holy Cross Mountains, Poland). Abstract session presented at 18th IAS Regional European Meeting of Sedimentology(2-4 Septembre 1997: Heidelberg, Allemagne).
231. Bertrand, M., Pr at, A., Weis, D., & Racki, G. (1997). Role of microbial organisms in the formation of red matrices, Devonian, Montagne Noire *Microbial Mediation in Carbonate Diagenesis*: Vol. 26 (p. 61). Paris: Publication ASF.
232. Pr at, A., Herbosch, A., Weis, D., Devleeschouwer, X., & Mamet, B. (1997). The Frasnian/Famennian stage boundary at Coumiac (Montagne Noire, France): sedimentology, sequences and geochemistry. Abstract session presented at 18th IAS Regional European Meeting of Sedimentology(2-4 Septembre 1997: Heidelberg, Allemagne).

1995

233. Bertrand, M., Pr at, A., & Racki, G. (1995). Preliminary sedimentological study of an early Frasnian buildup in the Holy Cross Mts., Central Poland Abstract session presented at Second Eur. Regional Meeting(ISRS).
234. Bertrand, M., & Pr at, A. (1995). Etude s dimentologique d'une bioconstruction du Frasnien inf rieur   Kowala (Holy Cross Mts., Pologne). *International Association of Sedimentologists IAS-ASF, 16th Regional European Meeting*: Vol. 22 (Communication et Abstract ed., p. 19). Publication ASF.
235. Devleeschouwer, X., & Pr at, A. (1995). S dimentologie, pal ontologie et g ochimie de la limite Frasnien-Famennien dans le Synclinorium de Dinant (Belgique) *International*

Association of Sedimentologists IAS-ASF, 16th Regional European Meeting: Vol. 22 (Communication et Abstract ed., p. 55). Publications ASF.

236. Lehmani, M., Préat, A., Keppens, E., & El Hassani, A. (1995). Microfaciès et cyclicité des couches de transition Eifélien-Givétien dans la Meseta nord- occidentale du Maroc: éléments de comparaison avec le Dévonien Moyen belge *International Association of Sedimentologists IAS-ASF, 16th Regional European Meeting: Vol. 22* (Communication et Abstract ed., p. 92). Publications ASF.

1994

237. Bertrand, M., Préat, A., & Racki, G. (1994). Preliminary sedimentological study of an early Frasnian buildup in the Holy Cross Mts., Central Poland Abstract session presented at Second European Regional Meeting(Luxembourg).

1993

238. Préat, A., & Weis, D. (1993). Variations du niveau marin dans le Dévonien Moyen de Belgique: approches sédimentologiques (stratigraphie séquentielle) et géochimique (isotopes du strontium) Abstract session presented at Réunion spécialisée de la Société Géologique de France(3-4 mai 1993: Paris 3 et 4 mai 1993).

1992

239. Boulvain, F., Kasimi, R., Herbosch, A., & Préat, A. (1992). Evolution de la plate-forme s.l. du Couvinien supérieur au Frasnien supérieur des bassins de Namur et de Dinant (Belgique). Abstract session presented at Congrès GFP-SGF(16-17 Octobre 1992: Villeneuve-d'Ascq).

1989

240. Préat, A., & De Putter, T. (1989). Sédimento-diagenèse de séquences émerives de type "shallowing-upward" dans la "Grande Brèche" des Bassins de Namur et de Dinant Abstract session presented at Réunion FNRS-Groupe de contact "Sédimentologie"(Liège).

1988

241. Préat, A., & Boulvain, F. (1988). Middle and upper Devonian carbonate platform evolution in Dinant and Namur Basins (Belgium, France) Abstract session presented at I.A.S 9th European Regional Meeting(Leuven-Belgium).
242. Claeys, P., Herbosch, A., & Préat, A. (1988). Collapse breccia: a possible explanation for the "Grande brèche viséenne" of the Dinant and Namur Basins Abstract session presented at .

1986

243. Préat, A., & Rouchy, J.-M. (1986). Faciès pré-évaporitiques dans le Givétien des bassins de Dinant et de Namur (Belgique, France) Abstract session presented at Les évaporites pré-permiennes en Europe: Aspects sédimentologiques, paléogéographiques et structuraux.
244. Boulvain, F., Préat, A., & Herbosch, A. (1986). Utilisation des laminites algaires comme indicateurs paléoclimatiques Abstract session presented at Réunion FNRS Groupe de contact "Sédimentologie"(Liège, Belgique).

245. Wemaere, I., & Préat, A. (1986). Le Couvinien Supérieur, exemple de rampe mixte carbonatée et siliciclastique Abstract session presented at Réunion FNRS Groupe de contact "Sédimentologie" à Liège.

1985

246. Naisse, F., Perez, R. S., & Préat, A. (1985). Sédimentologie du Frasnien moyen du bord nord du Bassin de Dinant Abstract session presented at Réunion FNRS Groupe de contact "Sédimentologie"(Liège).
247. Préat, A. (1985). Evolution d'une rampe carbonatée en une plate-forme carbonatée Abstract session presented at Réunion FNRS Groupe de contact "Sédimentologie"(Liège).

Rapports de recherche, comptes rendus, lettres à l'éditeur, working papers (72)

2012

248. Préat, A. (2012). *Le Néoprotérozoïque (Schisto-Calcaire) du bassin de Comba: Rapport de mission de terrain au Congo-Brazzaville du 22/09 au 13/10.*
249. Delpomdor, F., & Préat, A. (2012). *Hydrocarbon reservoir potential of Neoproterozoic carbonates in the Mbuji-Mayi Supergroup (Sankuru-Bushimay area), Democratic Republic of Congo: stratigraphy, sedimentology, geochemistry, petrophysics.*

2010

250. Préat, A. (2010). *Les isotopes Fe, S, C, traceurs de la médiation microbienne aux interfaces diagénétiques précoces (carbonatées et siliceuses) rougeâtres phanérozoïques. Géotraceurs ou biosignatures de la Vie Primitive en milieux extrêmes.*
251. Delpomdor, F., & Préat, A. (2010). *Les réservoirs carbonatés (sédimentologie, diagenèse...) du Méso-Néoprotérozoïque de la Cuvette du Congo (Mbuji- Mayi, République Démocratique du Congo).*

2008

252. Préat, A. (2008). *Etude sédimentologique et géochimique des carbonates néoprotérozoïques du flanc Ouest du Synclinorium de la Nyanga et paléoprotérozoïques des bassins de Franceville et de Lastourville.*
253. Préat, A. (2008). *Le Néoprotérozoïque du Synclinal de la Nyanga (Gabon) : analyse isotopique des carbonates, pétrographie de la diamictite supérieure et comparaison avec les séries équivalentes du Bas-Congo: résultats préliminaires.*
254. Préat, A. (2008). *Pétrographie des échantillons prélevés dans la Nyanga en août-septembre 2006 (Expertise sédimentologique).*

2007

255. Préat, A. (2007). *Etude sédimentologique du Paléoprotérozoïque du bassin de Franceville (Sud Gabon).*

2006

256. Préat, A. (2006). *Etude sédimentologique du Néoprotérozoïque du Synclinorium de la Nyanga. Programme Sysmin 8ème FED au groupement Brgm-Cgs-Sander-Mrac.*

257. Préat, A. (2006). *Les communautés ferro-bactériennes et leur rôle dans la pigmentation des carbonates phanérozoïques.*

2005

258. Préat, A. (2005). *La productivité carbonatée dans les systèmes de plates- formes.*

259. Préat, A. (2005). *Description pétrographique de huit échantillons de calcaire carbonifère de la carrière de Côleu à Sprimont.*

2003

260. Claeys, P., & Préat, A. (2003). *Etude géologique des conséquences environnementales du lotissement du champ situé au coin des avenues Engeland et Dolez à Uccle (Bruxelles).*

261. Préat, A. (2003). *La limite F-F en relation avec l'extinction des organismes.*

2002

262. Préat, A. (2002). *Les communautés ferro-bactériennes et leur rôle dans la pigmentation des carbonates phanérozoïques.*

2001

263. Préat, A., & Claeys, P. (2001). *Examen géologique du site du Dieweg n°58 sur la commune d'Uccle (Bruxelles).*

264. Kolo, K., & Préat, A. (2001). *Geological and economic evaluation of Zuata Area, Venezuela: A synthesis.*

2000

265. Préat, A. (2000). *Etat des pierres 'bleues' de parement de la Polyclinique de Saint-Servais (Namur): mesures et photographies.*

1999

266. Préat, A. (1999). *Les communautés ferro-bactériennes et leur rôle dans la pigmentation des carbonates phanérozoïques.*

267. Préat, A. (1999). *Expertise des pierres 'bleues' de parement de la Polyclinique de Saint Servais (Namur).*

1998

268. Préat, A. (1998). *Les communautés bactériennes dans la formations d'oncoïdes et biolaminations.*

269. Préat, A. (1998). *Etude géologique de quatre échantillons de calcaire crinoïdique (pétrographie, pétrofabrique et calcimétrie).*

1997

270. Préat, A. (1997). *Etude complémentaire de sol à Bruxelles: Incidence d'une pollution par les hydrocarbures.*

1996

271. Préat, A. (1996). *La limite F-F en relation avec l'extinction des organismes.*

272. Préat, A. (1996). *Etude complémentaire de sol à Bruxelles: Interprétation géologique et environnementale.*

1995

273. Préat, A. (1995). *Sample study of the Kut area (Iraq): petrography, depositional setting and reservoir characteristics.*

1994

274. Bertrand, M., & Préat, A. (1994). *Etude géologique macroscopique de 4 forages dans le Viséen du Synclinorium de Namur: Interprétations stratigraphique, sédimentologique et corrélations.*

1993

275. Préat, A. (1993). *La transition Eifélien-Givétien franco-belge.*

276. Préat, A., Lesueur, J., Claude, D., Soudet, H., Tebaldi, E., Baruffini, L., Fonnesu, F., Mennig, J., Crumeyrolle, P., Joseph, P., Doligez, B., Ravenne, C., Hu, L., Beucher, H., & Galli, A. (1993). *From Sedimentology to Geostatistical Reservoir Modelling. The Roda, Cajigar and Poulseur Modelling Studies. In Dubrulle O. (Ed.): Final Report of the Geoscience JOUF0034 Project.*

277. Préat, A. (1993). *Géométrie et discontinuités internes des corps sableux du Famennien supérieur des sites de Poulseur et d'Anthisnes (Bassin de Dinant, Belgique): Synthèse du projet JOUF-0034 F "Advanced model for hydrocarbon reservoirs" (années 1988-1993).*

278. Préat, A. (1993). *Sedimentologic and geostatistical studies of the Poulseur and CBA sites: a synthesis of the geometric characterization of possible sandy reservoir bodies.*

1992

279. Préat, A., & Weis, D. (1992). *Etude des variations du niveau marin dans le Paléozoïque Supérieur du Synclinorium de Dinant: Approches sédimentologique (stratigraphie séquentielle) et géochimique (isotopes du strontium).*

280. Dubrulle, O., Fonnesu, F., Mennig, J., Préat, A., Dumoulin, V., & Bertrand, M. (1992). *Sandstone body geometry and internal permeability barriers as shown on several examples from different sedimentological environments: Advanced models for hydrocarbon reservoir studies.*

281. Bertrand, M., Dumoulin, V., & Préat, A. (1992). *Stratigraphie séquentielle et interprétation des paramètres géostatistiques majeurs des corps sableux du Famennien supérieur des sites de Poulseur et d'Anthisnes (Bassin de Dinant, Belgique).*

282. Préat, A., Bertrand, M., Dumoulin, V., Mennig, J., Beucher, H., & Wackernagel, H. (1992). *Sandstone body geometry and internal permeability barriers as shown on*

several examples from different sedimentological environments : Advanced models for hydrocarbon reservoir studies: Advanced models for hydrocarbon reservoir studies.

283. Préat, A. (1992). *Examen pétrologique de deux roches carbonatées en provenance du Burundi.*

1991

284. Préat, A., & Mennig, J. (1991). *Résultats acquis lors de la seconde phase d'étude des corps sédimentaires fameniens dans le cadre du projet JOUF- O34 de la CCE.*
285. Préat, A., Dumoulin, V., & Mennig, J. (1991). *Sandstone bodies geometry and internal permeability barrier within different depositional displays: Advanced model for hydrocarbon reservoirs.*
286. Dumoulin, V., & Préat, A. (1991). *Etude pétrographique et interprétation en stratigraphie séquentielle des corps sableux du Famennien supérieur du site de Poulseur (Bassin de Dinant, Belgique).*
287. Préat, A., & Mennig, J. (1991). *Sandstone bodies geometry and internal permeability barrier within different depositional displays.: Advanced model for hydrocarbon reservoirs.*

1990

288. Blykowska, E., Mennig, J., Préat, A., & Soudet, H. (1990). *Sandstone bodies geometry and internal permeability barrier within different depositional displays: Advanced model for hydrocarbon reservoirs.*
289. Préat, A., Babun, F., Da Silva Lopes, N., & Smets, S. (1990). *Analyse des corps sableux fameniens de l'ancienne carrière de Poulseur (Province de Liège): Acquisition des données et première interprétation.*
290. Préat, A. (1990). *Etude géologique de la Carrière "Petit Avin" au nord-est de Havelange (Province de Namur).*
291. Préat, A., Babun, F., Da Silva Lopes, N., & Smets, S. (1990). *Analyse des corps sableux fameniens de l'ancienne carrière de Poulseur (Province de Liège).*

1989

292. Préat, A. (1989). *Etude sédimento-diagénétique de l'albo-aptien postsalifère de quelques puits on-shore du Bassin de la Cuanza (Angola).*
293. Boulvain, F., & Préat, A. (1989). *Etude géologique de la carrière "Covisse" à Lustin (Province de Namur).*
294. Préat, A., Boulvain, F., Da Silva Lopes, N., & Zimmermann, C. (1989). *Etude préliminaire et méthodologique d'analyse des corps sableux fameniens de l'ancienne carrière de Poulseur (Province de Liège).*

1988

295. Préat, A. (1988). *Faisabilité Famennien: Rapport de trois journées de terrain dans les vallées de l'Ourthe, du Hoyoux, du Bocq et de la Lesse.*

1987

296. Préat, A. (1987). *Well 4-26-2. Petrographical flash study: Upper Cenomanian-Lower Turonian. Block 4. Depths 940,50m-741m.*
297. Préat, A. (1987). *Well 4-16-1. Sedimentological study: Upper Cenomanian-Lower Turonian. Block 4. Depths 1051m-1045m.*
298. Préat, A. (1987). *QUINGUILA#26. Upper Pinda (Albian): Sedimentological interpretation and petrographical behaviour of the reservoir.*
299. Préat, A. (1987). *Well 4-26-3. Sedimentological study: "Upper Cenomanian-Lower Turonian". Block 4. Angola. Depths 1002,35m-996m.*
300. Préat, A. (1987). *MUBAFO#1 Well. Petrographical study: Quick analysis of two pieces of cores (depths 1489,9 m KB and 1507,2 m KB).*
301. Préat, A. (1987). *QUINGUILA#26 (carottes n°1, 2 et 3). Pinda Supérieur (Albien): Album iconographique de détails. Descriptions et éléments d'interprétation des milieux de dépôts.*
302. Préat, A. (1987). *Well 4-16-1 Sedimentological study: Lower Turonian. Block 4. Depths 947m-943m.*

1986

303. Préat, A. (1986). *QUINFUQUENA#15 Pinda Sup (Albien): Album iconographique de détails. Interprétation sédimentologique.*
304. Préat, A. (1986). *Well 4-11-1: Petrographical-diagenetic study. Moita Section. Depths 1753m-1769m.*
305. Préat, A. (1986). *Well CONGA#1. Petrographical study (sedimentology-diagenesis). Pre-salt Section. Depths 3530m- 3866m.*
306. Préat, A. (1986). *Well 4-45-1. Petrographical study (sedimentology-diagenesis). Depths 2179m-2710m.*
307. Préat, A. (1986). *Well 4-24-1. Petrographical study (sedimentology-diagenesis-sequential analysis). Depths 2257m-2944m.*
308. Préat, A. (1986). *QUINFUQUENA#6 (carottes n°1, 2 et 3). Pinda Sup. (Albien). Album iconographique de détails: Description et essai d'interprétation des conditions de milieux.*

1984

309. Romain, F., & Préat, A. (1984). *Rapport technique sur le gisement calcaire exproprié au profit des carrières BERTHE à Florennes.*

1983

310. Préat, A. (1983). *Etude géologique du gisement calcaire de Gourdinne: Lever cartographique des cailloutis.*

311. Préat, A., Poels, J., & Derijcker, K. (1983). *Prospection des sables bruxelliens dans le Brabant wallon (planchettes n°103 et n°107)*.
312. Préat, A., Poels, J., Cauet, S., & Herbosch, A. (1983). *Etude géologique et géochimique de la minéralisation de Vedrin (Province de Namur)*.

