

# A new jacana (Aves: Jacanidae) from the Early Miocene of the Czech Republic

*Une nouvelle espèce de jacana (Aves: Jacanidae) du Miocène inférieur de la République tchèque*

Jiří Mlíkovský\*

Institute of Geology and Palaeontology, Charles University, Albertov 6, CZ-128 43 Praha 2, Czech Republic

(Received 21 September 1998, accepted after revision 25 November 1998)

**Abstract**—A new species of jacana, *Nupharanassa bohémica*, was described from the Early Miocene deposits of Dolnice in the Czech Republic. It is the only fossil record of this family known from Europe so far. (© Académie des sciences / Elsevier, Paris.)

**Aves / Jacanidae / Early Miocene / Czech Republic**

**Résumé** — Une nouvelle espèce de jacana, *Nupharanassa bohémica*, a été décrite d'après l'extrémité distale d'un tarsométatarsé trouvé dans le gisement de Dolnice (République tchèque), daté du Miocène inférieur. C'est la première découverte de la famille des Jacanidae dans les gisements tertiaires d'Europe. (© Académie des sciences / Elsevier, Paris.)

**Aves / Jacanidae / Miocène inférieur / République tchèque**

## Version abrégée (voir p. 122)

### 1. Introduction

Jacanas (family Jacanidae) are small to middle-sized shorebirds, inhabiting tropical, densely vegetated freshwater reservoirs and swamps around the world (Hayman et al., 1986). Their pre-Quaternary fossil record is extremely meagre, being limited to Florida (Olson, 1976; Becker, 1987), and Egypt (Rasmussen et al., 1987) thus far.

In the present paper, I will describe a new species of jacana from the Early Miocene deposits of Dolnice in western Bohemia, Czech Republic. The stratigraphical system follows Schmidt-Kittler (1987) for the Paleogene, and Mein (1990) for the Neogene. Schmidt-Kittler's Mammal Paleogene zones are abbreviated as MP, while Mein's Mammal Neogene zones as MN. The classification of the Charadriiformes follows Strauch (1978).

Skeletons of modern jacanas were examined in the United States National Museum in Washington, D.C. (USNM), in the Palaeontological Institute of the Russian

Academy of Sciences in Moscow, Russia (PIN), and in the author's collection in Prague, Czech Republic.

### 2. Systematics

Order Charadriiformes Huxley, 1867

Family Jacanidae Stejneger, 1885

Genus *Nupharanassa* Rasmussen, Olson and Simons, 1987

*Nupharanassa bohémica* sp. n.

(figure)

**Holotype.** Distal part of right tarsometatarsus; coll. O. Fejfar (Praha), uncatalogued.

**Material.** Holotype only.

**Age and locality.** Early Miocene (MN 4b) of Dolnice, Cheb County, West Bohemia, Czech Republic (Fejfar and Roček, 1988; Fejfar, 1990; Mlíkovský, 1992, 1996a; Fejfar and Kvaček, 1993).

Note communicated by Yves Coppens.

