

“Old World phorusrhacids” (Aves, Phorusrhacidae): a new look at *Strigogyps* (“*Aenigmavis*”) *sapea* (Peters 1987)

GERALD MAYR

Forschungsinstitut Senckenberg, Sektion Ornithologie, Senckenberganlage 25, D-60325 Frankfurt am Main, Germany;
Gerald.Mayr@senckenberg.de

The discovery of phorusrhacid-like birds (Aves, Phorusrhacidae) in early Tertiary deposits of France and Germany has been of great paleobiogeographic interest, as these flightless birds were previously known only from the New World. In this study, the species from Messel in Germany (“*Aenigmavis*”) *sapea* Peters 1987) is reevaluated and its taxonomy revised. It is shown that *Aenigmavis* Peters 1987 and *Ameghinornis* Mourer-Chauviré 1981, the other European taxon, are junior synonyms of *Strigogyps* Gaillard 1908. *Strigogyps* (“*Ameghinornis*”) *minor* Gaillard 1939 is considered a junior synonym of *Strigogyps dubius* Gaillard 1908. A newly identified, well-preserved wing of *Strigogyps* is described and it is shown that this taxon lacks several derived characters that characterize the Phorusrhacidae, including a dorso-ventrally deep mandible, a strut-like coracoid, an extremely reduced wing, a block-like hypotarsus, and a reduced hindtoe.

INTRODUCTION

Phorusrhacids or “terror birds” (Aves, Phorusrhacidae) are extinct flightless relatives of the South American seriemas (Cariamidae) that underwent a major radiation in the Tertiary of South America and are assumed to have been carnivorous predators (e.g., Andrews 1899, Sinclair and Farr 1932, Alvarenga and Höfling 2003). Phorusrhacid-like birds also were reported from the early Tertiary of France (Mourer-Chauviré 1981) and Germany (Peters 1987). The French species, “*Ameghinornis minor*” (Gaillard 1939), is known from a humerus, two coracoids, and two carpometacarpi from the Quercy fissure fillings. These bones were not found in association but, because of their strikingly phorusrhacid-like morphology, they were considered to be from the same species by Mourer-Chauviré (1981, 1983). The holotypic humerus of “*A. minor*” was originally described by Gaillard (1939) as *Strigogyps minor*, who (Gaillard 1908) had earlier described a distal tibiotarsus from the Eocene locality Escamps in the Quercy region as *Strigogyps dubius*, the only other species of the genus *Strigogyps*. The original description of the German species, “*Aenigmavis*”) *sapea* Peters 1987, is based on a postcranial skeleton (Fig. 1) and a referred foot. Although the wing bones are very poorly preserved in this specimen, Peters (1987) correctly noticed its close relationship to the French phorusrhacid-like taxon.

Being considered birds with weak flight capabilities, or even completely flightless, the European phorusrhacid-like birds subsequently played a central role in discussions on a late Cretaceous/early Tertiary land connection between Europe and South America, either via Africa or North America (Mourer-Chauviré 1981, 1982, 1999, Buffetaut and Rage 1982, Storch and Schaarschmidt 1988, Peters 1991, Peters and Storch 1993, Rage 1999). Recently, however, Alvarenga and Höfling (2003) doubted phorusrhacid affinities of *Ameghinornis* and *Aenigmavis*, and noted that the hypotarsus of *Aenigmavis* “differs substantially from that

of the Phorusrhacidae” and that “the proportions of the *Aenigmavis* skeleton are different from those observed in the Phorusrhacidae (...), thus excluding running habits for *Aenigmavis*” (Alvarenga and Höfling 2003: 63).

Here, I present new evidence that “*Aenigmavis*”) *sapea* is not a member of the Phorusrhacidae and show that *Aenigmavis* and *Ameghinornis* are junior synonyms of *Strigogyps*, with which the Messel taxon has not yet been compared.

MATERIAL AND METHODS

The fossil specimens are deposited in the collection of Forschungsinstitut Senckenberg, Frankfurt am Main, Germany (SMF); osteological terminology follows Baumel and Witmer (1993).

SYSTEMATIC PALEONTOLOGY

AVES Linnaeus 1758

AMEGHINORNITHIDAE Mourer-Chauviré 1981, new rank
Strigogyps Gaillard 1908

Ameghinornis Mourer-Chauviré 1981:638–643, pl. 1, figs. 1 and 2

Aenigmavis Peters 1987:71–77, figs. 1–12

Strigogyps sapea (Peters 1987)

Aenigmavis sapea Peters 1987:71–77, figs. 1–12

COMPARATIVE OSTEOLOGY OF *STRIGOGYPS*

The holotype of *Strigogyps sapea* (SMF-ME 1818, formerly coll. Maschwitz; Fig. 1) has been described in detail by Peters (1987), and the following mentions mainly those features that support the synonymy of *Aenigmavis* Peters 1987 and *Strigogyps* Gaillard 1908.