1982

313. Herbosch, A., De Witte, S., & Préat, A. (1982). *Recherche de métallotectes nouveaux de nature géochimique en environnement carbonaté*.
314. Préat, A. (1982). *Etude géologique des sables bruxelliens affleurant à l'ouest de Wavre*.
315. Préat, A., & Doyen, L. (1982). *Etude géologique et géophysique du gisement calcaire de Beez: Détermination de l'épaisseur de la couverture meuble*.

1979

316. Herbosch, A., Jedwab, J., Picciotto, E., Préat, A., & De Witte, S. (1979). *Research on the Uranium Mineralization at Visé (belgium)*.
317. Deraymaeker, E., Dekimpe, M., & Préat, A. (1979). *Manuel de l'utilisateur pour l'application du système APL 10069 destiné à la gestion des données recueillies au cours du programme de recherche de prospection de l'uranium dans le Paléozoïque belge*.
318. Préat, A. (1979). *Etude de la litière forestière comme méthode de prospection de l'uranium*.
319. Jedwab, J., & Préat, A. (1979). *Recherches sur les minéraux porteurs du tungstène dans les schistes et les grès de Nyakabinga (Rwanda)*.

Participations à des congrès et colloques internationaux (158)

2012

320. Préat, A. (2012). *Les combustibles fossiles conventionnels et non conventionnels: pour combien de temps encore ?* Paper session presented at Congrès Pluraliste des Sciences (21-23 août 2012: ULB, Bruxelles, Belgique).
321. Furfari, S., & Préat, A. (2012). *La surprise du gaz non conventionnel* Paper session presented at l'Académie royale des Sciences, des Lettres et des Beaux Arts de Belgique (1er mars 2012: Bruxelles, Belgique).
322. Préat, A., Delpomdor, F., Frimmel, H., blanpied, C., & Straathof, G. (2012). *Are Paleoproterozoic and Neoproterozoic stable isotopes useful for chemostratigraphic correlation ? : Examples from South Gabon and Democratic Republic of Congo*. Paper session presented at 34th International Geological Congress (5-10 Aout 2012: Australia, Brisbane, Queensland).
323. Delpomdor, F., Linneman, U., Boven, A., Gartner, A., Tarvi, A., blanpied, C., Jelsma, H., & Préat, A. (2012). *LA-ICP-MS U-Pb data of detrital zircon and $40\text{Ar}/39\text{Ar}$ ages combined with C and Sr isotopes in the Neoproterozoic Mbuji-Mayi Supergroup (Democratic Republic of Congo): implications for basin evolution* Paper session presented at 34th

International Geological Congress (IGC) (5-10 August 2012: Australia, Brisbane, Queensland).

324. Préat, A. (2012). *Combustibles fossiles: état des réserves et géopolitique* Paper session presented at Académie Royale de Belgique (6 juin 2012: Bruxelles, Belgique).
325. Préat, A. (2012). *Combustibles fossiles et énergies renouvelables* Paper session presented at Exposition Printemps des Sciences (21 mars 2012: ULB, Bruxelles, Belgique).
326. Préat, A. (2012). *Problèmes actuels de gestion de l'énergie* Paper session presented at Université de Mons-Hainaut (7 février 2012: Mons, Belgique).
327. Delpomdor, F., Virgogne, A., & Préat, A. (2012). *Microfacies vs REE+Y distribution in the Neoproterozoic Mbuji-Mayi carbonates of Democratic Republic of Congo: Palaeoenvironmental tools in sedimentology* Poster présenté à la conférence 34th International Geological Congress (IGC) (5-10 Aout 2012: Australia, Brisbane, Queensland).
328. Préat, A., Delpomdor, F., & Kant, F. (2012). *The Neoproterozoic record in Gabon and Democratic Republic of Congo: A stable isotope study*. Poster présenté à la conférence 34th International Geological Congress (IGC) (5-10 Aout 2012: Australia, Brisbane, Queensland).

2011

329. Ait Abdelouahab, D., Bouzenoune, A., & Préat, A. (2011). *Relation entre les formations carbonatées apto-albiennes et le Trias diapirique de Djebel Boukhadra (NE Algérien)* Paper session presented at Congrès de Sédimentologie (13: 14-16 novembre: Université de Bourgogne, Dijon).
330. Casier, J.-G., Devleeschouwer, X., Maillet, M., Petitclerc, E., & Préat, A. (2011). *Ostracods, rock facies and magnetic susceptibility of the Givetian/Frasnian transition at Ave-et-Auffe (Dinant, Synclinorium, Belgium)*. Paper session presented at 7th European Ostracodologists' Meeting (25-28 aout 2011: Graz, Autriche).
331. Delpomdor, F., Schroder, S., blanpied, C., Fernández-Alonso, M. C., & Préat, A. (2011). *Meso- and Neoproterozoic paleoenvironments of the Mbuji-Mayi Supergroup, Democratic Republic of Congo* Paper session presented at Colloquium on African Geology (23: 8-14 janvier 2011: Johannesburg University, South Africa).
332. Thieblemont, D., Prian, J., Goujou, J., Boulingui, B., Ekhoga, H., Kassadou, A., Simo Ndounze, S., Walemba, A., Préat, A., Theunissen, K., Cocherie, A., & Guerrot, C. (2011). *Timing and characteristics of Neoproterozoic magmatism in SW Gabon* Paper session presented at Colloquium on African Geology (23: 8-14 Janvier 2011: Johannesburg University, South Africa).
333. Préat, A., Prian, J., Thieblemont, D., & Delpomdor, F. (2011). *Stable isotopes of oxygen and carbon compositions in the Neoproterozoic of Gabon* Paper session presented at Colloquium of African Geology (23: 8-14 janvier 2011: Johannesburg University, South Africa).

334. Préat, A. (2011). *L'ère du pétrole: pour combien de temps encore ?* Paper session presented at Université de Lille 1 Sciences et Technologies (14 novembre 2011: Lille, France).
335. Préat, A. (2011). *Le Néoprotérozoïque du Gabon et des régions voisines* Paper session presented at Hôtel Sultani (25 août 2011: Kinshasa, République Démocratique du Congo).
336. Préat, A. (2011). *L'ère du pétrole: pour combien de temps encore ?* Paper session presented at Université des Aînés & du Temps Libre (14 novembre 2011: Centre culturel de Braine-L'Alleud, Belgique).
337. Préat, A. (2011). *Gestion de l'Energie, la quadrature du cercle* Paper session presented at Université de Mons-Hainaut (7 avril 2011: Mons, Belgique).
338. Préat, A. (2011). *Les réserves pétrolières mondiales* Paper session presented at Hôtel Sultani (25 août 2011: Kinshasa, République Démocratique du Congo).
339. Préat, A. (2011). *L'ère du pétrole: pour combien de temps encore ?* Paper session presented at l'Enseignement secondaire (1er et 3 février 2011: Athénée de Jodoigne, Belgique).
340. Préat, A. (2011). *L'enregistrement du temps en géologie, l'intuition prise en défaut...* Paper session presented at Collège Belgique-Académie Royale (19 mai 2011: Palais Provincial de Namur, Belgique).
341. Casier, J.-G., Devleeschouwer, X., Maillet, M., Petitclerc, E., & Préat, A. (2011). *Ostracodes, rock facies and magnetic susceptibility of the Givetian/Frasnian transition at Sourd d'Ave (Dinant, Synclitorium, Belgium)* Poster présenté à la conférence Geological Society of America Annual Meeting (9-12 Octobre 2011: Minneapolis, USA).
342. Tack, L., Delpomdor, F., Kanda Nkula, V., Préat, A., Baudet, D., Dewaele, S., Fernández-Alonso, M. C., & Boven, A. (2011). *The Neoproterozoic Katanga and West Congo Supergroups: similarities and differences* Poster présenté à la conférence Colloquium of African Geology (23: 8-14 Janvier: Johannesburg University, South Africa).
343. Delpomdor, F., Tait, J., Tack, L., & Préat, A. (2011). *Neoproterozoic lithostratigraphy in Republic of Congo* Poster présenté à la conférence Colloquium of African geology (23: 8-14 janvier 2011: Johannesburg University, South Africa).
- 2010**
344. Petitclerc, E., Devleeschouwer, X., Hubert, B., Pinte, E., Maillet, S., Cronier, C., bignon, A., Spassov, S., & Préat, A. (2010). *Rock magnetism, sedimentology, gamma-ray logging, reefal and peri-reefal fauna in the Mont d'Haura and Fromelennes Formation (Late Givetian) at 'Cul d'Houille' section (Flohimont, France)* Paper session presented at IGCP-580 Meeting, Application of magnetic susceptibility on Paleozoic (28-30 Novembre 2010: Chinese Academy of Science, Guilin, China).
345. Devleeschouwer, X., Petitclerc, E., Spassov, S., & Préat, A. (2010). *The Givetian-Frasnian boundary at Nismes parastratotype (Belgium): ferromagnetic minerals (magnetite and hematite) carrying the magnetic signal* Paper session presented at 4eme Congrès

- Français de Stratigraphie (4: 30 août- 2 Septembre 2010: Université Pierre et Marie Curie, Paris 6).
346. Casier, J.-G., Cambier, G., Devleeschouwer, X., Petitclerc, E., & Préat, A. (2010). *Ostracodes, sédimentologie et susceptibilité magnétique au passage des formations de Trois-Fontaines et des Terres d'Hauts (Givétien) dans la carrière de Rancennes (Mont d'Hauts, Givet, France)*. Paper session presented at 23^e Réunion ROLF, SEREPT (6-8 mai 2010: Tunis).
347. Delpomdor, F., & Préat, A. (2010). *Hydrocarbon reservoir potential of Neoproterozoic carbonates in the Democratic Republic of Congo (DRC): stratigraphy, sedimentology, diagenesis, microbial influence* Paper session presented at Workshop "Néoprotérozoïque" à la Société TOTAL (13-14 Janvier 2010: Pau).
348. Préat, A., Bouton, P., Prian, J., & Thieblemont, D. (2010). *Sedimentology and stable isotopes in the Precambrian carbonates of South Gabon: a contribution of the Neo- and Palaeoproterozoic basin evolution* Paper session presented at second informal meeting on Neoproterozoic of the "Cuvette of Congo" (26 Janvier 2010: Tervuren, Belgique).
349. Delpomdor, F., & Préat, A. (2010). *Sedimentology and sequential stratigraphy of the Mbuj-Mayi Supergroup (Neoproterozoic, Democratic Republic of Congo)* Paper session presented at Second informal meeting on Neoproterozoic of the "Cuvette of Congo" (26 janvier 2010: Tervuren, Belgique).
350. Petitclerc, E., Simo, S., Casier, J.-G., Préat, A., & Devleeschouwer, X. (2010). *Eifelian/Givetian boundary ('Fondry des Chiens', Belgium and Mont d'Hauts, France): rock magnetism, microfacies and ostracods. Is a magnetic correlation possible ?* Paper session presented at Castle Meeting on Paleo, Rock and Environmental Magnetism (29 Aout- 04 Septembre: Nove Hradý, South Bohemia, Czech Republic).
351. Préat, A. (2010). *L'enregistrement du temps en géologie, l'intuition prise en défaut...* Paper session presented at Cepulb (15 mars 2010: ULB, Bruxelles, Belgique).
352. Préat, A. (2010). *L'ère du pétrole: pour combien de temps encore ?* Paper session presented at Cepulb, Antenne UCL/ULB (8 janvier 2010: Waterloo, Belgique).
353. Casier, J.-G., Devleeschouwer, X., Moreau, J. F., Petitclerc, E., & Préat, A. (2010). *Ostracodes, microfacies and magnetic susceptibility of the Lower Givetian in the type locality* Poster présenté à la conférence Geological Society of America Annual Meeting, session biostratigraphy (31 oct- 03 nov 2010: Denver, USA).
354. Préat, A., Bouton, P., Thieblemont, D., Prian, J., Ndounze, S., & Delpomdor, F. (2010). *Paleoproterozoic high 13C dolomites from Lastoursville and Franceville basins (SE Gabon): stratigraphic and synsedimentary subsidence implications* Poster présenté à la conférence Geological Society of America Annual Meeting (31 Oct-3 Nov: Denver, USA).
- 2009**
355. Petitclerc, E., Devleeschouwer, X., Spassov, S., Casier, J.-G., & Préat, A. (2009). *Contrasting magnetic mineralogy and magnetic susceptibility curves at the Givetian/*

Frasnian boundary in Belgium: detritism versus diagenesis Paper session presented at Congrès IGCP 580 (02-05 Decembre 2009: Liège).

356. Devleeschouwer, X., Cambier, G., Petitclerc, E., Casier, J.-G., Spassov, S., & Préat, A. (2009). *Detrital magnetite grains control the magnetic susceptibility evolutions of the Trois-Fontaines-Terres d'Hauts formations (Lower Givetian) at Givet (France)* Paper session presented at Congrès IGCP 580 (2-5 décembre 2009: Liège).
357. Devleeschouwer, X., Petitclerc, E., & Préat, A. (2009). *Rock magnetism straddling the Eifelian-Givetian boundary (Pic de Vissou, Montagne Noire, France): preliminary results* Paper session presented at IAS Sedimentological Congress (24-25 juin 2009: Cracovia).
358. Yans, J., Andreu, B., Baele, J.-M., Cornet, C., De Ricqles, A., Dejax, J., Dupuis, C., Galbrun, B., Gerards, T., Gerrienne, P. P., Godefroit, P., Gomez, B., Gosselin, R., Leduc, T., Petit, G., Pons, D., Préat, A., Robaszynski, F., Schnyder, J., Smith, T., Spagna, P., Steurbaut, E., Taverne, L. P., Tshibangu, J., Van Itterbeeck, J., Vandycke, S., & Vanneste, C. (2009). *Integrated results of the new material from the 2002-2003 boreholes in Bernissart (Mons, Hainaut)*. Paper session presented at Tribute to Charles Darwin and Bernissart Iguanodons: New perspectives on Vertebrate Evolution and Early Cretaceous Ecosystems (février 2009: Bruxelles, Bernissart).
359. Préat, A. (2009). *La gestion de l'énergie. La quadrature du cercle* Paper session presented at Académie royale des Sciences, des Lettres et des Beaux Arts de Belgique (26 novembre 2009: Belgique).
360. Préat, A. (2009). *Could Fe-isotopes shed light on this question through the study of the Italian Ammonico Rosso and Recent organisms?* Paper session presented at Università di Torino (9 novembre 2009: Turin, Italie).
361. Préat, A. (2009). *Could Fe-isotopes shed light on this question through the study of the Italian Ammonico Rosso and Recent organisms?* Paper session presented at Bruxelles-ULB (13 janvier: Belgique).
362. Préat, A. (2009). *Could Fe-isotopes shed light on this question through the study of the Italian Ammonico Rosso and Recent organisms?* Paper session presented at Woluwé-Saint-Lambert (3 mars 2009: Belgique).
363. Préat, A. (2009). *Why is red marbles red ?* Paper session presented at Woluwé-Saint-Lambert (3 mars 2009: Belgique).
364. Préat, A. (2009). *Why is red marbles red ?* Paper session presented at Università di Torino (9 novembre 2009: Turin, Italie).
365. Préat, A. (2009). *Why is red marbles red ?* Paper session presented at Bruxelles-ULB (13 janvier 2009: Belgique).
366. Casier, J.-G., Devleeschouwer, X., & Préat, A. (2009). *Ostracods, lithofacies and magnetic susceptibility of the Givetian/Frasnian parastratotype at Nismes (Dinant Synclinorium, Belgium)* Poster présenté à la conférence North American Paleontological Convention 2009 (21-26 juin: Cincinnati).

367. Préat, A., de Jong, J., De Ridder, C., & Gillan, D. (2009). *Possible Fe isotope fractionation during microbiological processing in ancient and modern marine environments* Poster présenté à la conférence Geological Society of America Annual Meeting (18-21 Octobre 2009: Portland, Oregon, USA).