\* Correspondence and reprints.  
mlik@post.cz

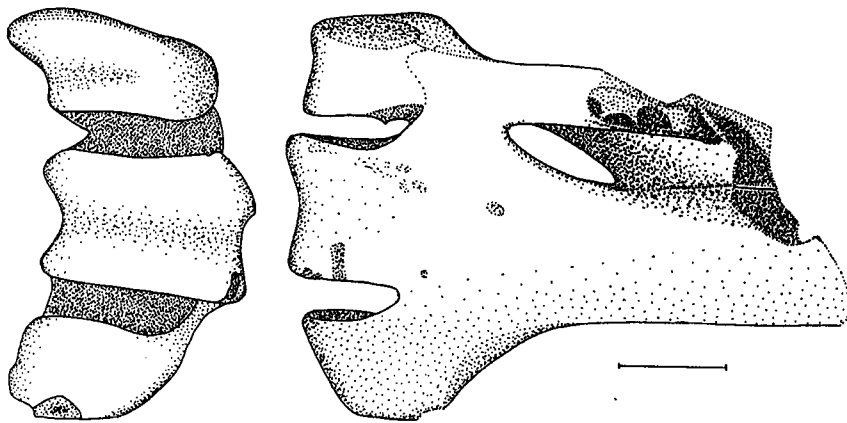


Figure. *Nupharanassa bohémica* n. sp., Dolnice, Czech Republic. Right tarsometatarsus, holotype, distal end, coll. Fejfar, uncatalogued, anconal view and distal view. Scale = 1 mm.

*Nupharanassa bohémica* n. sp., Dolnice, République tchèque. Tarsométatarse droit, holotype, partie distale, coll. Fejfar, sans numéro, face antérieure et interne. Échelle = 1 mm.

**Diagnosis.** A typical *Nupharanassa*, differing from all previously known *Nupharanassa* species in being much smaller, and in having rather smooth transition between the trochlea metatarsi tertii and fossa supratrochlearis plantaris.

**Comparison.** The distal portion of tarsometatarsus differs from the same element of all modern jacanas, and agrees with that of *Nupharanassa* in having: (1) distal foramen very large, and teardrop-shaped (distal foramen is large and rounded in all modern jacanas, and small in the Oligocene *Janipes*), and (2) all trochleae of approximately the same length (central trochlea is prolonged in modern jacanas and in *Janipes*).

**Etymology.** The generic name *Nupharanassa* means 'waterlily queen' (Rasmussen et al., 1987: 7), and queens used to have their reigns. This is thus the Waterlily Queen of Bohemia, the country where her remains were recovered.

**Measurements.** Distal width = 3.9 mm, anteroposterior depth of trochlea for digit II = 2.0 mm.

**Remarks.** *Nupharanassa bohémica* was a tiny jacana, distinctly smaller than both other species currently included in the genus *Nupharanassa*. Distal width of tarsometatarsus is 3.9 mm in *Nupharanassa bohémica*, 6.5 mm in *N. toltaria*, and 11.4 mm in *N. bulotorum* (Rasmussen et al., 1987). In this respect, *Nupharanassa*

*bohémica* parallels the modern Lesser Jacana *Microparra capensis* (Smith, 1839), which is much smaller than other modern jacanas, being a derivative of the 'normal-sized' genus *Actophilornis* Oberholser, 1899 (Fry, 1983).

### 3. Fossil record of the Jacanidae

The earliest representatives of the family Jacanidae, including *Nupharanassa bulotorum* Rasmussen et al., 1987, *Nupharanassa toltaria* Rasmussen et al., 1987, and *Janipes nymphaeobates* Rasmussen et al., 1987 were described from the Early Oligocene (MP?) of Fayum in Egypt. The next oldest record is *Nupharanassa bohémica* n. sp. from the Early Miocene (MN 4b) of Dolnice in the Czech Republic. The latter is the only fossil record of the Jacanidae in Europe (cf. Mlíkovský, 1996b), and the youngest fossil record of the Jacanidae in the Old World. In the New World, *Jacana farrandi* Olson, 1976 was found in the Middle Miocene (MN 9–10) of Love Bone Bed in Florida (Becker, 1987), and in the Late Miocene (MN 11–12) of McGehee in Florida (Olson, 1976; Becker, 1987).

*Rhegminornis calobates* from the Early Miocene of Florida, originally described as a jacanid by Wetmore (1943), was later shown to be a turkey (Olson and Farrand, 1974; Steadman, 1980).

### Version abrégée

Les jacanas (Aves : Jacanidae) actuels sont des oiseaux de marais et de lacs, de taille petite à moyenne, vivant dans les régions tropicales à végétation dense. Les fossiles pré-quatérnaires sont très rares et limités à la Floride (Olson, 1976 ; Becker, 1987) et à l'Égypte (Rasmussen et al., 1987).

