

Response to comments by Prof. P.A. Meyers

Juzhi Hou, Mingda Wang, Wenjing Zhang

We appreciate the constructive comments raised by the Prof. Meyers on May 14, 2015.

Question 1: “Sadly, their "conclusions" are inconclusive. Although a considerable battery of environmental information is available to the authors, they do not seem to make full use of it. The unfortunate consequence is that they fail to resolve this problematic organic geochemical issue, despite their impressive collection and comparison of new and old data. ”

We will try to incorporate the available environmental information in the discussion and obtain a more conclusive conclusion in the text.

Question 2: “... it needs to include the 2015 Bush and McInerney paper that compares plant wax compositions of plants from a north-south transect of North America (Organic Geochemistry 79:65-73). This important paper provides additional *n*-alkane data and growth condition information that Wang and colleagues can incorporate in their chain length compilation, and it also addresses the temperature - humidity question. ”

In the revision, we will include the data presented by Bush and McInerney 2015, Organic Geochemistry paper and discuss more on the influences of environmental and climate on ACL.

Question 3: “... the contribution must make better use of the environmental information that is available to the authors to move closer to resolving this paleoenvironmental question. As one example, although woody and nonwoody plants typically dominate different ecotomes, their leaf waxes may respond to temperature and moisture in similar ways. Hence, the important comparison may not be woody vs nonwoody, but of locations of the plants, whether they are woody or not.”

This will significantly improve the quality of the paper. We will incorporate the environmental information and analyze the response of ACL to the temperature and precipitation.