2008

368. Berra, I., & Préat, A. (2008). *Le 87Sr/86Sr au sommet du Frasnien en Amérique du Nord: un lien entre l'orogénèse Antler et la mise en place des événements anoxiques* Paper session presented at Spec. Session Geologica belgica (17 Octobre 2008: Namur).
369. Delpomdor, F., Préat, A., & Tack, L. (2008). *Lithostratigraphie, sédimentologie et diagenèse des dépôts carbonatés du Sous-groupe du Schisto-Calcaire (faisceau du Kwilu CI) en République Démocratique du Congo* Paper session presented at Spec. Session Geologica Belgica (17 Octobre 2008: Namur).
370. Préat, A., Bouton, P., Kolo, K., Prian, J., Simo Ndounze, S., & Thieblemont, D. (2008). *Sédimentologie et isotopes (carbone, oxygène) des carbonates précambriens du Gabon: apport au mode de fonctionnement des bassins néo- et paléoprotozoïques*. Paper session presented at Spec. Session Geologica Belgica (17 octobre 2008: Namur).
371. Préat, A. (2008). *Why is red marbles red ?* Paper session presented at Bruxelles-Jette (27 novembre 2008: Belgique).
372. Préat, A. (2008). *Why is red marbles red ?* Paper session presented at Arlon (22 avril: Belgique).
373. Préat, A. (2008). *Could Fe-isotopes shed light on this question through the study of the Italian Ammonico Rosso and Recent organisms?* Paper session presented at Bruxelles-Jette (27 novembre: Belgique).
374. Préat, A. (2008). *Could Fe-isotopes shed light on this question through the study of the Italian Ammonico Rosso and Recent organisms?* Paper session presented at Arlon (22 avril 2008: Belgique).
375. Préat, A. (2008). *Why is red marbles red ?* Paper session presented at Bouillon (Ardennes) (14 mars: Belgique).
376. Préat, A. (2008). *Why is red marbles red ?* Paper session presented at Institut des Hautes Etudes de Belgique (11 mars: 11 mars 2008: Bruxelles, Belgique).
377. Préat, A. (2008). *Could Fe-isotopes shed light on this question through the study of the Italian Ammonico Rosso and Recent organisms?* Paper session presented at Institut des Hautes Etudes de Belgique (11 mars 2008: Bruxelles, Belgique).
378. Préat, A. (2008). *L'ère du pétrole: pour combien de temps encore ?* Paper session presented at Extension ULB (21 janvier 2008: Dour (Hainaut)).
379. Préat, A. (2008). *Could Fe-isotopes shed light on this question through the study of the Italian Ammonico Rosso and Recent organisms?* Paper session presented at Bouillon (Ardennes) (14 mars: Belgique).

380. Préat, A. (2008). *Why is red marbles red ?* Paper session presented at Centre culturel de Woluwé-St-Pierre (3 mars 2008: Belgique).
381. Préat, A. (2008). *Could Fe-isotopes shed light on this question through the study of the Italian Ammonico Rosso and Recent organisms?* Paper session presented at Centre culturel de Woluwé-St-Pierre (3 mars 2008: Belgique).

2007

382. Préat, A. (2007). *Le Dévonien moyen franco-belge: moteur de la sédimentation, eustatisme vs subsidence ?* Paper session presented at 11e Congrès français de Sédimentologie (23-25 Octobre 2007: Caen, France).
383. Ait Abdelouahab, D., Bouzenoune, A., & Préat, A. (2007). *Microfaciès et organisation des formations carbonatées albo-aptiennes de la mine de fer de Boukhadra (Algérie nord-orientale)* Paper session presented at 11e Congrès français de Sédimentologie (23-25 Octobre 2007: Caen, France).
384. Préat, A. (2007). *Le Néoprotérozoïque du Synclinal de la Nyanga (Gabon): analyse isotopique des carbonates, pétrographie de la diamictite supérieure et comparaison avec les séries équivalentes du Bas Congo* Paper session presented at Réunion projet Sysmin (8è FED au groupement BRGM-CGS-SANDER-MRAC) (14 Septembre 2007).
385. Mamet, B., & Préat, A. (2007). *Bacterial origin of selected Phanerozoic red carbonate rocks* Paper session presented at 9th International Symposium on Fossil Algae (19-20 Septembre 2007: Zagreb, Croatia).
386. Casier, J.-G., & Préat, A. (2007). *About the Devonian/Carboniferous and Frasnian/Famennian boundary sections (La Serre and Coumiac, Montagne Noire, France)*. Paper session presented at SDS Meeting (Octobre 2007: Eureka, Nevada, USA).
387. Casier, J.-G., Berra, I., & Préat, A. (2007). *Devonian ostracodes from Devils Gate (Eureka, Nevada)*. Paper session presented at SDS Meeting (Octobre 2007: Eureka, Nevada, USA).
388. Préat, A. (2007). *L'ère du pétrole: pour combien de temps encore ?* Paper session presented at Saint-Hubert (Ardennes) (16 novembre 2007: Belgique).
389. Préat, A. (2007). *La géologie de la Belgique* Paper session presented at Extension ULB (7 décembre 2007: Bouillon (Ardennes)).

2006

390. Yans, J., Corfield, R., Racki, G., & Préat, A. (2006). *Evidence for perturbation of the carbon cycle in the Middle Frasnian Punctata Conodont Zone*. Poster présenté à la conférence Philadelphia Annual Meeting (22-25 Octobre 2006: Pennsylvania Convention Center, Philadelphia, USA).

2005

391. Bruni, R., Bucur, I., & Préat, A. (2005). *Straigraphical range of calcareous algae in the Upper Jurassic: Lower Cretaceous deposits from Fara San Martino (Maiella, Italy)*. Paper

session presented at 5th Regional Symposium of Fossil Algae (30 Aout- 3 Septembre 2005: Ferrara, Italia).

392. Vanmeirhaeghe, J., Yans, J., Pr at, A., & Verniers, J. (2005). *New evidence for the Hirnantien (Upper Ordovician) in Belgium ? : Integrating microfacies, carbon isotope and chitinozoan data*. Paper session presented at IGCP 503 Meeting (Juin 2005: Milwaukee).
393. Vanmeirhaeghe, J., Yans, J., Pr at, A., & Verniers, J. (2005). *New evidence for the Hirnantien (Upper Ordovician) in Belgium ? : An integrated isotopical, biostratigraphical and sedimentological approach* Paper session presented at Colloque organis  par L'Universit  de Li ge (Mai 2005: Li ge).
394. Casier, J.-G., Olempska, E., Berra, I., & Pr at, A. (2005). *Frasnian ostracods from Devils Gate (Neveada, USA) and their environmental setting.: Relation with the Alamo Event* Paper session presented at St-Petersburg Congress.

2004

395. de Jong, J., Mattielli, N., Morano, S., & Pr at, A. (2004). *Preliminary Iron isotopic data suggest bacterial fractionation in the Rosso Ammonitico (Mid/Late-Jurassic, Verona area, Italy)* Paper session presented at Spec. Sess Geologica Belgica (2-3: Mons, Belgique).

2003

396. Kolo, K., Claeys, P., & Pr at, A. (2003). *Formation of dolomite and Ca- oxalates by fungal biomineralization process on carbonate substrates: experimental work*. Paper session presented at Geologica Belgica, special session (30 septembre 2003: Bruxelles).
397. Berra, I., Casier, J.-G., Olempska, E., & Pr at, A. (2003). *Fluctuations eustatiques dans le D vonien Sup rieur de Devils Gate (Nevada, USA): S dimentologie et Pal ontologie* Paper session presented at Colloque Tecton-Clim (10-11 D cembre 2003: Universit  de Lille 1, France).
398. Pr at, A., & Berra, I. (2003). *La limite Frasnien-Famennien dans la coupe de Cinquefoil (Canada): faci s et g ochimie isotopique*. Paper session presented at Programme 'Eclipse' Frasnien-Famennien, Workshop (01 Mars 2003: Universit  Lille 1, France).
399. Pr at, A., Mamet, B., Morano, S., Della Porta, G., & Boulvain, F. (2003). *Microbial origin of the red pigmentation in various Paleozoic and Mesozoic series: is a common model possible ?* Paper session presented at Geologica Belgica (30 September 2003: Brussels, Belgium).

2002

400. Han, G., Yans, J., Goudalier, M., Lacquement, F., Mansy, J.-L., Boulvain, F., Pr at, A., & Corfield, J. (2002). *Recognition and implication of tectonic Loading re-heating in the late Paleozoic succession of the Dinant Synclinorium (Belgium and northern France) based on an illite crystallinity and oxygen isotope study* Paper session presented at Leuven 2002 'On the Crossroads...' Geologica Belgica International Meeting (11-15 Septembre 2002: K.U.Leuven).

401. Mamet, B., & Pr at, A. (2002). *Sur les difficult s d'interpr tation des hiatus stratigraphiques* Paper session presented at Leuven 2002 'On the Crossroads...' Geologica Belgica International Meeting (11-15 septembre 2002: K.U.Leuven, Belgique).
402. Kolo, K., Mamet, B., & Pr at, A. (2002). *Dichotomous filamentous dolomite crystal growth in the Lower Carboniferous from Northern France: A possible direct production of fungal activity ?* Paper session presented at Leuven 2002 'On the Crossroads...' Geologica Belgica International Meeting (11-15 septembre 2002: K.U.Leuven, Belgique).
403. Pr at, A., & Berra, I. (2002). *R sultats pr liminaires de l'analyse des faci s s dimentaires de coupes   la limite Frasnien-Famennien dans les Rocheuses canadiennes.* Paper session presented at Programme 'Eclipse' Frasnien-Famennien, workshop (10 janvier 2002: Universit  de Lille 1, France).
404. Pr at, A., Kolo, K., Mamet, B., & Berra, I. (2002). *Dichotomous filamentous dolomite crystal growth in the Lower Carboniferous from Northern France: a possible biomediation by fungal activity ?* Paper session presented at Colloque National de G ologie des Gisements (20-21 janvier 2002: Alger, Alg rie).
405. Pr at, A., & Boulvain, F. (2002). *Devonian reefs of the Ardennes (Part 1): the ramp and the platform systems.* Poster pr sent    la conf rence Paleozoic Carbonates Seminar (25-26 mars 2002: Pau, France).
406. Boulvain, F., & Pr at, A. (2002). *Devonian reefs of the Ardennes (Part 2): the carbonate mounds* Poster pr sent    la conf rence Paleozoic Carbonates Seminar (25-26 mars 2002: Pau, France).
- 2001**
407. Casier, J.-G., Lethiers, F., & Pr at, A. (2001). *Les ostracodes pendant l' v nement Hangenberg au passage D vonien/Carbonif re, en Montagne Noire.* Paper session presented at S ance sp cialis e de la Soci t  G ologique de France, Pal obiodiversit , Crise, Pal oenvironnement (6 et 7 d cembre 2001: Paris).
408. Kolo, K., Pr at, A., Mamet, B., Devleeschouwer, X., & Gillan, D. (2001). *Fungal hyphae, spores and bacteria from the Lower Cretaceous of Central Italy and from the Upper Devonian of the Rocky Mountains, Canada: how old are they ? Preliminary study* Paper session presented at Session Sp. Geologica Belgica (22 mars 2001: Universit  Catholique de Louvain, Belgique).
409. Kolo, K., Gillan, D., Gorbushina, A., Mamet, B., & Pr at, A. (2001). *Spherical tubercular and branched fossil structures from Lower Carboniferous (Vis an) of Northern France.* Paper session presented at S ance sp cialis e de la Soc. g ologique d'Allemagne (Octobre 2001: Hanse Institute, Oldenburg University, Germany).
410. Bertrand, M., Pr at, A., & Racki, G. (2001). *Sedimento-diagenesis and palaeostructure of the reefal Frasnian complex in the Holy Cross Mountains (Poland).* Paper session presented at Session Sp. Geologica Belgica (22 mars 2001: Universit  Catholique de Louvain, Belgique).
411. Casier, J.-G., Lethiers, F., Devleeschouwer, X., Pr at, A., & Racki, G. (2001). *Les ostracodes au passage Frasnien/Famennien dans les Monts Sainte-Croix de Pologne.*

Poster présenté à la conférence Séance spécialisée de la Société Géologique de France, Paléobiodiversité, Crise, Paléoenvironnement (6-7 Décembre 2001: Paris).

412. Gillan, D., De Ridder, C., Kolo, K., & Prétat, A. (2001). *Analysis of a recent iron-encrusted biofilm and inference of paleoenvironments* Poster présenté à la conférence 'Fossil and Recent Biofilms: a natural history of the impact of life on Planet Earth' (17-21 février 2001: Hanse Institute, Oldenburg University, Germany).
413. Prétat, A., Kolo, K., Mamet, B., Bruni, R., Verrechia, E., & Gillan, D. (2001). *Fungal hyphae, spores and bacteria from the Lower Cretaceous of Central Italy: how old are they? Preliminary study* Poster présenté à la conférence 'Fossil and Recent Biofilms: a natural history of the impact of life on Planet Earth' (17-21 février 2001: Hanse Institute, Oldenburg University, Allemagne).
414. Kolo, K., Prétat, A., Mamet, B., Devleeschouwer, X., Verrechia, E., & Gillan, D. (2001). *Fungal hyphae, spores and bacteria from the Upper Devonian of the Rocky Mountains, Canada: how old are they? Preliminary study* Poster présenté à la conférence 'Fossil and Recent Biofilms: a natural history of the impact of life on Planet Earth' (17-21 février 2001: Hanse Institute, Oldenburg University, Germany).

2000

415. Bernard, A., Prétat, A., & Jumeau, F. (2000). *L'Eglise Notre- Dame du Sablon: étude préliminaire de l'altération des pierres* Paper session presented at Workshop CSTC-CRIC, La microscopie appliquée aux matériaux de construction (16 mai 2000).
416. Han, G., Goudalier, M., Mansy, J.-L., & Prétat, A. (2000). *Illite crystallinity analysis from deep Frasnian series in the southern border of the Dinant Basin, deduction of the tectonic loading*. Paper session presented at Session spéc., Geologica Belgica (6 avril 2000: Bruxelles, Belgique).

1999

417. Yans, J., Corfield, R., Prétat, A., Bertrand, M., & Boulvain, F. (1999). *Carbon and oxygen isotopes of non-luminescent brachiopods, micrites and cements of Belgian and Polish Devonian: influences of the global ocean atmosphere system*. Paper session presented at IAS, 19th Regional European Meeting of Sedimentology (24-26 Aout 1999: Copenhague, Danemark).
418. Prétat, A., Gillan, D., De Ridder, C., Boulvain, F., & Bernard, A. (1999). *Iron bacterial and fungal mats in the Bajocian historical stratotype (northern Normandy, France)*. Paper session presented at IAS, 19th Regional European Meeting of Sedimentology (24-26 Aout 1999: Copenhague, Danemark).
419. Lehmani, M., Prétat, A., & Keppens, E. (1999). *Microfaciès et isotopes stables (carbone, oxygène): deux outils en faveur du contrôle orbital de la cyclicité du Dévonien de la Meseta Nord-Occidentale du Maroc* Paper session presented at 7ème Congrès français de Sédimentologie (15-17 Novembre 1999: ASF, Nancy).
420. Yans, J., Corfield, R., Boulvain, F., Coen-Aubert, M., Bertrand, M., Herbosch, A., & Prétat, A. (1999). *Compositions isotopiques (C et O) de A Prétat p.20/36 6/6/12 brachiopodes non-luminescents dévoniens: un test pour l'enregistrement de la signature isotopique*

d'océans anciens. Paper session presented at 7ème Congrès français de Sédimentologie (15-17 novembre 1999: ASF, Nancy, France).

421. Gillan, D., Warnaud, M., Boulvain, F., & Préat, A. (1999). *Iron deposition in a marine biofilm: Biodegradation of iron-chelating organic compounds and geological implications* Poster présenté à la conférence IAS, 19th Regional European Meeting of Sedimentology (24-26 Aout 1999: Copenhague, Danemark).
422. Devleeschouwer, X., Préat, A., Averbuch, O., & Herbosch, A. (1999). *Magnetic susceptibility through the Frasnian-Famennian boundary (Steinbruch Schmidt, Germany and Coumiac, France)*. Poster présenté à la conférence IAS, 19th Regional European Meeting of Sedimentology (24-26 Aout 1999: Copenhague, Danemark).
423. Boulvain, F., Préat, A., Gillan, D., & De Ridder, C. (1999). *Iron- bacteria in Belgian Frasnian mud mounds* Poster présenté à la conférence IAS, 19th Regional European Meeting of Sedimentology (24-26 Aout 1999: Copenhague, Danemark).

