

Interactive comment on “Middle Miocene climate of southwestern Anatolia from multiple botanical proxies” by Johannes M. Bouchal et al.

L.M. Dupont (Referee)

dupont@uni-bremen.de

Received and published: 15 August 2018

GENERAL

Bouchal et al. present a paleobotanic study from middle Miocene Anatolia using different approaches to reconstruct climate changes from existing data of the middle Miocene climate transition, ca. 15-13 Ma. The beauty of the study lies in the combination of three different reconstruction techniques, each with different underlying assumptions. The authors combine the results of two taxonomical approaches - one relying on the nearest-living-relative principle and the other on biogeography of floras - with leaf physiognomy, which does not rely on taxonomy. The authors conclude that the climate of middle Miocene Anatolia could not have been tropical but would have been

[Printer-friendly version](#)

[Discussion paper](#)



fully humid warm temperate. This result is important in the discussion about global latitudinal temperature gradients. The study also reveals increase of herbal vegetation in the mainly forested landscape of Anatolia during the global cooling after the mid-Miocene climate optimum. Moreover, the results of the study concerning vegetation structure are important in the discussion about the landscape of Anatolia in relation with fossil faunas. Thus, the paper presents an elegant study with interesting results for a wide research spectrum. I would like, however, to give some suggestions that may help reaching that broader audience.

Primarily, the paper needs clear conclusions, which now are missing. I strongly urge the authors to provide them in a separate section.

Secondly, the explanation of the Köppen signatures unfortunately hides in the supplementary information. I suggest fitting S2 into a table in the main text. Please, also summarize CLAMP protocols and leaf characteristics (lobbing and tooth form, leaf size, apex form, base form, length-to-width ratio and shape) instead of referring to the website, only.

SPECIFIC COMMENTS

I suggest plotting the CLAMP results of Tinaz and Eskihisar together in Figure 6. (The separate scores can be found in the supplementary material.)

Please explain explicitly what you mean with the question marks to ‘marginal???’ (line 194) and ‘increased summer rainfall???’ (line 363).

Interactive comment on Clim. Past Discuss., <https://doi.org/10.5194/cp-2018-76>, 2018.

Printer-friendly version

Discussion paper

