



Het bestuur van de WTKG nodigt u uit voor de Wintervergadering

Zaterdag 27 januari 2018
Natuurmuseum Brabant, Tilburg

Programma

10:30 – 11:00 Ontvangst met koffie en thee (museumcafé)

11:00 – 12:00 Lezing door **Han Raven** (*Naturalis, Leiden*)

Mollusken van Borneo en hun stratigrafische betekenis.

12.00-12.30 Bijdragen van leden

12:30 – 13:30 Pauze (lunch verkrijgbaar in museumcafé)

13:30 - 14:15 Lezing door **Klaas Post** (*Natuurhistorisch Museum Rotterdam*)

De Westerschelde levert de laatste jaren fossielen van tenminste 5 walvisachtigen die nieuw zijn voor de wetenschap! Ontdekken we een nu toe onbekende fauna van grote vertebraten die ca. 8,1-7,5 Ma onze kusten onveilig maakte?

Expedities van het NMR in 2014 en 2015 vonden een site in de Westerschelde waar mariene vertebraten in min of meer anatomisch verband in grote brokken sediment bewaard gebleven zijn. De eerste specimina zijn inmiddels geprepareerd en beschreven. De uitmuntend bewaard gebleven fossielen tonen ongekend veel details en vrijwel alle taxa blijken nieuw voor de wetenschap. Een dergelijk aantal nieuwe soorten op een kluitje geeft te denken. Werd dit sediment (en haar fossielen) niet eerder in Nederland, België of de wereld aangetroffen? Palynologisch onderzoek concludeert een ouderdom van 8.1-7.5 Ma. voor vrijwel alle fossielen. De spreker laat bovengenoemde fauna in detail de revue passeren, legt mogelijke verbanden met recente vondsten uit België en gaat – heel kort – nog even in op het verband tussen radioactiviteit en Westerschelde.

14:30 – 15:15 Lezing door **Bernard Landau** (*Instituto Dom Luiz da Universidade de Lisboa and Naturalis*)

Paciphilic faunal units in the Neogene Caribbean, reproductive mode and the sink-source hypothesis as a possible explanation.

A key fact in the history of Neogene Caribbean marine molluscs is the disappearance of the “paciphile” taxa that occurred throughout Tropical America during the Miocene and the Pliocene, but subsequently suffered a range contraction, and became largely or entirely restricted to the eastern Pacific portion of their original distribution. What forces led to the disappearance of these paciphile taxa in the Atlantic portion of their original distribution is at present unclear, as there seem to be no obvious common environmental factor or ecological requirements uniting this paciphilic assemblage of taxa. Landau *et al.* (2009) suggested that the emergence of the isthmus during the Late Pliocene cut off the source populations of planktonically dispersing molluscs dependent on Pacific source

populations. The sink populations thus became stranded on the Atlantic coast of South America and elsewhere in the Caribbean, where they became unsustainable and eventually disappeared. A reappraisal of all known paciphile species indicates an inferred planktotrophic-type development, which supports this hypothesis. Two pulses of extinction or local disappearance from the Atlantic portion of their original distribution have been identified.

15:30 - 16:00 Korte bijdragen van leden en gelegenheid voor onderling contact en determinatie.

16:00 Sluiting

Bereikbaarheid

Het museum ligt tegenover het Centraal Station Tilburg.

Rond het museum geldt betaald parkeren (parkeergarage Knegtel ligt nabij). Goedkoop parkeren kan op een van de transferiums.

Voor nadere details over de bereikbaarheid en parkeermogelijkheden wordt verwezen naar de website van het museum: <http://www.natuurmuseumbrabant.nl/>

BERNARD LANDAU

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Based on data from the Pliocene gastropod assemblage of Cubagua Island, Venezuela (Landau & Silva, 2010) the palaeobiogeography of the southern Caribbean was reviewed (Landau et al, 2008). The data obtained from the southern Caribbean assemblages demonstrates a highly endemic fauna along the northern coasts of South America, distinct to that found in the neighbouring Isthmian region to the west, which has probably been in place since at least the early Neogene. These assemblages are characterised by a relative stability at generic level, but an extremely high turnover rate a specific level. The name Colombian-Venezuelan-Trinidad Subprovince was chosen over Puntagavilanian Subprovince.

A key fact in the history of Neogene Caribbean marine molluscs is the disappearance of the “paciphile” taxa that occurred throughout Tropical America during the Miocene and the Pliocene, but subsequently suffered a range contraction, and became largely or entirely restricted to the eastern Pacific portion of their original distribution. What forces led to the disappearance of these paciphile taxa in the Atlantic portion of their original distribution is at present unclear, as there seem to be no obvious common environmental factor or ecological requirements uniting this paciphilic assemblage of taxa. Landau *et al.* (2009) suggested that the emergence of the isthmus during the Late Pliocene cut off the source populations of planktonically dispersing molluscs dependent on Pacific source populations. The sink populations thus became stranded on the Atlantic coast of South America and elsewhere in the Caribbean, where they became unsustainable and eventually disappeared. A reappraisal of all known paciphile species indicates an inferred planktotrophic-type development, which supports this hypothesis.

Paciphiles did not disappear simultaneously, but seem to have suffered a steep decline during the Late Pliocene. A revision of all known paciphile supra-specific groups allowed us to recognise three Neogene Gatunian Molluscan Paciphile Units (NGMPU). NGMPU 1 is characterized by the highest number of paciphile taxa. This unit is already in place in the Early Miocene and ends at the beginning of the Late Pliocene. NGMPU 2 is characterized by an impoverished number of paciphilic elements, devoid of the two largest paciphilic groups; the cancellarids and the buccinids. This unit straddled the Pliocene-Pleistocene boundary and ends during the Early Pleistocene. NGMPU 3 is characterized by the absence of any paciphilic elements in their assemblages, and runs into Recent times.

Based on these paciphile taxa, for the Gatunian Province, two pulses of extinction or local disappearance from the Atlantic portion of their original distribution can be identified. The first marked by the overall decrease in Atlantic paciphile diversity and the total disappearance of all the paciphilic cancellarids and muricids, roughly corresponding with the timing given for the closure of the CAS by Coates & Obando (1996). The second marked by the complete disappearance of all

paciphiles from the Atlantic roughly coincides with the total closure of all connections between the Atlantic and Pacific as suggested by Beu (2001).

Beu, A.G. 2001. Gradual Miocene to Pleistocene Uplift of the Central American Isthmus: Evidence from Tropical American Tonnoidean Gastropods. *Journal of Paleontology* **75(3)**: 706-720.

Coates, A.G. & Obando, J.A. 1996. The geologic evolution of the Central American Isthmus *in* Jackson, J. B. C., Budd, A. F. and Coates, A. G. eds. *Evolution and Environment in Tropical America*. The University of Chicago Press, Chicago, 21-56.

Landau B. M. & Silva, C. M. da 2010. Early Pliocene gastropods of Cubagua, Venezuela: taxonomy, palaeobiogeography and ecostratigraphy. *Palaeontos* **19**: 1-221.

Landau B. M., Vermeij, G. & Silva, C. M. 2008. Southern Caribbean Neogene palaeobiogeography revisited. New data from the Pliocene of Cubagua, Venezuela. *Palaeogeography, Palaeoclimatology, Palaeoecology* **257**: 445-461.

Landau B. M., Vermeij, G. & Silva, C. M. 2009. Pacific elements in the Caribbean Neogene gastropod fauna: the source-sink model, larval development, disappearance, and faunal units. *Bulletin de la Société géologique de France* **180(4)**: 249-258.