1998

424. Préat, A., Chamley, H., Deconinck, J. F., Mansy, J.-L., & Han, G. (1998). *La sédimentation argileuse paléozoïque dans les bassins de Dinant et d'Avesnes (Belgique, France): relations avec la tectonique varisque*. Paper session presented at Réunion spécialisée de l'Assoc. des Sédimentologues français, de la Soc. géol. France et du Groupe français des argiles (Novembre 1998: Lille).

1997

425. Herbosch, A., Préat, A., & Devleeschouwer, X. (1997). *Géochimie et sédimentologie de la limite Frasnien-Famennien dans le stratotype de Coumiac (Montagne Noire, France)*. Paper session presented at 6ème Congrès français de Sédimentologie (17-19 Novembre 1997: Montpellier).
426. Han, G., Chamley, H., Deconinck, J. F., Mansy, J.-L., & Préat, A. (1997). *Burial diagenesis of French-Belgian Devonian series from Dinant Synclinorium and Philippeville Massif: Preliminary results from clay mineralogy analysis* Poster présenté à la conférence 6ème Congrès français de Sédimentologie (17-19 novembre 1997: Montpellier, France).
427. Devleeschouwer, X., Préat, A., & Herbosch, A. (1997). *Comparaison sédimentologique entre les coupes de Coumiac (France) et Schmidt (Allemagne) à la limite Frasnien-Famennien* Poster présenté à la conférence 6ème Congrès français de Sédimentologie (17-19 novembre 1997: Montpellier, France).
428. Yans, J., Préat, A., & Coen, M. (1997). *La bordure nord-est du Synclinorium de Dinant au Dévonien Moyen (coupe de Remouchamps): Stratigraphie, sédimentologie et diagenèse* Poster présenté à la conférence 1er Coll. Artois-Brabant (9-11 Avril 1997: Mons, Belgique).
429. Devleeschouwer, X., Préat, A., & Herbosch, A. (1997). *Sedimentological comparison between Coumiac (France) and Schmidt Sections (Germany) at the Frasnian-Famennian boundary* Poster présenté à la conférence CSPG-SEPM 1997 Joint Convention (1997: Calgary, Canada).

1996

430. Devleeschouwer, X., Préat, A., & Herbosch, A. (1996). *Sédimentologie et géochimie isotopique à la limite Frasnien-Famennien en Belgique*. Paper session presented at 17th IAS Regional African Meeting of Sedimentology (26-28 Mars 1996: Sfax, Tunisie).
431. Herbosch, A., Claeys, P., Devleeschouwer, X., & Préat, A. (1996). *Etude géochimique de la limite Frasnien-Famennien à Hony (Belgique)* Paper session presented at 17th IAS Regional African Meeting of Sedimentology (26-28 mars 1996: Sfax, Tunisie).
432. Préat, A., & Bertrand, M. (1996). *Evolution diagénétique du Dévonien carbonaté de Belgique et de Pologne: apports des isotopes stables (oxygène et carbone)*. Paper session presented at 17th IAS Regional African Meeting of Sedimentology (26-28 Mars 1996: Sfax, Tunisie).
433. Lehmani, M., Préat, A., & Keppens, E. (1996). *High frequency carbonate cycles in Middle Devonian of northwestern Meseta (Morocco)*. Paper session presented at 17th IAS Regional African Meeting of Sedimentology (26-28 mars 1996: Sfax, Tunisie).
434. Han, G., & Préat, A. (1996). *Carbonate cements in Middle Eifelian Couvin Formation in southern border of Dinant Synclinorium (Belgium)* Paper session presented at 17th IAS Regional African Meeting of Sedimentology (26-28 mars 1996: Sfax, Tunisie).
435. Casier, J.-G., & Préat, A. (1996). *Ostracods and sedimentology from the Eifelian/Givetian transition in the Marble Quarry of Pic de Vissous (Montagne Noire, France)*. Poster présenté à la conférence 3rd European Ostracodologists Meeting (9-12 juillet 1996: Paris-Bierville, France).
- 1995**
436. Préat, A., Mamet, B., & Devleeschouwer, X. (1995). *Microfaciès et séquences dans une série condensée du Dévonien Supérieur, Coumiac, Montagne Noire*. Poster présenté à la conférence Int. Meeting, Fauna, Flora and Sequence Stratigraphy (14-15 Décembre 1995: Paris).
- 1994**
437. Préat, A. (1994). *Etude préliminaire d'un récif Quaternaire soulevé entre Bogia et Nubia (Papouasie Nouvelle-Guinée): Sédimentologie, diagenèse, analyse séquentielle et implications tectoniques et eustatiques* Paper session presented at Conférence présentée à l'Académie Royale des Sciences d'Outre-Mer (Classe des Sciences Naturelles et Médicales) (25 janvier 1994).
- 1993**
438. Carliez, D., Préat, A., & Roche, M. (1993). *Comparaisons entre diverses méthodes d'acquisition et de traitement des données sédimentologiques en domaine carbonaté: exemple du Givétien supérieur franco-belge*. Paper session presented at 4ème Congrès Français de Sédimentologie (17-20 novembre 1993).
439. Préat, A., Bertrand, M., Boulvain, F., Herbosch, A., & Kasimi, R. (1993). *Sédimentologie et évolution des communautés récifales du Dévonien Moyen et Supérieur de Belgique*. Paper session presented at 14th I.A.S. International Meeting of Sedimentology (27-29 avril 1993: Marrakesh, Maroc).

440. Kasimi, R., & Préat, A. (1993). *Stacking patterns of meter-scale cycles on storm-dominated carbonate ramp, Middle Devonian, Belgium* Paper session presented at 14th I.A.S. International Meeting of Sedimentology (27-29 avril 1993: Marrakesh, Maroc).
441. Kasimi, R., & Préat, A. (1993). *Cyclicité et structurations synsédimentaires à l'Eifélien Supérieur et au Givetien Inférieur du bord sud du Bassin de Dinant (Belgique)* Abstract session presented at (June 4-5th: Leuven, Belgique).
442. Tourneur, F., Préat, A., & Coen-Aubert, M. (1993). *Complexes récifaux et tectonique synsédimentaire dans le Givetien inférieur de Belgique* Paper session presented at Premier Congrès de Paléontologie (7 juillet 1993: Lyon, France).

1992

443. Tourneur, F., Vanguetstaine, M., Buttler, C., Mamet, B., Mouravieff Poty, N., Poty, E., & Préat, A. (1992). *Contribution to the paleontological and sedimentological study of Ashgillian limestones of the Fosses Formation (Condroz, Belgium)*. Paper session presented at Caledonides of the Anglo-Brabant Massif and Adjacent Areas, Spec. Meeting of the Geol. Soc. of London, , (17-18 Septembre 1992: Nottinghamshire, Royaume-Uni).
444. Vennin, E., Soria, A., Préat, A., & Melendez, A. (1992). *Sequence stratigraphy of the lower Cretaceous of the Oliete Basin (NE, Spain): Depositional sequences and higher frequency cycles*. Abstract session presented at CNRS-IFP(18-20 mai 1992: Dijon, France).
445. Herbosch, A., Préat, A., & De Ridder, C. (1992). *L'île récifale de Laing (Papouasie-Nouvelle Guinée): dynamique sédimentaire* Paper session presented at Annual Meeting of the Contact Group "Sédimentologie" du FNRS (Mai 1992).
446. Kasimi, R., & Préat, A. (1992). *Importance des tempestites dans la dynamique de l'Eifélien supérieur et du Givetien inférieur du bord sud du Bassin de Dinant (Belgique)* Paper session presented at Annual Meeting of the Contact Group "Sédimentologie" du FNRS (Mai 1992).
447. Kasimi, R., & Préat, A. (1992). *Dynamic stratigraphy in Middle Devonian shallow-marine sequences of Belgium*. Abstract session presented at (6-8 mai 1992: Chichilianne, France).
448. Tourneur, F., Butler, C., Mamet, B., Mouravieff Poty, E., Poty, E., Préat, A., & Vanguetstaine, M. (1992). *Contribution to the palaeontological and sedimentological study of the Ashgillian limestones of the Fosses Formation (Condroz, Belgium)*. Paper session presented at Second Caledonides Internat. Congress (Septembre 1992).

1991

449. Préat, A. (1991). *Stratigraphie séquentielle dans le Famennien supérieur de la Vallée de l'Ourthe: modèle de barres sableuses et application aux réservoirs pétroliers*. Paper session presented at Exposé (19 avril 1991: Paris).
450. Vennin, E., Soria, A., Préat, A., & Melendez, A. (1991). *Los sedimentos marinos del Cretacio inferior de la Cubeta de Oliete: Analisis secuencial* Paper session presented at 3e Coloquio del Cretaci de Espana (2-4 Septiembre 1991: Morella, Espagne).

451. Préat, A., & Boulvain, F. (1991). Structurations synsédimentaires des rampes et plates-formes du Dévonien moyen et supérieur franco-belge. Abstract session presented at Réunion FNRS-Groupe de contact "Sédimentologie" à Leuven.
452. Préat, A., & Boulvain, F. (1991). *Cyclicality and paleoenvironmental dynamics in Middle and Upper Devonian carbonate ramps and platforms of Belgium* Poster présenté à la conférence Dolomieu Conference on Carbonate Platforms and Dolomitization (16-18 Aout 1991: Ortisei/St. Ulrich, Italie).

1990

453. Boulvain, F., & Préat, A. (1990). *Dynamique sédimentaire du Couvinien Supérieur au Frasnien Supérieur dans les Bassins de Namur et de Dinant (Belgique, France)* Paper session presented at Meuse-Rhine Geologists Meeting (18 mai 1990: Mont Rigi (Hautes Fagnes)).
454. Cahen, L., De Putter, T., & Préat, A. (1990). *La "Grande Brèche" ("V3a") et son équivalent latéral dans la région de Namur et de Thon- Samson* Paper session presented at Réunion FNRS-Groupe de contact "Sédimentologie" (28-29 mars 1989: Liège, Leuven, Belgique).

1989

455. Préat, A., & De Putter, T. (1989). *Subaerial crusts, ooids and breccia horizons in Upper Visean of Namur Basin (Belgium): Sedimentology and diagenesis.* Paper session presented at 10th European Regional Meeting I.A.S (Budapest, Hongrie).
456. Claeys, P., Mefira, A., & Préat, A. (1989). *Sédimentologie et diagenèse d'un "mound" algaire du Viséen moyen de Bouffioulx (Province du Hainaut, Belgique)* Paper session presented at Réunion de la Société belge de Géologie (Liège).

1988

457. Préat, A. (1988). *Utilisation des corps sableux du Famennien supérieur en tant que modèle avancé pour les réservoirs d'hydrocarbures* Paper session presented at Exposé.
458. Préat, A., Nezzal, F., Hanssen, E., & Herbosch, A. (1988). *Upper Aptian continental, shelf and slope facies, northern Aures area, (Algeria).* Paper session presented at 9th European Regional Meeting of Sedimentology I.A.S. (Leuven).
459. Mamet, B., & Préat, A. (1988). *Sedimentation of the French-Belgian Givetian carbonate platform* Paper session presented at 9th European Regional Meeting of Sedimentology I.A.S. (Leuven).
460. Préat, A. (1988). *Dolomitisation et modèle d'implantation de forage dans le champ de Quinfuquena (Bassin du Bas-Congo angolais, Angola)* Paper session presented at Dolomitisation et modèle d'implantation de forage dans le champ de Quinfuquena (Bassin du Bas-Congo angolais, Angola).
461. Préat, A., & Herbosch, A. (1988). *Dynamique de bréchification dans le "V3a" belge* Poster présenté à la conférence 9th European Regional Meeting of Sedimentology I.A.S (Leuven, Belgique).

1986

462. Préat, A., & Boulvain, F. (1986). *Phreatic and vadose diagenetic modification in Givetian reefal and lagoonal sediments associated with regressive progradational sequences (Dinant Basin, Belgium)* Paper session presented at 7th European Regional Meeting of Sedimentology I.A.S (Cracovie, Pologne).

463. Préat, A. (1986). *Distribution of the reef building community in the Givetian carbonate platform of Belgium* Paper session presented at 7th European Regional Meeting of Sedimentology I.A.S. (Cracovie, Pologne).

1985

464. Préat, A., & Boulvain, F. (1985). *Lower Givetian laminites (tempestites) of Belgium: sedimentological and paleogeographical approaches.* Paper session presented at 6th European Regional Meeting of Sedimentology I.A.S. (Lleida, Espagne).

465. Préat, A. (1985). *Faciès pré-évaporitiques dans le Givétien des bassins de Dinant et de Namur (Belgique, France)* Paper session presented at Colloque international de Bruxelles "Les Evaporites pré-permiennes en Europe. Aspects sédimentologiques, paléogéographiques et structuraux". (9-10 mai 1985: Bruxelles).

466. Préat, A. (1985). *Beach-rocks associated with lower Givetian reefal sequences of the south border of the Dinant Basin (Belgium, France).* Paper session presented at Symposium on Modern and Ancient Tidal Deposits (26-28 Aout 1985).

467. Mamet, B., Claeys, P., Herbosch, A., Préat, A., & Wolfowicz, P. (1985). *La "Grande Brèche" viséenne (V3a) des bassins de Namur et de Dinant (Belgique) est probablement une brèche d'effondrement* Paper session presented at Colloque international de Bruxelles "Les Evaporites pré-permiennes en Europe. Aspects sédimentologiques, paléogéographiques et structuraux" (9-10 mai 1985: Bruxelles, Belgique).

468. Mamet, B., Claeys, P., Herbosch, A., Préat, A., & Wolfowicz, P. (1985). *A collapse breccia origin for the "Grande Brèche" (Late Visean), Dinant and Namur Basins (Belgium).* Paper session presented at 6th European Regional Meeting of Sedimentology I.A.S (Lleida, Espagne).

469. Préat, A. (1985). *Sedimentary dynamic processes in Givetian carbonate platform (Belgium, France)* Paper session presented at 6th European Regional Meeting of Sedimentology I.A.S. (Lleida, Espagne).

1984

470. Préat, A., & Tourneur, F. (1984). *Dynamique sédimentaire de deux complexes récifaux du Givétien Inférieur du bord sud du Bassin de Dinant* Paper session presented at 5ème Congrès Européen de Sédimentologie I.A.S. (Marseille).

471. Herbosch, A., & Préat, A. (1984). *Géochimie comparée des sédiments carbonatés du Givétien du bord sud du Bassin de Dinant et du bord sud du Bassin de Namur* Poster présenté à la conférence . 5ème Congrès Européen de Sédimentologie I.A.S. (Marseille).

1983

472. Préat, A. (1983). *Découverte d'un marbre blanc d'âge Frasnien moyen à Gourdinne (Province de Namur)* Paper session presented at Communication présentée à la séance de la Société belge de Géologie (8 mars 1983).
473. Poels, J., & Préat, A. (1983). *Mise en évidence d'une série évaporitique dans le Viséen inférieur de Vedrin (Province de Namur)*. Paper session presented at Communication présentée à la séance de la Société belge de Géologie (8 mars 1983).
474. Préat, A., Coen-Aubert, M., Mamet, B., & Tourneur, F. (1983). *Sédimentologie et paléocéologie de trois niveaux récifaux du Givétien Inférieur de Resteigne (bord sud du Bassin de Dinant, Belgique)* Paper session presented at Premier Congrès International de Paléocéologie (18-23 juillet 1983: Lyon, France).

1982

475. Préat, A., & Herbosch, A. (1982). *Lithogeochemical study of Belgian Givetian (Dinant Basin)* Paper session presented at Congrès CCE- London, "Geology of ore deposits and their host rocks, geochemical methods in mineral prospecting" (Londres, Royaume-Uni).
476. Préat, A., Cauet, S., & Herbosch, A. (1982). *Caractère épigénétique-étranger des gîtes filoniens Pb-Zn-F-Ba du district du bord sud du Synclinorium de Dinant* Abstract session presented at (22-24 avril 1982: B.R.G.M., Orléans).

