Synonymy and actual affinities of the putative Middle Eocene “New World vulture” Eocathartes LAMBRECHT, 1935 and “hornbill” Geiseloceros LAMBRECHT, 1935 (Aves, Ameghinornithidae)

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with 2 figures and 1 table
Tab 1. Length measurements (maximum length in mm) of major limb elements of different species of *Strigogyps* in comparison; measurements of *Strigogyps robustus* after LAMBRECHT (1935) in brackets.

<table>
<thead>
<tr>
<th></th>
<th>humerus</th>
<th>ulna</th>
<th>carpometacarpus</th>
<th>tibiotarsus</th>
<th>tarsometatarsus</th>
</tr>
</thead>
<tbody>
<tr>
<td><em>Strigogyps sapea</em> (holotype)</td>
<td>~87</td>
<td>~75</td>
<td>~38</td>
<td>~150</td>
<td>~83</td>
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<tr>
<td><em>Strigogyps sp.</em> (SMF-ME 11094)</td>
<td>71.8</td>
<td>56.6</td>
<td>37.7</td>
<td>—</td>
<td>—</td>
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<tr>
<td><em>Strigogyps dubius</em> (holotype of “<em>Ameghinornis minor</em>”)</td>
<td>120.3³</td>
<td>—</td>
<td>—</td>
<td>—</td>
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</tr>
</tbody>
</table>

¹ LAMBRECHT (1935: 363)  
² LAMBRECHT (1935: 365)  
³ after MOURER-CHAUVRÉ (1981)

which reason BRODKORB (1971) classified the fossil into the Bucerotidae.

It was first assumed by P. Houde (in OLSON 1985: 136) that the remains of *Eocathartes robustus* and *Geiseloceros robustus* are from a single individual, and OLSON (1985) questioned their correct identification. Because of similar proportions of the wing bones, I tentatively assigned *Geiseloceros robustus* to the Idiorhithidae in an earlier revision of part of the avian material from the Geisel Valley (MAYR 2002, see also MAYR 2005a). Idiornithids are extinct representatives of the Cariamae, the clade including extant Cariamidae (serie-mas). These birds have a more elongate and proportionally longer tarsometatarsus than *Eocathartes robustus*, and I thus regarded the phylogenetic affinities of the latter uncertain (MAYR 2002).

However, here I present evidence that the two partial skeletons assigned to *Eocathartes* and *Geiseloceros* are indeed from a single individual, which does not belong to the Idiorhithidae. Instead, except for its larger size (Tab. 1), it perfectly matches *Strigogyps* (“*Aenigmavis*”) *sapea* (PETERS, 1987) from the Middle Eocene German fossil site Messel. *S. sapea* has originally been considered an Old World representative of the Phorusrhacidae, a further taxon of the Cariamae (PETERS 1987), but this classification has meanwhile been disproved (ALVARENGA & HÖFLING 2003; MAYR 2005b). The Geisel Valley specimens provide new information on the poorly known osteology of *Strigogyps*, and further corroborate the great similarity between the avifauna of the Geisel Valley and the more comprehensive and better studied one of Messel (MAYR 2002).

Material and methods

Osteological terminology follows BAUMEL & WITMER (1993), measurements are in millimeters.

Institutional abbreviations: GMH – Geiseltalmuseum Halle, Halle/Saale, Germany; SMF – Forschungsinstitut Senckenberg, Frankfurt am Main, Germany.

Systematic paleontology

**Aves Linnaeus, 1758**  
Ameghinornithidae MOURER-CHAUVRÉ, 1981

*Strigogyps Gaillard, 1908*

1935 *Eocathartes* LAMBRECHT: 362, pl. 1.  
1935 *Geiseloceros* LAMBRECHT: 365, pl. 2.  
1983 *Ameghinornis* MOURER-CHAUVRÉ: 127, pl. 5.  
1987 *Aenigmavis* PETERS: 72, figs. 1--11.  
2007 *Ameghinornis* PETERS: 25.  
2007 *Aenigmavis* PETERS: 25, figs. 1, 2.

*Strigogyps robustus* (LAMBRECHT, 1935) n. comb.

* 1935 *Geiseloceros robustus* LAMBRECHT: 362, pl. 1.  
1935 *Eocathartes robustus* LAMBRECHT: 365, pl. 2.  

Holotype: GMH 5884 (holotype of “*Geiseloceros robustus*”, Fig. 1A)  
Referred specimen: GMH 5883 (holotype of “*Eocathartes robustus*”, Fig. 1B); although I consider this specimen to be from the same individual as the holotype GMH 5884, it is listed as a “referred specimen” to avoid future taxonomic confusion.

Type locality and horizon: “Grube Cecilie” open-cast brown coal pit of the Geisel Valley (Geiseltal) near Halle, Sachsen-Anhalt, Germany; Middle Eocene (MP 13, i.e., about 44 ma; MLIKOVSKÝ & HESSE 1996; LEGENDRE & LEVÊQUE 1997).

Description and comparison: The right coracoid is visible in ventral view, of the left one only the extremitas sternalis is preserved (Fig. 2D). In its proportions the bone resembles the coracoid of a specimen of *Strigo-gyps* sp. from Messel (SMF-ME 11094; compare Figs. 2A and 2D). It is much stouter than the corresponding bone of the Idiornithidae, Phorusrhacidae, and Cariami-dae, and more closely matches the coracoid of the Cathartidae in proportions. The large extremitas omalis measures more than one third of the entire length of the bone. The processus lateralis is well developed, whereas this process is very short in the Phorusrhacidae and Car-ami-dae (no complete coracoid of the Idiornithidae has been figured by MOURER-CHAUVRÉ 1983 who, how-