Only a small fragment of the caudal part of the skull of *Strigogyps sapea* is preserved in the holotype, including the quadrate and what I consider to be the caudal part of the mandible (Fig. 2). Peters (1987) identified the latter bone as

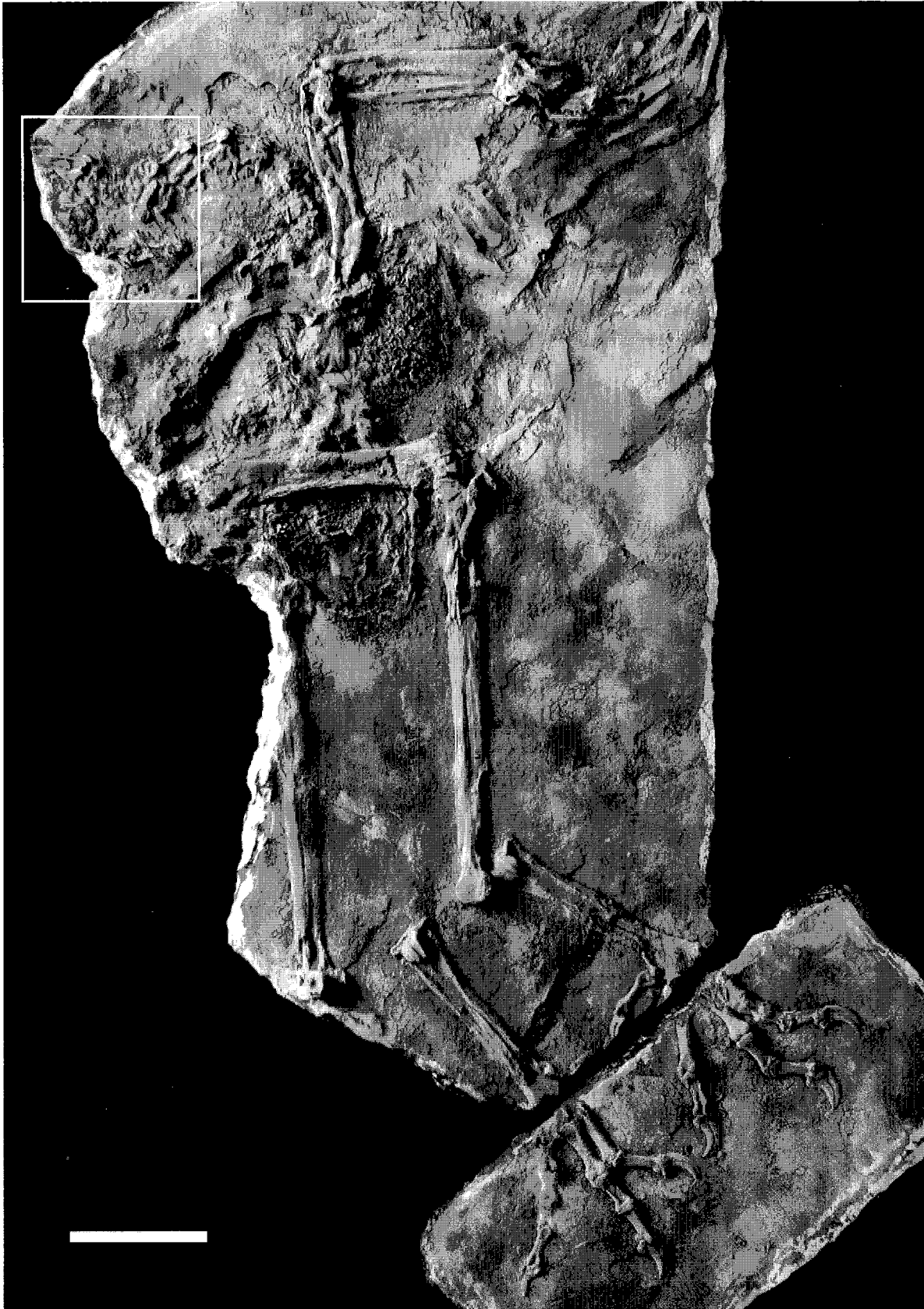


Fig. 1. *Strigogyps sapea* (Peters 1987), holotype (SMF-ME 1818). The frame indicates the position of the detail seen in Fig. 2. Specimen coated with ammonium chloride. Scale bar equals 50 mm.