1979

477. Jedwab, J., & Préat, A. (1979). *Présence de raspite (PbWO₄, Monoclinique) dans l'anthonite (AlOH.WO₄.H₂O, triclinique) de Gifurwe, Rwanda*. Paper session presented at Communication présentée à la séance ordinaire de la Société belge de Géologie (12 Juin 1979).

Thèses et mémoires (1)

1984

478. Préat, A. (1984). *Etude lithostratigraphique et sédimentologique du Givétien belge (Bassin de Dinant)* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des sciences, Bruxelles.
- <https://dipot.ulb.ac.be/dspace/bitstream/2013/213716/3/6872a255-d86f-4af7-8620-c2e04ccc5899.txt>
- <https://dipot.ulb.ac.be/dspace/bitstream/2013/213716/4/5b83c3ae-bd83-4d18-83ec-2dffcdf284e.txt>

Activités de vulgarisation (10)

2012

479. Préat, A. (2012). *La fin du pétrole?* [Emission] In *Europarlement TV*.

2011

480. Préat, A. (2011). *Ne dérangeons pas les tourbières! Des "bombes" de gaz à effet de serre...* *Imagine*, 30-31.

481. Préat, A. (2011). Ne dérangeons pas les tourbières! Des "bombes" de gaz à effet de serre... *L'Echo*, 34.
482. Préat, A. (2011). Le pétrole, il ne peut en manquer: Parole de géologue... *L'Echo*, 34.

2006

483. Préat, A. (2006). L'Ere du pétrole: pour combien de temps encore? *L'Artichaut*, 23(4), 21-29.
484. Préat, A. (2006). Les réserves pétrolières *Le Vif l'Express*.
485. Préat, A. (2006). La mort du pétrole de notre vivant? *Télé Moustique*.

2004

486. Préat, A. (2004). L'apocypse pétrolière *Le Soir*.
487. Mamet, B., & Préat, A. (2004). Pourquoi donc les marbres rouges sont-ils rouges ? *Bulletin de la Société géologique de Touraine*, 12/14, 45-64.

2003

488. Mamet, B., & Préat, A. (2003, mai). Pourquoi donc les marbres rouges sont-ils rouges ? *Bulletin du GEST*, 119, 2-12.

Divers (6)

2012

489. Préat, A. (2012). *Panique sur les réserves de pétrole ?*

2011

490. Préat, A. (2011). *GEOL-F-203 The Geologic Time: reasoning about rocks and fossils*.

2007

491. Préat, A. (2007). *GEOL-F-404: Cycles biogéochimiques du Fe et Mn : contrôles bactériens (en association avec D. Gillan, Biologie Marine, ULB)*.

2005

492. Préat, A., & Hanappe, F. (2005). *GEOL-F-103: Problème actuels de la gestion de l'énergie*.

2003

493. Préat, A. (2003). *Notebooks on Geology- Carnets de Géologie*'.

2001

494. Préat, A. (2001). *Dossier sur l'Energie: 'L'Energie, le point de vue du géologue*'.

Direction de thèses (13)

2018

495. Salih, N. (2018). *Characteristics, genesis and parameters controlling the development of Cretaceous-Tertiary hydrothermal dolomitization (SE-France and NE Iraq) associated with a newly discovered calcretization phase (NE Iraq): timing of the sedimentary and diagenetic events* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: Triassic-Jurassic outcrops in Provençal Domain-SE France and Upper Cretaceous Bekhme Formation in Harir-Safin anticlines-NE Iraq are extensively fractured and dolomitized along open spaces in carbonate rocks. Extensive fieldwork, enhanced petrography and geochemistry (trace, REE, major elements, $87\text{Sr}/86\text{Sr}$, $\#18\text{OVPDB}$, $\#13\text{CVPDB}$), and U-Pb datings demonstrate the multi-phase generation of saddle dolomites and blocky calcites formed by the action of deep hot brine fluids, which migrated along fault zones. Petrography and geochemistry revealed three main diagenetic stages in the French Triassic (T)-Jurassic (J) studied outcrops. The first stage is characterized by crystalline replacive dolomites (D1T/ DJ) and medium-sized dolospars (D2T) precipitated in the eogenetic realm from normal seawater and meteoric fluids. The second stage with medium- to coarse-grained saddle dolomites (SD1T/J and SD2T/J) formed under shallow diagenetic realm during Early Cretaceous times, and very coarse-sized zoned and unzoned saddle dolomites (SD3T/J, SD4T/J, and SD5J, SD6J, DrJ) precipitated under deep diagenetic realm (Th between $120\text{ }^{\circ}\text{C}$ and $278\text{ }^{\circ}\text{C}$) during a Late Cretaceous tectonic activity. Two types of stylolites, extensive fracturing of the carbonates, and breccia/zebra structures, were also formed as a result of the activities of two recognized sub-generations of hydrothermal fluid influxes associated to the second stages. Therefore, they are characterized by a pervasive polyphasic hydrothermal dolomitization that occurred along fractured zones with a wide range of $\#18\text{OVPDB}$ and $87\text{Sr}/86\text{Sr}$ values. The transition from high (Th between $81\text{ }^{\circ}\text{C}$ and $278\text{ }^{\circ}\text{C}$; av. = $207\text{ }^{\circ}\text{C}$) to low (Th between $44\text{ }^{\circ}\text{C}$ and $77\text{ }^{\circ}\text{C}$; av. = $61\text{ }^{\circ}\text{C}$) fluid temperatures identifies the third stage of diagenesis. This stage produced the late calcitic cements C1T and C1J with extra-negative oxygen and carbon isotope compositions, and this is related to two different fluids during the uplifting of the studied area in Late Cretaceous-Eocene times. The Triassic dolomites mostly show depleted $87\text{Sr}/86\text{Sr}$ values compared to the Jurassic dolomites that have striking higher $87\text{Sr}/86\text{Sr}$ values with respect to the marine sea facies. The same lowered radiogenic compositions are measured in the Jurassic calcites (C1J) while the one of the Triassic calcite is higher (C1T). These are probably linked to the pulses of the seafloor hydrothermal activity that lowered the $87\text{Sr}/86\text{Sr}$ ratios and to an increase of the continental riverine input during Late Cretaceous and Early Cenozoic. In NE-Iraq, the Bekhme Formation along the Harir-Safin anticlines experienced extensive hot brine fluids that produced several phases of saddle dolomites (SD1, SD2, SD3) and blocky calcite cements (CI, CII). Detailed petrography and geochemical analysis showed that the saddle dolomites and blocky calcites precipitated from deep hydrothermal fluxes ($83\text{ }^{\circ}\text{C}$ - $190\text{ }^{\circ}\text{C}$) and from very saline fluids (up to 25 eq. wt.% NaCl; i.e. 7 times the seawater salinity) that interacted with the crystalline basement rocks during their circulation before invading the Bekhme Formation. Fluid inclusion petrography, fluorescence microscopy and microthermometry revealed two entrapment episodes of oil FIs hosted in the HT cements, i.e. early and late episodes. The early entrapment episode of FIs is linked to the fault-related fractures in the Bekhme Formation and was contemporaneous with the precipitation of the HT cements. The late entrapment episode of FIs is consistent with low saline fluids (0.18 and 2.57 eq. wt.% NaCl) formed under near-surface conditions ($13\text{ }^{\circ}\text{C}$). Shortly after the HT emplacement, an alteration and in situ brecciation of the host limestone and HT saddle dolomites/blocky calcites by alveolar texture led to the formation of two calcrete levels in the dolomitized Bekhme Formation. Extensive fieldwork and geochemistry show repeated occurrence of 2-6 m thick pedogenic levels within the Bekhme carbonates. These levels resulted from a complex interplay between sea level fluctuations and/or tectonic events that produced multiple phases of submergence and emergence during the depositional age of the Bekhme Formation. Consequently, sea level fluctuations and tidal signals are strongly implied. The LA U-Pb dating analysis using small scale isochrones (SSI) method defines the first generation of major HT diagenesis occurring at $\sim 73.8\text{ Ma}$ and predates the calcrete formation ($\sim 70\text{ Ma}$) and postdates the early matrix dolomite ($\sim 74.8\text{ Ma}$). Therefore,

this diagenetic generation was emplaced in the lowermost part of the Bekhme Formation (75.1 Ma) and was synchronous with the formation of depositional age (Campanian-Early Maastrichtian). The second generation of major HT diagenesis during which a new phase of saddle dolomites/blocky calcites precipitated, spans ages between 8.6 Ma and 30.3 Ma. Within this phase minor phases of HT fluids precipitated similar products (CI = 30.3 Ma - Early Oligocene; CII = 18.7 Ma - Late Miocene; SD2/SD3 = 14.5/8.6 Ma - Late Miocene). Tectonically, the numerical age data (~ 73.8 Ma to 8.6 Ma) is in an acceptable agreement with the two major generations of orogenic folding-faulting systems during the Late Cretaceous and Tertiary interval times and caused by Arabian-Eurasian plates convergence. Samples from the lower calcrite level returned two LA U-Pb ages ~70 Ma and 3.8 Ma corresponding to two horizons within the calcrite, and strongly suggesting that the same calcrite level was twice exposed to subaerial conditions. The earlier exposure was associated with alveolar and other microbial diagenetic features such as dissolution, micritization, cementation... etc. while the second calcrite exposure is associated with laminae, pisolitic, and microstromatolite features during regional uplifting of the area within the Pliocene. In conclusion, a tectonic model is developed for Harir-Safin anticlines, combines fieldwork observations, petrography, geochemistry, and U-Pb numerical age data. The latter method brings new insight into the dating of the fractures/geodes formation and the generation of the HT fluids controlled by tectonics.

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<https://dipot.ulb.ac.be/dspace/bitstream/2013/273530/6/ContratDiSalih.pdf>

2017

496. Ackouala Mfere, A. P. (2017). *Sédimentologie, Cyclicité et Diagenèse des Carbonates de la Formation du Schisto-Calcaire (SClC) dans les sous-bassins de Niari-Nyanga et de Comba en République du Congo* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: An integrated field, petrography and sedimentological analysis is coupled with major/trace elements and stable isotope ($\delta^{13}\text{C}$, $\delta^{18}\text{O}$) compositions in order to decipher the paleoenvironments and the diagenetic conditions in the Neoproterozoic SClC Formation (> 635-575 Ma) in the Niari/Nyanga and Comba areas (Republic of the Congo). The study recognizes seven major carbonate microfacies and paleoenvironments on the basis of mineralogy, bathymetry, energy, salinity and diagenetic process. It allowed to establish a sedimentological model recording a ramp setting with identified proximal and distal sedimentation. The transition between the shallow- and deeper-water environments is highlighted by the development of an extensive oolitic shoal, about 100 km long, a few km wide and up to 75 m-thick. The evolution of the sedimentation through the 22 studied sections allow to propose a sequence stratigraphy analysis with metre- to pluridecametre- thick depositional sequences from the fifth- to third-orders and highlights the effects of diagenesis on the primary signature of these carbonates. Two categories of fifth-order or elementary parasequences (or cycles) are recognized: (i) subtidal cycles, bounded by marine flooding surfaces across which facies deepen; and (ii) peritidal cycles bounded by subaerial exposure surfaces. These cycles are the result of the interplay of relative sea-level changes due to eustatic variations related to periodic extensional tectonic events affecting the whole basin and leading to uplifted phase in the context of a general block faulting system. The cycles, and the parasequence sets (fourth-order) they are included into a Highstand Systems Tract (HST) of a third-order sequence related to the deposition of the SCl Subgroup. The HST developed above the maximum flooding surface linked to both the deglaciation of the Marinoan Snowball Earth event and extensional tectonic events affecting the whole basin. Giant stromatolitic bioherms (stacked on up to 20 m) are topped by ooid shoals (up to 75 meters thick) with intraclasts and reworked grapestones. These shoals initiated the general regressive prograding phase of the HST that ended with evaporitic and karstic conditions at the top of the SClC Formation. The equivalent stratigraphic unit of the Bas-Congo Basin (DRC) is compared and a sequence stratigraphy correlation between RC and RDC

is attempted, despite no paleontologic data are available, and highlighted the role of the tectonics affecting both basins. The negative $\delta^{18}\text{O}$ (-10.3 ‰ to -5.1 ‰) and $\delta^{13}\text{C}$ (-8.8 ‰ to - 1.1 ‰) values (n=288) in the SC1c Formation record a diagenesis in the meteoric and/or burial realms. Different diagenetic phases have been identified from syn-depositional/early diagenesis to shallow burial. In coarse-grained levels, an isopachous calcite rim cement (initially aragonite as suggested by very high Sr levels in these carbonates) occurs around the components while a blocky calcite cement fills the remaining intergranular pores. Hypersaline conditions are attested by euhedral sulfate minerals now calcitized and silicified. The exposure of these carbonates to meteoric waters was not strong enough or too long to favor large dissolutions, allowing preservation of high Sr values (up to 10000 ppm) in the micritic and in the oolitic facies. These high values suggest that the initial mineralogy was dominantly aragonite. A comparison with the Lower Congo (Democratic Republic of the Congo) and Nyanga (Gabon) subbasins in the West Congolian System shows that the meteoric circulation in the lower part of the Schisto-Calcaire Group was regional and not local, and could be due to climatic changes during late Neoproterozoic times. Finally, as revealed by their purity in calcium carbonate the oolitic facies is a prime target for the cement industry. The best facies can be recognized very easily in the field thanks to a very intense stylolitization (very tight stylolites, with amplitudes up to 10 cm). At the regional scale, the Niari / Nyanga and Comba basins in the Republic of Congo present the best sedimentary model that is, it is the most complete showing on the field all facies from the microbial 'MISS' facies with giant stromatolites to lagoons and emersion facies with microbial mats, isolated behind a large oolitic shoal which is sometimes interdigitated vertically and horizontally with the giant stromatolites. It is this very complete and detailed succession which made it possible to highlight a phase of tectonic uplift and also made it possible to differentiate the sequences developing directly on the Archean basement from those which overcome the SC1b siltstones. Facies equivalent to Gabon and the Democratic Republic of Congo do not allow to observe all the geometries of these sedimentary bodies. In any case, correlations are possible between these three regions, thanks to the sequential analysis and despite the fact that the $\delta^{18}\text{O}$ and $\delta^{13}\text{C}$ have no stratigraphic value, the primary signal having been quite early altered by the meteoric diagenesis.

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2014

497. Kusters, D. (2014). *Etudes des sources locales de contraintes et des variations spatio-temporelles de l'activité sismique à l'intérieur de la plaque européenne* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: Les causes de l'activité sismique à l'intérieur des plaques tectoniques sont encore mal comprises, que ce soit l'origine des contraintes responsables des séismes ou leur relation avec la variation dans le temps et dans l'espace de l'activité sismique. Les contraintes à l'intérieur des plaques résultent de l'action de forces de longueurs d'onde différentes, qui se superposent et s'additionnent. En utilisant une nouvelle méthode (Camelbeeck et al., 2013), déterminant les contraintes générées localement (échelle de 10 à 100 km), nous estimons l'importance relative de cette composante locale du champ de contrainte. En comparant ces contraintes locales avec les contraintes déduites des mécanismes au foyer des tremblements de terre en Europe occidentale, nous suggérons que celles-ci semblent jouer un rôle non-négligeable dans l'occurrence de l'activité sismique. C'est le cas dans des régions où les contraintes locales étaient déjà reconnues, mais également dans des régions précédemment identifiées comme dominées par les contraintes à plus grandes longueurs d'onde. Le champ de contrainte généré localement est constant à l'échelle de temps des catalogues sismiques, ce qui ne permet pas d'expliquer l'occurrence dans le temps des séismes. Il est cependant modifié par les variations des contraintes locales générées par l'activité sismique elle-même, ce qui explique les séquences de répliques des séismes de Roermond (13/04/1992, Mw=5.4) et d'Alsdorf (22/07/2002, Mw= 4.7) dans le graben de la Roer.

