Reply to Sauther and Cuzzo 2012

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Referring to long-term studies of living lemurs, Sauther and Cuzzo (2012) advanced doubts concerning our interpretation of a serious injury and its consequences for “Ida” (*Darwinius masillae*)—the famous fossil primate from the early middle Eocene of Grube Messel (Germany) (Franzen et al. 2011, 2012). We appreciate the intense efforts and the immense value of field studies for the interpretation of the palaeobiology of fossils, but we have objections concerning the comparisons and conclusions of Sauther and Cuzzo (2012).

1. From Sauther and Cuzzo’s presentations it is not clear whether the injuries they observed in living lemurs were really as serious as the trauma “Ida” was suffering. It is the question as to whether Sauther and Cuzzo’s *Lemur catta* (Lemur # 115) was seriously injured at all. Sauther and Cuzzo’s remark (2012: 580) “the wrist was swollen with the carpal bones calcified to the point that crepitus was evident when the wrist was moved” does not point to an injury comparable to that of “Ida”. Also, the abscess of that *Lemur* (Sauther and Cuzzo 2012: 582, fig. 8a) looks rather harmless.
2. The “dramatic injuries” that Sauther and Cuzzo mentioned and figured of other individuals (2012: 580–581, fig. 7) are rather simple fractures that were observed after healing. They show nothing of a crippling or a seriously injured articulation, and they do not refer to a

juvenile individual such as “Ida” (*Darwinius masillae*), who was a very young female only 10 months old (Smith in Franzen et al. 2009).

3. We did not claim that “Ida’s” injury was “a direct factor in her death” (Sauther and Cuzzo 2012: 581). On the contrary, “Ida’s” crippled hand led to exposing her to poisonous gases. In our opinion, these gases and not her fall or injury caused “Ida’s” death.

Summarising, Sauther and Cuzzo’s observations of the climbing capabilities of injured living lemurs are limited, because the individuals were only occasionally observed, and radiographs proving the alleged seriousness of their injuries are missing. Therefore, applying Sauther and Cuzzo’s data to “Ida’s” case appears for us not to be useful. Also, contrary to our hypothesis, Sauther and Cuzzo’s explanation of “Ida’s” death as due to an infected abscess would not explain how her body got into Eocene Lake Messel.

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