Nous y suggérons également l'importance de ces variations à une échelle de temps plus longue (millier d'années) à partir des données de paléoséismologie. Pour mieux comprendre les relations spatio-temporelles des séismes, nous avons également analysé dans quelle mesure l'occurrence de l'activité sismique dans le graben de la Roer est un processus de Poisson, ou si l'activité future est localisée à proximité des séismes du passé, ou située dans des régions dénuées de séismes à ce jour. L'emploi des méthodes linéaires classiques et de méthodes non-linéaires dans cette région mais aussi dans les îles britanniques et dans le sud de la Norvège montrent que les séismes du passé ne peuvent expliquer les taux d'activité sismique actuellement mesurés. Une partie de l'activité sismique correspond ainsi à une activité de background, indépendante de l'occurrence des séismes du passé. La méthode des multifractales permet aussi de caractériser régionalement l'importance, la variété et continuité des processus responsables de l'activité sismique sans pour autant en identifier les causes. Notre travail nous a permis d'identifier l'importance relative de certaines causes de l'activité sismique, par exemple l'importance des variations locales des contraintes générées par l'activité séismique elle-même, mais n'a pas permis par exemple d'identifier l'origine de l'activité de background, clairement mise en évidence par l'analyse multifractale.

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2013

498. Delpomdor, F. (2013). *Sedimentology, geochemistry and depositional environments of the 1175-570 Ma carbonate series, Sankuru-Mbuji-Mayi-Lomami-Lovoy and Bas-Congo basins, Democratic Republic of Congo: new insights into late Mesoproterozoic and Neoproterozoic glacially- and/or tectonically-influenced sedimentary systems in equatorial Africa* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: The one of the most important Eras of the Earth history, i.e. Neoproterozoic (1000-542 Ma), was an enigmatic period characterized by the development of the first stable long-lived ~1.1-0.9 Ga Rodinia and 550-500 Ma Gondwana supercontinents, global-scale orogenic belts, extreme climatic changes (cf. Snowball Earth Hypothesis), the development of microbial organisms facilitating the oxidizing atmosphere and explosion of eukaryotic forms toward the first animals in the terminal Proterozoic. This thesis presents a multidisciplinary study of two Neoproterozoic basins, i.e. Bas-Congo and Sankuru-Mbuji-Mayi-Lomami-Lovoy, in and around the Congo Craton including sedimentology, geochemistry, diagenesis, chemostratigraphy and radiometric dating of carbonate deposits themselves. The Mbuji-Mayi Supergroup sequence deposited in a SE-NW trending 1500 m-thick siliciclastic-carbonate intracratonic failed-rift basin, extends from the northern Katanga Province towards the centre of the Congo River Basin. The 1000 m-thick carbonate succession is related to the evolution of a marine ramp submitted to evaporation, with 'deep' shaly basinal and low-energy carbonate outer-ramp environments, marine biohermal midramp (MF6) and 'very shallow' restricted tide-dominated lagoonal inner-ramp (MF7-MF9) settings overlain by lacustrine (MF10) and sabkha (MF11) environments, periodically submitted to a river water source with a possible freshwater-influence. The sequence stratigraphy shows that the sedimentation is cyclic in the inner ramp with plurimetric 'thin' peritidal cycles (± 4 m on average) recording a relative sea level of a maximum of 4 m, with fluctuations in the range of 1-4 m. The outer/mid ramp subtidal facies are also cyclic with 'thick' subtidal cycles characterized by an average thickness of ± 17 m, with a probable sealevel fluctuations around 10 to 20 m. The geochemistry approach, including isotopic and major/trace and REE+Y data, allows to infer the nature of the dolomitization processes operating in each carbonate subgroup,

i.e dolomitization may be attributed to evaporative reflux of groundwater or to mixing zones of freshwater lenses. The latest alteration processes occurred during the uplift of the SMLL Basin. New ages, including LA-ICP-MS U-Pb laser ablation data on detrital zircon grains retrieved in the lower arenaceous-pelitic sequence (BI group), combined with carbon and strontium isotopic analyses, yielded a new depositional time frame of the Mbuj-Mayi Supergroup between 1176 and 800 Ma reinforcing the formerly suggested correlation with the Roan Group in the Katanga Province.

In the Democratic Republic of Congo, the Sturtian-Marinoan interglacial period was previously related to pre-glacial carbonate-dominated shallow marine sedimentation of the Haut-Shiloango Subgroup with stromatolitic reefs at the transition between greenhouse (warm) and icehouse (cold) climate periods, commonly marked by worldwide glaciogenic diamictites and cap carbonates. This thesis highlights that these deposits record a deepening-upward evolution from storm-influenced facies in mid- and outer-ramps to deepwater environments, with emplacement of mass flow deposits in toe-of-slope settings controlled by syndimentary faults. In absence of diagnostic glacial features, the marinoan Upper Diamictite Formation is interpreted as a continuous sediment gravity flow deposition along carbonate platform-margin slopes, which occurred along tectonically active continental margins locally influenced by altitude glaciers, developed after a rift–drift transition. The maximum depth of the deepening-upward facies is observed in the C2a member. The shallowing-upward facies exhibit a return of distally calcareous tempestites and semi-restricted to restricted peritidal carbonates associated with shallow lagoonal subtidal and intertidal zones submitted to detrital fluxes in the upper C2b to C3b members.

The geochemistry highlights (i) the existence of a $\delta^{13}\text{C}$ -depth gradient of shallow-water and deep-water carbonates; (ii) the carbonate systems were deposited in oxic to suboxic conditions; and (iii) all samples have uniform flat non-marine shale-normalized REE+Y distributions reflecting continental detrital inputs in nearshore environments, or that the nearshore sediments were reworked from 'shallow' inner to mid-ramp settings in deep-water slope and outer-ramp environments, during the rift-drift transition in the basin. The pre-, syn- and post-glacial carbonate systems could record a distally short-lived regional synrift freshwater-influenced submarine fan derived from nearshore sediments, including gravity flow structures, which are attributed to regional tectonic processes due to a sudden deepening of the basin caused by differential tilting and uplifting of blocks, related to the 750-670 Ma oceanic spreading of the central-southern Macaúbas Basin.

Combining sedimentology, isotopes and trace elemental geochemistry, the thesis highlights that the $\delta^{13}\text{C}$ variations in the Neoproterozoic carbonates are complex to interpret, and can be related to: (i) the existence of a $\delta^{13}\text{C}$ -depth gradient; (ii) the exchange between isotopically light carbon in meteoric waters and carbonate during lithification and early diagenesis; and (iii) isotopic perturbations due to regional metamorphism. Considering the possible englaciation of the Earth (Snowball Earth hypothesis), the Mbuj-Mayi Supergroup and West Congolian Group seem reflected the intimate relationship between glaciations and tectonic activity during the break-up of the Rodinia supercontinent, followed by the rift–drift transition, and finally the pre-orogenic period on the passive continental margin.

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2011

499. Lecocq, T. (2011). *L'activité sismique en Ardenne et sa relation avec la tectonique active* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: La Belgique et les régions voisines sont situées loin des limites des plaques tectoniques, pourtant, l'activité sismique y démontre l'existence de phénomènes géodynamiques récents. Le séisme historique le plus important (magnitude 6 ¼) au nord des Alpes s'est produit le 18 septembre 1692 dans le nord de l'Ardenne et a été fortement destructeur dans la région de Verviers, provoquant des dégâts légers jusqu'à Londres. L'étude de l'activité sismique en Ardenne et l'identification de failles actives en lien avec la tectonique active régionale est donc primordiale pour la caractérisation du cadre séismotectonique et donc de l'évaluation de l'aléa sismique de la région. L'activité sismique depuis 1985, date de l'installation du réseau sismique moderne en Belgique, a été étudiée en matière de localisation relative des séismes et de caractérisation de leur distribution spatiale en relation avec les mécanismes au foyer. Cette étude a été effectuée après adaptation, comparaison et évaluation de la qualité des différents algorithmes de relocalisation disponibles. Une structuration de l'Ardenne a été mise en évidence en étudiant la relation entre la distribution géographique et la profondeur d'occurrence des séismes. Différents alignements des foyers sismiques et le lien avec une structure plane ont été déterminés, par exemple dans la région de Charleroi, sous les Hautes-Fagnes ou dans la région de Manderfeld. La corrélation entre les structures de la croûte sous l'Ardenne mises en évidence par les grandes études géophysiques dans les années 70-80 et la distribution géographique des séismes illustrent le rôle important joué par la Zone Faillée de Hockai, qui limite l'Ardenne en terme de propriétés rhéologiques déduites de la profondeur des foyers sismiques. Nous montrons aussi la faiblesse de l'hypothèse affirmant que la Faille du Midi accommode la déformation actuelle dans nos régions. De même, la corrélation entre les anomalies magnétiques et gravimétriques de la croûte sous l'Ardenne a été étudiée qualitativement. Les causes et conséquences du soulèvement Cénozoïque ont été critiquées objectivement. Cette première partie permet de dessiner un cadre séismotectonique bien défini en Ardenne. L'identification de failles actives sur le terrain en Ardenne est compliquée par le faible taux de déformation qu'elle subit. Les grands tremblements de terre sont peu fréquents et leur trace éventuelle à la surface est rapidement effacée par l'érosion et l'altération. La Zone Faillée de Hockai (ZFH), siège supposé du séisme de 1692, a été étudiée par des méthodes de prospections géophysiques le long d'un profil de 6 km sur la Crête de la Vecquée. Différentes structures ont pu être mises en évidence, certaines en lien avec la stratigraphie et d'autres avec des structures faillées orientées dans une direction similaire à celles connues pour la ZFH. Ce premier profil d'envergure donne des arguments importants pour la recherche de failles actives en lien avec la ZFH au niveau de la Crête de la Vecquée et leur lien potentiel avec la séquence de séismes de 1989-1990.

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2008

500. Berra, I. (2008). *Sédimentologie, stratigraphie isotopique du strontium et chemostratigraphie à la transition Frasnien-Famennien (Dévonien supérieur) en Amérique du Nord: implications orogéniques dans la crise biologique* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: Le sommet du Frasnien est une époque difficile pour la biodiversité sur la Terre, en particulier pour les organismes d'eaux chaudes et peu profondes. Cette étude vise à établir un lien entre l'activité tectonique et la crise biologique. Trois coupes d'Amérique du Nord, de la marge ouest du palécontinent Laurentia, liées au front orogénique Antler ont été étudiées pour leurs rapports isotopiques $87\text{Sr}/86\text{Sr}$ dans les carbonates. La coupe de Devils Gate dans le centre Nevada (USA) présente au sommet du Frasnien des faciès de turbidites carbonatées de bassin. Trois pics successifs de $87\text{Sr}/86\text{Sr}$ s'observent au sommet du Frasnien, entre le deux niveaux anoxiques Kellwasser. Le dernier pic est le plus élevé, il est contemporain du début du second Kellwasser et présente un rapport isotopique de 0,7094. La coupe de North Antelope Range proche de celle de Devils Gate, présente des dépôts extrêmement homogènes et réguliers de "debris-flow" carbonatés dans un bassin d'avant-pays. Un pic du $87\text{Sr}/86\text{Sr}$ plus modéré y est enregistré. La coupe de Mount Cinquefoil est située dans l'Alberta (Canada), dans un contexte de rampe formant une transition entre un important complexe récifal et un bassin. A nouveau un pic de $87\text{Sr}/86\text{Sr}$ est enregistré au début de l'événement anoxique alors que le reste de la coupe est fort homogène. Un autre pic important du $87\text{Sr}/86\text{Sr}$ est présent dans la partie inférieure de la coupe à la base du premier niveau Kellwasser identifié par l'étude sédimentologique. Les différents pics du $87\text{Sr}/86\text{Sr}$ enregistrés dans la Zone à conodontes linguiformis sur les trois coupes présentent des points communs. D'une part ils occupent la même position par rapport à la courbe de susceptibilité magnétique enregistrée dans les trois coupes, ce qui tend à montrer qu'ils sont contemporains. D'autre part ils sont systématiquement liés à des teneurs plus fortes en éléments (Al, Ti, Si, ...) de la phase détritique dans les roches, ce qui permet d'établir un lien direct entre l'activité tectonique régionale, l'érosion continentale accentuée et les rapports isotopiques élevés du Sr. De plus ces pics du $87\text{Sr}/86\text{Sr}$ semblent liés à la mise en place des périodes d'anoxie des horizons Kellwasser par eutrophisation des eaux. La chemostratigraphie permet de reconnaître des phases bien distinctes de la sédimentologie détritique, en lien avec le contexte tectonique de chaque coupe. Enfin, la comparaison avec d'autres données de la littérature pose la question de la simultanéité des événements à la surface de la Terre.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/210400/1/6c4fe384-b3fd-4d81-b9e0-1809adc0950d.txt>

2003

501. Bruni, R. (2003). *Stratigraphie du crétacé inférieur de la maiella (Abruzzes) et des préalpes (Frioul), Italie* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des sciences, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/211271/1/9fd874-b1c3-46ba-8683-f152b81e9492.txt>

2001

502. Bertrand, M. (2001). *Sédimento - diagenese et paleostructuration du complexe récifal frasnien des montagnes de Sainte-Croix (Pologne)* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des sciences, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209023/3/b55a1567-b6f9-43a2-bcdd-ab230db52482.txt>

<https://dipot.ulb.ac.be/dspace/bitstream/2013/209023/4/d0613652-d8c6-477d-9137-abfbcad4119d.txt>

503. Bertrand, M. (2001). *Sédimento - diagenese et paleostructuration du complexe récifal frasnien des montagnes de Sainte-Croix (Pologne)* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des sciences, Bruxelles.

2000

504. Ezzoubair, F. (2000). *Recherches sur les tabules permien de Timor et sur les affinités biologiques des spongiomorphides du Trias d'Autriche : importance des données microstructurales, géochimiques et biochimiques* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des sciences, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/211806/1/d861dd1c-ff7a-40df-9acd-2eaed31d5d79.txt>

1999

505. Devleeschouwer, X. (1999). *La transition Frasnien-Famennien (Dévonien Supérieur) en Europe : sédimentologie, stratigraphie séquentielle et susceptibilité magnétique* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des sciences, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/211873/1/fe9fa7b7-ffad-40ee-92ad-f50bc916cead.txt>

506. Han, G. (1999). *Paleozoic clay mineral sedimentation and diagenesis in the Dinant and Avesnes basins (Belgium, France) : relationships with variscan tectonism* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des sciences, Bruxelles.

1993

507. Kasimi, R. (1993). *Sédimentologie et cyclostratigraphie des couches de transition eifélien-givetien au bord sud du bassin de Dinant (Belgique, France)* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des sciences, Bruxelles.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/212792/3/61851db5-0144-4207-a673-83ad4f591629.txt>

Participation aux jurys de thèse (5)

2012

508. Nsiala Kimfuta, C. (2012). *Contribution à l'étude géochimique des eaux du bassin versant de la rivière N'Djili à l'est de Kinshasa, République démocratique du Congo* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: La présente étude est une contribution à la connaissance de la géochimie des eaux de la partie inférieure du bassin versant de la rivière N'djili située à l'Est de Kinshasa (République Démocratique du Congo). Les eaux de surface ont été échantillonnées sur six sites de prélèvements au cours de la période allant d'avril 2005 à février 2006, deux sites supplémentaires ont été ajoutés sur le fleuve Congo à partir de 2007. Onze campagnes d'échantillonnages ont permis un suivi annuel (avril 2005 à février 2006), trois autres ont eu lieu de mai à juillet 2007 et vingt-deux autres d'octobre 2008 à octobre 2009. Les paramètres physico-chimiques suivants ont été mesurés : température, pH, conductivité, alcalinité, oxygène dissous. Les dosages des éléments majeurs (anioniques et cationiques) et de certains éléments traces ont été effectués pour étayer cette étude géochimique. Il ressort de cette étude que la température de l'eau prélevée est proche de la température moyenne atmosphérique dans la zone d'étude, ce qui indique un équilibre thermique entre les eaux de surface et l'atmosphère. Dans certains cas, les valeurs de pH mesurées

peuvent être très basses à cause du lessivage des acides organiques provenant de la végétation en décomposition et de la présence d'anhydride carbonique dissous (Burler et Ison, 1966). A la vue des résultats d'analyse des eaux de pluies, nous pouvons remarquer que l'acidité des eaux prélevées de cette partie du bassin versant serait en partie due à la contribution des précipitations. Pour ce qui est de la conductivité, à l'exception du site Matete, les valeurs mesurées sont inférieures à 100 $\mu\text{S}/\text{cm}$, ce qui correspond aux eaux de surface très faiblement minéralisées. Il n'y a pas beaucoup de variation de conductivité entre la saison des pluies, période des hautes eaux, et la saison sèche, période des basses eaux. Ceci nous montre à nouveau qu'il y a une contribution importante des précipitations dans la composition des eaux échantillonnées puisqu'il n'y a pas de grand écart de valeur en l'absence de précipitation. La solubilité de l'oxygène dans l'eau diminue lorsque la température augmente, ce qui induit une diminution de la concentration en oxygène à saturation. Le calcul du taux de saturation dans nos échantillons montre que les eaux sont sous-saturées en oxygène. Ceci peut s'expliquer par le fait que ce bassin versant, du moins dans la zone d'étude, subit des rejets d'eaux usées et des rejets de l'usine de traitement des eaux (REGIDESO). Nous soupçonnons la présence d'une pollution organique induisant la consommation de l'oxygène dissous par respiration. Les teneurs des éléments ne sont pas constantes au cours du temps. Certains sont plus abondants que d'autres (en particulier HCO_3^- , Ca^+ , Na^+ , K^+ , SiO_2 et Cl^-). Il n'y a pas de variations saisonnières importantes des éléments majeurs. L'ordre d'abondance décroissant pour les cations est $\text{Na}^+ > \text{Ca}^{2+} > \text{K}^+ > \text{Mg}^{2+}$ et pour les anions est $\text{HCO}_3^- > \text{Cl}^- > \text{NO}_3^- > \text{SO}_4^{2-}$. La corrélation entre la conductivité électrique et les teneurs en composés chimiques majeurs montre que la conductivité est surtout contrôlée par les bicarbonates, les nitrates, les chlorures, les sulfates, le sodium, le magnésium, le calcium et le potassium. Ces eaux sont particulièrement peu chargées en éléments minéraux dissous, la moyenne des TDS (Total Dissolved Salts) pour chaque site étant largement inférieure à la moyenne mondiale des eaux de rivière, qui est 100 mg/l (Berner et Berner, 1987), tendance également observée pour le calcium (5,7 mg/l pour les rivières africaines et 13,4 mg/l pour la moyenne mondiale). Seul le site de Matete présente une moyenne supérieure à ces valeurs. Pour la silice dissoute, par contre, les concentrations observées sont voisines de la moyenne mondiale (10,4 mg/l). Les valeurs du bilan ionique sont en majorité négatives, c'est-à-dire qu'elles traduisent un excès d'anions. Le calcul du bilan ionique a été effectué pour chaque point de prélèvements, pour les deux dernières séries de campagnes de prélèvements, soit de mai à juillet 2007 et d'octobre 2008 à octobre 2009. Cette étude nous a permis de dégager des groupes au comportement commun qui reflètent des faciès géochimiques différents et dont les plus importants sont les suivants : (1) Le faciès bicarbonaté calcique : il correspond aux eaux provenant des écoulements sur des roches hypersiliceuses (grès, quartzites). Le magnésium est le deuxième cation dominant après le calcium pour le site de prélèvements CFAM (Confluence Fleuve Amont) représentant plus de 20% de la teneur en cations. Et, (2) Le faciès bicarbonaté sodique : il correspond au point de prélèvement Kwambila qui, bien que situé sur une roche hypersiliceuse, présente le sodium comme cation dominant et les nitrates comme anions dominants après les bicarbonates. Ce point de prélèvement est caractérisé par une activité agricole induisant l'utilisation de fertilisants azotés. L'élevage porcin est également pratiqué dans cette région. Ces activités humaines pourraient expliquer la prédominance du sodium et du nitrate dans cette région pour toutes les saisons confondues.


SUMMARY

The present study contributes to a better understanding of the water geochemistry in the N'djili river catchment, East from Kinshasa (Democratic Republic of Congo). Surface waters have been collected at six sampling sites during the period from April 2005 and February 2006. Two additional sampling sites have been added since 2007. Eleven sampling campaigns allowed an annual follow-up (April 2005 to February 2006), three others took place from May to July 2007 and twenty-two additional ones from October 2008 to October 2009. The physico-chemical parameters that have been measured are as follows: temperature, pH, conductivity, alkalinity, dissolved oxygen. The measurement of major elements (anions and cations) and some trace elements has been performed in order to support this geochemical investigation. The temperature of the riverine waters appears to be close to the mean air temperature in the study area, indicating a thermal equilibrium between surface waters and the atmosphere. In some cases, values pH measured can be

very low due to the leaching of organic acids originating from both decomposing vegetation and the presence of dissolved carbon dioxide (Burler and Ison, 1966). Based on the analyses of the rain waters, one can note that the acidity of riverine waters results partially from the atmospheric precipitation. Regarding conductivity, with the exception of Matete area, the values are below 100 $\mu\text{S}/\text{cm}$, which corresponds to weakly mineralized surface waters. Little variation in conductivity was observed between rainy and dry seasons is low, suggesting again an important control of the riverine water composition by the precipitation. Oxygen solubility in the riverine waters decreases with increasing temperature, which results in a decrease of dissolved oxygen content. The calculation of the saturation state in our samples show that the riverine waters are undersaturated with oxygen. This phenomenon can be explained by the fact that the river catchment, at least for the study area, is subjected to untreated and treated sewage effluent releases. One may expect an organic pollution leading to a consumption of dissolved oxygen by respiration. The concentrations of dissolved elements are variable with time. Some are more abundant than others (especially HCO_3^- , Ca^+ , Na^+ , K^+ , SiO_2 and Cl^-). There is no major seasonal variability for the major dissolved elements. The abundance decreases in the orders $\text{Na}^+ > \text{Ca}^{2+} > \text{K}^+ > \text{Mg}^{2+}$ and $\text{HCO}_3^- > \text{Cl}^- > \text{NO}_3^- > \text{SO}_4^{2-}$ for cations and anions, respectively. Correlation between conductivity and major element concentrations show that the former is mainly dictated by bicarbonates, nitrates, chlorides, sulfates, sodium, magnesium, calcium and potassium. These riverine waters are particularly low in dissolved minerals, the mean TDS (Total Dissolved Salts) for each site being largely lower than the global average for rivers (i.e. 100 mg/l, Berner and Berner, 1987). Calcium displays the same trend, with 5.7 mg/l for African rivers in comparison with a global average of 13.4 mg/l. Only Matete area exhibits a mean higher than these values. For dissolved silica, however, the measured contents are close to the global average (i.e. 10.4 mg/l). The values of the ionic balance are negative most of the time, suggesting an excess in anions. The calculation of the charge balance has been realised for each sampling location, during the two last campaigns (i.e. May 2007 - July 2007 and October 2008 - October 2009). This study sheds some light on the groups of elements exhibiting a common behaviour but reflecting different geochemical facies. The most important ones are the following: (1) calcium bicarbonate facies: it corresponds to the water run-off from silicate rocks (sandstone, quartzite). Magnesium is the second dominant cation (after calcium) for the CFAM ("Confluence Fleuve Amont") sampling site, accounting for more than 20% of cation load. And (2) sodium bicarbonate facies: it corresponds to the Kwambila sampling site, where sodium is present as dominant cation and nitrates as dominant anion (after bicarbonates). This sampling site is characterized by agricultural activities entailing the use of nitrogen-rich fertilizers. Pig farming is also practiced in this region. These human activities could therefore explain the predominance of both sodium and nitrate in this area, irrespective of the season.

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[bitstream/2013/209734/1/7e480f7b-82cf-40a7-9dac-6b9a4433e39a.txt](https://dipot.ulb.ac.be/dspace/bitstream/2013/209734/1/7e480f7b-82cf-40a7-9dac-6b9a4433e39a.txt)

 <https://dipot.ulb.ac.be/dspace/bitstream/2013/209734/2/edf54791-27eb-4a2e-b288-1bf09a2c1f23.txt>

 <https://dipot.ulb.ac.be/dspace/bitstream/2013/209734/3/01aeb68-c983-463a-ae35-eba626fe014d.txt>

 <https://dipot.ulb.ac.be/dspace/bitstream/2013/209734/4/c406ca6b-b4c8-45c7-a182-80a3fcb502cf.txt>

 <https://dipot.ulb.ac.be/dspace/bitstream/2013/209734/7/bf8cc88e-504b-4605-a864-8e292b72e3da.txt>

2009

509. Fraser, J. G. (2009). *Four new paleoseismic investigations on the North Anatolian fault, Turkey, in the context of existing data* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: La faille Nord-Anatolienne est une faille décrochante dextre de 1500 km et la frontière de plaque entre l'Anatolie au sud et l'Eurasie au nord. Le mouvement vers l'Ouest de l'Anatolie par rapport à l'Eurasie à une vitesse de 21 mm/an est accommodé par le jeu de cette faille. Durant le 20^{ème} siècle, cette faille a rompu d'est en ouest lors d'une séquence de larges tremblements de terre qui ont eu lieu à intervalles rapprochés. De nombreux géologues ont cherché à mieux comprendre l'histoire récente de cette faille, et plus particulièrement son histoire sismique ou paléosismologique. La recherche en paléosismologie consiste à contraindre en utilisant l'enregistrement sédimentaire existant la nature et la distribution des tremblements de terre passés. Dans cette thèse, j'ai effectué 4 investigations paléosismologiques le long de la faille Nord-Anatolienne dans des lieux où à chaque tremblement de terre la faille forme des escarpements à contre-pente et constitue un piège à sédiment. En étudiant la composition et la distribution des sols enfouis et ex-posés dans de larges tranchées creusées au travers de ces pièges sédimentaires, on peut identifier des « horizons sismiques » (c'est-à-dire la surface terrestre lors du séisme). En datant par le radiocarbone les matériaux déposés au-dessous (avant) et au-dessus (après) d'un horizon sismique, on peut contraindre à quel moment un paléoséisme a eu lieu. Finalement dans cette thèse, j'ai compilé une base de données des chronologies de l'ensemble de paléoséismes documentés sur la faille Nord-Anatolienne. Grâce à cette base de données, j'ai pu déterminer l'occurrence des séismes avec une méthodologie cohérente, et analyser la chronologie obtenue à la fois qualitativement et quantitativement. L'analyse des données révèle que la faille Nord-Anatolienne ne rompt habituellement pas en cascade comme durant le 20^{ème} siècle, et que l'activité de la faille est fortement influencé par les trois principaux régimes tectoniques existant en Turquie. Les variabilités d'activité le long de la faille pourraient résulter de contraintes normales à la faille, qui décroissent d'une façon générale de l'Est vers l'Ouest. Une décroissance des contraintes normales à la faille diminuerait localement le seuil de contrainte requis pour déclencher un séisme. Ceci explique l'observation que le temps de récurrence des séismes est plus court à l'Ouest. A l'Est, les ruptures sont plus variables, et le temps de récurrence est bimodal. Ceci peut être lié à des variations temporelles des contraintes normales à la faille, peut-être induites par le jeu sismique des failles Est-Anatolienne et de la Mer Morte.

<https://dipot.ulb.ac.be/dspace/bitstream/2013/210250/1/54d0f8ea-8408-492a-97abc2f9189f9679.txt>

510. Rebreanu, L. (2009). *Study of the Si biogeochemical cycle in the sediments of the Scheldt continuum, Belgium/The Netherlands* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: Le but général de ce travail fut de quantifier la silice biogène (BSiO₂) dans les sédiments du continuum de l'Escaut (estuaire – zone côtière), ainsi que son taux de recyclage - rétention. Le coefficient de diffusion moléculaire de la DSi a été déterminé pour différentes valeurs de température et deux salinités et une relation empirique reliant le coefficient de diffusion à la température et à la viscosité de la solution a été établie. La distribution longitudinale de la BSiO₂ dans les sédiments de surface, ainsi que les profils verticaux de BSiO₂ et de silice dissoute ont été déterminés durant différentes saisons en 2004 et 2005. Les flux de DSi ont été également estimés via des expériences d'incubations et par modélisation des profils verticaux de DSi. Des expériences de dissolution des sédiments ont permis de déterminer (via modélisation) les constantes cinétiques de vitesse de la BSiO₂ et une première évaluation du taux de recyclage de la BSiO₂ (5 – 70%). Sur base des calculs à partir des profils de DSi dans l'eau interstitielle, le taux de recyclage de la BSiO₂ varie entre 8 et 92% dans l'estuaire, ce qui correspond à une rétention moyenne de la BSiO₂ supérieure à 60%, et souligne ainsi l'efficacité du filtre estuarien par rapport à la silice. En revanche, le recyclage de BSiO₂ dans la zone côtière apparaît comme très intensif, avec des valeurs souvent supérieures à 40%. Ces résultats montrent l'importance d'inclure les estuaires dans le calcul des budgets globaux de Si. / The general objective of this study was to quantify the BSiO₂ in the sediments of the Scheldt continuum, together with its recycling and

retention in this area. First an empirical relation linking the diffusion coefficient of DSI to temperature and salinity was determined, via diffusion experiments. The longitudinal BSiO₂ distribution in surface sediments and the vertical BSiO₂ and DSI profiles in sediment cores were then measured during 2 years and different seasons, together with other parameters characterizing pore waters, such as alkalinity, pH, sulphate... DSI fluxes were also estimated either directly through whole core incubations measurements or via modelling of interstitial water profiles. BSiO₂ dissolution experiments allowed the evaluation of the kinetic rate constants also through modelling of the results, and gave preliminary information over the BSiO₂ recycling rates (5 – 70%). The recycling rate as obtained from pore water profiles vary between 8 and 92%, with an average value of about 32%, which highlights the importance of the estuarine filter for silica. Recycling is much more intense in the coastal area, with values up to 40%, which we explain by higher salinity and higher sediment permeability. The different experiments and results also indicated that secondary mineral precipitation might be an important process affecting BSiO₂ in the Scheldt sediments.<p>

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<https://dipot.ulb.ac.be/dspace/bitstream/2013/210273/2/b0f57aae-8d03-4c2e-b58c-07ef06b2dd74.txt>

2008

511. Rwabuhungu Rwatangabo, D. (2008). *Etude du comportement biogéochimique du carbone dans le lac Kivu au nord-ouest du Rwanda* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: Résumé<p>Le Rift Est-Africain comprend plusieurs grands lacs, dont le lac Kivu situé entre 1°34'<p>et 2°30' de latitude Sud et compris entre 28°50' et 29°23' de longitude Est. Ce lac,<p>localisé au nord-ouest du Rwanda à la frontière avec la République Démocratique du<p>Congo, présente une spécificité unique au monde: ses eaux profondes contiennent<p>une gigantesque quantité de gaz dissous (3/4 de dioxyde de carbone (CO₂), 1/4 de<p>gaz méthane (CH₄)).<p>Les études antérieures indiquent que les eaux du lac Kivu présentent une structure<p>stratifiée particulière qui se décline en 13 couches dans le bassin principal. Nous<p>avons établi une nouvelle stratification, en quatre couches de la colonne d'eau dans<p>ce bassin sur base des données physico-chimiques mais aussi, en tenant compte<p>tout particulièrement du comportement biogéochimique du carbone. Cette structure<p>simplifiée permettra une meilleure évaluation de l'impact environnemental et une<p>gestion durable de l'exploitation du gisement de gaz méthane du lac Kivu.<p>Un suivi détaillé de plusieurs paramètres physico-chimiques, biogéochimiques ainsi<p>que des éléments majeurs, mineurs et en trace, présents dans le bassin principal du<p>lac, dans sa partie rwandaise en un point fixe au large de Kibuye, durant la petite<p>saison sèche, apporte un éclairage plus précis de leur distribution dans la colonne<p>d'eau. Une étude de la variation spatio-temporelle de ces paramètres est réalisée<p>aussi bien à Kibuye qu'à Gisenyi et ce durant les différentes saisons pour, entre<p>autres, servir de base de données nécessaire à toute comparaison ultérieure.<p>L'origine des gaz dissous dans le lac Kivu a fait l'objet de plusieurs études et<p>hypothèses. Les deux principaux gaz dissous du lac ont un élément biogéochimique<p>en commun: le carbone. Par des mesures isotopiques et par comparaison avec le<p>système limnologique du lac Tanganyika voisin, la correspondance de l'allure<p>générale de la distribution comparée du carbone inorganique dissous (DIC), de<p>l'alkalinité totale et du #13CDIC dans les deux lacs indique notamment que les<p>processus à l'origine du gaz méthane du lac Kivu ne sont pas liés au magmatisme, ni<p>à des phénomènes thermocatalytiques. Nous pensons que le carbone, et par<p>conséquent le gaz méthane du lac Kivu, est d'origine phytoplanktonique.<p>L'explication par une étude hydrogéologique et pédologique de l'origine de la<p>stratification pérenne de la colonne d'eau du

lac Kivu constitue un point de vue<p>intéressant. Une autre perspective serait, celle visant à établir par des données<p>biogéochimiques, le taux de régénération du gaz méthane du lac Kivu afin d'en<p>déterminer la durée d'exploitabilité réelle.

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2005

512. Lambert, O. (2005). *Long-snouted dolphins and beaked whales from the Neogene of the Antwerp area: systematics, phylogeny, palaeoecology and palaeobiogeography* = (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences biologiques, Bruxelles.

Abstract: This work is mainly based on the collection of Neogene (Miocene-Pliocene) odontocetes (toothed whales) from the area of Antwerp (northern Belgium, southern margin of the North Sea Basin) preserved at the Institut royal des Sciences naturelles de Belgique (IRSNB). <p> The systematic revision of members of the long-snouted dolphin family Eurhinodelphinidae leads to the description/re-description of five species in the genera Eurhinodelphis (E. cocheteuxi and E. longirostris), Schizodelphis (S. morckhoviensis), and Xiphiacetus n. gen. (X. cristatus and X. bossi). Furthermore, the systematic status of several eurhinodelphinid species from other localities in the world is revised. A cladistic analysis with the parsimony criterion is undertaken to highlight the phylogenetic relationships of several eurhinodelphinid taxa with other fossil and extant odontocetes. Eurhinodelphinids are more closely related to the beaked whales; the latter are distinctly separated from the sperm whales. A second analysis, with a likelihood criterion, reaches nearly identical results. Then a separate parsimony analysis investigates the relationships within the family Eurhinodelphinidae; the results suggest sister-group relationships between Schizodelphis + Xiphiacetus and Ziphiodelphis + (Mycteriacetus + Argyrocetus) and a more stemward position for Eurhinodelphis. After that, anatomical, palaeogeographic, and phylogenetic data allow several suggestions about the ecological features of the eurhinodelphinids. The extinction of this family, before the end of the Miocene, is commented, related to the changes in the biodiversity of other odontocete groups and to a contemporary major sea level drop. <p>

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Président de jurys de thèse (5)

2014

513. Ammar, R. (2014). *Geochemical and isotopic study of urban and rural Watersheds: assessment of water resources and soil pollution in Lebanon* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: Lebanon is situated in a Mediterranean semi-arid region rich in hydraulic resources but strongly under the impact of anthropogenic pressure, mainly after the industrial boost in the last 50 years. In this thesis our research is devoted to the study of water resources and the assessment of soil pollution in two contrasting watersheds that may resemble similar regions in the world. Rivers act as a collective funnel of contaminants derived from rock weathering, industrial, agricultural and urban practices. Thus we focus our study on the two main contrasting watersheds in Lebanon: an industrially dominated watershed located northwest of the country on the Mediterranean coast (Al Jouz basin), and a rural historically agricultural watershed that lies in the continental valley between the two mountainous chains (Litani basin). Geochemical analysis coupled to multi-isotopic applications was used as tools to investigate the collective influence of land-use cover, geomorphological processes, topography, soil type, geology, geography, orography, climate, and hydrological variability on drainage basin evolution. A two-year sampling strategy was followed (2011-2013) to collect not only water samples at various depths in the reservoir and in the piezometers, but also sediments (lacustrine, riverine and coastal) and soils (surficial and cores) to cover seasonal variations (rainy, first flush and dry seasons) in both studied areas. The results highlight the entire mechanism of characterization, origin, and partitioning between the dissolved and particulate phases of pollutants. Furthermore, the environmental implication of the Qaraaoun reservoir was assessed by emphasizing water hydrodynamics and its interaction with the watershed. Characterizing industrial and agricultural pollution allows the understanding of metal behavior and the prediction of its fate, in association with the environmental receiving media in semi-arid and Mediterranean areas. This work was the first to trace pollution sources and to reconstruct the metal fluxes in two of the most environmentally significant watersheds in the country. Stable and radioactive Pb isotopes were used in addition to ¹³⁷Cs to study the geomorphological influence and the chronology of the environmental stress exerted by the factory and the dam on basin ecology. Moreover, the nature of the Qaraaoun reservoir and the internal hydrological dynamics were explored using stable hydrogen and oxygen isotopes to delineate the reservoir water layers and its fast response to meteorological and hydrodynamic changes in the watersheds, and to demonstrate its strong hydrological connectivity with groundwater. Reservoir water balance was made, indicating groundwater influx into the reservoir which was reported for the first time. The water hydrodynamics was also assessed using a box model, which in its role can be used to evaluate the reservoir water balance and hydro-project functionality and to establish the basis for water sustainability in the long term. This work has yielded a better understanding of biogeochemical processes under different environmental conditions. The treated issues in this thesis will provide a foundation for future hydropower projects and allow one to draw a road-map for national management plans, and to raise the alert for remediation processes and management methods to preserve the environment and resource sustainability, and ultimately the wellbeing of the local population.<p><p>

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2013

514. Lauters, P. (2013). *Structure générale et évolution du cerveau chez les dinosaures ornithischiens* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences biologiques, Bruxelles.

Abstract: Parmi les dinosaures, le clade des Ornithopodes est l'un de ceux qui a rencontré le plus de succès. Apparus au Jurassique supérieur, le groupe s'est dispersé et diversifié jusqu'à sa disparition à la fin du Crétacé. Je me suis attachée à étudier le cerveau des Ornithopodes d'Europe et d'Asie, à établir des comparaisons avec les autres archosaures et de nouveaux arbres phylogénétiques incluant des caractères issus de l'endocrâne. Pour ce faire, des moulages et des reconstitutions à partir de données CT-scan ont été réalisées pour étudier la cavité endocrânienne de divers membres de ce groupe. J'ai réalisé des moulages endocrâniens en silicone de 3 taxons et les reconstitutions à partir de données CT-scan de 3 autres taxons de Dinosaures Ornithopodes. Une collection unique d'endocrânes de crocodiles et d'oiseaux récents étend les possibilités de comparaison. Certains endocrânes des taxons fossiles ont confirmé les caractéristiques décrites précédemment dans la littérature, tandis que de nouveaux éléments sont apparus. Les endocrânes n'ont en effet pas seulement livré la morphologie du cerveau, mais aussi des valleculeae, le détail des nerfs crâniens et de la glande pituitaire. J'ai ainsi pu étendre la présence de valleculeae, qui est un indice fort en faveur d'un télencéphale développé, chez un nouvel Hadrosauroidea, alors que cela n'était connu que chez les Hadrosauridae et les membres dérivés de deux autres groupes (Theropoda et Pachycephalosauria). Le cerveau des Ornithopodes dérivés était caractérisé par des hémisphères cérébraux très larges et de forme arrondie. Les flexions crâniale et pontine sont inexistantes, à l'opposé de ce qui est observé chez les Saurischiens. Les pédoncules olfactifs étaient larges. J'ai également fourni de nouveaux exemples de l'influence de la taille de la glande pituitaire sur la taille totale de l'individu. Le cerveau des Ornithopodes a subi des changements au cours de leur évolution : le plus marquant est l'augmentation du volume des hémisphères cérébraux par rapport au reste du cerveau. J'émetts l'hypothèse que cette augmentation résulte de la complexification des comportements chez les Ornithopodes. Une nouvelle phylogénie a été établie, bénéficiant de l'apport de nouveaux caractères basés sur l'endocrâne. Elle apporte des éléments de réflexion intéressants quant à la position de plusieurs taxons d'Iguanodontia basaux. La résolution est cependant faible et d'autres études devront être menées dans le futur. Les relations de parenté ne sont pas stables et de faibles changements entraînent des différences notables dans les résultats des analyses phylogénétiques. Among the Dinosauria, Ornithopoda were one of the most successful clade. Since the Late Jurassic, they spread and diversified until the end of the Cretaceous. I studied the brain of Ornithopoda from Europe and Asia, established comparisons with other archosaurs and new phylogenetic analyses including endocranial characters. In order to do this, I made silicone endocasts of 3 taxa and virtual reconstructions from CT-scan dataset of 3 other taxa of ornithopod dinosaurs. A collection of extant crocodiles and birds allows more points of comparison. Some endocasts made on the fossil specimens confirmed previously described characteristics, while new ones were brought to our attention. The endocasts opened up not only the morphology of the brain, but also the anatomy of the cranial nerves, the pituitary gland and the presence of valleculeae. This last element, evidence of a developed telencephalon, has been established in a new Hadrosauroidea species as his oldest occurrence. The brain of more derived Ornithopods was characterized by very large cerebral hemispheres. The pontine and cranial flexures disappeared, to the contrary to what is observed in Saurischians. The olfactory peduncles were large. New evidences about the correlation between the size of the pituitary gland and the size of the individual. The Ornithopod's brain changed throughout their evolution : the most striking is the increase of the cerebral hemispheres. The complexity of behaviors exhibited by Ornithopods is suggested as the trigger of the increase of the size of the cerebral hemispheres. A new phylogenetic analysis was established, including new characters from the endocranial cavity.

It brings interesting perspectives about the position of several basal Iguanodontia. Unfortunately the resolution is weak and new studies will be needed. The relationships are not stable and small changes lead to instabilities in the result of the phylogenetic analysis.

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2010

515. Taillez, A. (2010). *Géochimie isotopique du Pb-Cu-Zn particuliers en système fluvio-estuarien anthropisé: Bassins de l'Escaut et de la Seine* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des sciences, Bruxelles.

Abstract: Le potentiel d'utilisation des isotopes du Pb-Cu-Zn en sciences environnementales a été évalué, dans le cadre des systèmes fluvio-estuariens de l'Escaut et de la Seine. Ces deux environnements voisins, et pourtant contrastés, comptent parmi les plus contaminés en éléments traces métalliques (ETM) à l'échelle de l'Europe du N-O comparativement à des bassins de tailles analogues. Ils constituent ainsi un cadre d'étude privilégié pour parfaire la compréhension d'un outil classique et puissant de géochimie isotopique tels que les isotopes du plomb, très peu étudiés dans ce type d'environnements, et initier celle d'outils émergents tels que les isotopes du cuivre et du zinc. La présente étude offre la première base de données jamais produite, caractérisant isotopiquement les apports fluviaux particuliers (matières en suspension -MES-) en Pb, Cu et Zn des principaux sous-bassins de l'Escaut et de la Seine. Les moyennes et variabilités associées définies ($^{206}\text{Pb}/^{207}\text{Pb} = 1,15993 \pm 0,00184$ -2sd- et $1,15697 \pm 0,00663$; $^{208}\text{Pb}/^{207}\text{Pb} = 2,43737 \pm 0,00162$ et $2,43691 \pm 0,00618$; $d^{66}\text{Zn} = +0,223 \pm 0,031$ et $+0,082 \pm 0,046$; $d^{65}\text{Cu} = +0,021 \pm 0,055$ et $-0,051 \pm 0,086$; pour l'Escaut et la Seine, respectivement) constituent un élément de comparaison fiable pour les études environnementales à venir. Les bilans massiques calculés à l'interface fleuve – estuaire, comparant la somme des apports en Pb-Cu-Zn allochtones à l'entrée de l'estuaire salin de l'Escaut (station Hemiksem) avec les observations de terrains obtenues pour cette station, ont été couplés à des bilans massiques en carbone organique particulière et à des

bilans isotopiques (i.e. définition des signatures isotopiques par calcul de bilan). Les résultats ont fourni un argument solide en faveur de la qualité « traceurs de sources » des systèmes isotopiques du Pb-Cu-Zn en domaine fluvio-estuarien. Les résultats obtenus, dans les estuaires de l'Escaut et de la Seine, ont permis de confirmer le rôle majeur de l'hydrodynamique (i.e. un mélange binaire entre les eaux marines et fluviales) sur le contrôle des variations de compositions isotopiques en Pb-Cu-Zn enregistrées sur les matériaux sédimentaires. Les données Cu-Zn suggèrent que les processus de fractionnement (a)biotique naturels n'affectent pas significativement les compositions isotopiques en Cu et Zn des MES durant leur transit le long des zones réactives estuariennes. Pour déterminer l'origine des apports d'ETM, plusieurs composantes de sources en Pb-Cu-Zn ont pu être proposées. Les composantes « naturelles », « domestique-urbaines », « industries métallurgiques », « émission de charbons » ont ainsi été identifiées d'après les systèmes isotopiques Pb-Cu-Zn. Une composante additionnelle « pratiques agricoles » (i.e. amendements, pesticides) est supposée d'après les résultats isotopiques Pb-Cu. La pollution en ETM d'origine domestique et urbaine, qui caractérise particulièrement le sous-bassin de la Senne, apparaît majeure pour chacun des trois éléments considérés et pour chacun des bassins fluvio-estuariens. Par ailleurs, les systèmes isotopiques couplés du Pb et du Zn mettent en évidence la contribution accrue des émissions liées à l'utilisation des charbons (principalement d'origine domestique) durant les périodes hivernales. La suppression de la source « Pb essence », anciennement très majoritaire sur l'échiquier environnemental, s'est traduite par la valorisation au premier plan des multiples sources de pollution en Pb initialement secondaires, telles que les émissions des industries métallurgiques et charbonneuses, et potentiellement les émissions diffuses liées aux pratiques agricoles. Ce changement récent et majeur pour le cycle environnemental de Pb confère aux isotopes de Pb un intérêt sans précédent en tant que support comparatif pour les systèmes isotopiques de Cu et Zn, notamment. Finalement, la présente étude illustre, dans le cadre d'environnements géochimiques complexes, le potentiel du système isotopique du Pb en tant que puissant traceur de sources, et révèle celui des systèmes du cuivre et du zinc.

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https://dipot.ulb.ac.be/dspace/bitstream/2013/241303/5/licence-DI-these-v2.1_FR_ATaillezTDMInternet.pdf

2009

516. Harlay, J. (2009). *Biogeochemical study of coccolithophorid blooms in the context of climate change* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: Coccolithophores are unicellular microscopic algae (Haptophyta) surrounded by calcium carbonate plates that are produced during their life cycle. These species, whose contemporary contributor is *Emiliania huxleyi*, are mainly found in the sub-polar and temperate oceans, where they produce huge blooms visible from space. Coccolithophores are sensitive to ocean acidification that results from the ongoing accumulation of anthropogenic carbon dioxide (CO₂) in the atmosphere. The response of these organisms to global change appears to be related to the reduction of their ability to produce calcium carbonate at the cellular level. At the community levels, one anticipates changes in the carbon fluxes associated to their blooms as calcification is reduced. However, the consequences of such environmental changes on this species are speculative and require improvements in the description of the mechanisms controlling the organic and inorganic carbon production and export. The first aspect of this work was to study the response of these organisms to artificially modified CO₂ concentrations representative of the conditions occurring in the past (glacial) and those expected by the end of the century (2100). Two different levels were examined: the continuous monospecific cultures (chemostats) allowed us to work at the cellular level while the mesocosms gave light to the mechanisms taking place in an isolated fraction of the natural community. The second aspect of this work consisted of field studies carried out during four

cruises (2002, 2003, 2004 and 2006) in the northern Bay of Biscay, where the occurrence of *E. huxleyi* blooms were observed in late spring and early summer. We describe the vertical profiles of biogeochemical variables (nutrients, chlorophyll-a, dissolved inorganic chemistry, particulate carbon, transparent exopolymer particles (TEP)) and study processes such as primary production, calcification and bacterial production. The properties of these blooms are compared with those reported in the literature and enriched with original measurements such as the abundance and concentration of TEP that could play an important role in carbon export to the deep ocean, modifying the properties of the settling ballasted aggregates.<p>

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2006

517. Brassinnes, S. (2006). *Relations cumulat-liquide dans les massifs alcalins et carbonatitiques: les cas des massifs de Vuoriyarvi (Péninsule de Kola, Russie) et de Tajno (N.E. Pologne)* (Thèse doctorale non-publiée) Université libre de Bruxelles, Faculté des Sciences – Sciences de la Terre et de l'Environnement, Bruxelles.

Abstract: Les carbonatites sont des roches magmatiques essentiellement composées de carbonates (calcite et/ou dolomite) d'origine magmatique. Leur statut pétrographique en tant que liquide magmatique ou cumulat reste à l'heure actuelle fort controversé. Cette thèse de doctorat à pour objectif une étude pétrographique fine de ces roches couplée à des microanalyses in-situ des éléments en trace des principaux minéraux (carbonate, apatite).

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