Une nouvelle espèce a été découverte dans le Miocène inférieur de Dolnice, en Bohême occidentale, en République tchèque (Fejfar et Roček, 1988 ; Fejfar, 1990 ; Mlíkovský, 1992, 1996a ; Fejfar et Kvaček, 1993). Cette espèce nouvelle, *Nupharanassa bohémica*, a fait l'objet d'une étude systématique.

Les plus anciens représentants de la famille Jacanidae proviennent de l'Oligocène du Fayoum en Égypte (Rassmus-

sen et al., 1987) : *Nupharanassa bulotorum*, *Nupharanassa toltaria* et *Janipes nymphaeobates*. *Nupharanassa bohémica* du Miocène inférieur de Dolnice, en République tchèque, constitue le plus ancien représentant de cette famille en Europe. La seule autre forme éteinte de Jacanidae, *Jacana farrandi*, a été signalée dans le Miocène moyen et supérieur de Floride aux États-Unis (Olson, 1976 ; Becker, 1987).

*Rhegminornis calobates*, qui a été trouvé dans le Miocène inférieur de Floride et qui était considéré comme appartenant à la famille des Jacanidae (Wetmore, 1943) était en réalité un Meleagris (Olson et Farrand, 1974 ; Steadman, 1980).

**Acknowledgements.** The fossils from Dolnice were placed at my disposal by O. Fejfar (Prague). S.L. Olson (USNM) and E.N. Kuročkin and A.A. Karchu (PIN) allowed me to use comparative collections of avian skeletons under their care. The drawings were prepared by V. Švihla (Prague). I thank them all. This study was conducted in part, when I was short-term fellow of the Smithsonian Institution in Washington, D.C., in January/February 1997.

## 4. References

- Becker J.J. 1987. *Neogene avian localities of North America*, Smithsonian Institution Press, Washington, D.C., 171 p.
- Fejfar O. 1990. The Neogene vertebrate palaeontology sites of Czechoslovakia: a contribution to the Neogene terrestrial biostratigraphy of Europe based on rodents, in: Lindsay E.H., Fahlbusch V. and Mein P. (Eds.), *European Neogene mammal chronology*, Plenum Press, New York, 211–236
- Fejfar O. and Kvaček Z. 1993. *Tertiary basins in northwest Bohemia*, Univerzita Karlova and Česká geologická společnost, Praha, 35 p.
- Fejfar O. and Roček Z. 1988. The Lower Miocene vertebrate fauna of Dolnice, Cheb basin (western Bohemia, Czechoslovakia), *Acta Univ. Carol., Geologica*, 1986, 233–249
- Fry C.H. 1983. The jacanid radius and *Microparra*, a neotenic genus, *Gerfaut*, 73, 173–184
- Hayman P., Marchant J. and Prater T. 1986. *Shorebirds*, Christopher Helm, London, 412 p.
- Mein P. 1990. Updating of MN zones, in: Lindsay E.H., Fahlbusch V. and Mein P. (Eds.), *European Neogene mammal chronology*, Plenum Press, New York, 73–90
- Mlíkovský J. 1992. The present state of knowledge of the Tertiary birds of Central Europe, *Nat. Hist. Mus. Los Angeles Co., Science Series*, 36, 433–458
- Mlíkovský J. 1996a. Tertiary avian localities of the Czech Republic, *Acta Univ. Carol., Geologica*, 39, 551–557
- Mlíkovský J. 1996b. Tertiary avian faunas of Europe, *Acta Univ. Carol., Geologica*, 39, 777–818
- Olson S.L. 1976. A jacana from the Pliocene of Florida (Aves: Jacanidae), *Proc. Biol. Soc. Washington*, 89, 259–264
- Olson S.L. and Farrand J. 1974. *Rhegminornis* restudied: a tiny Miocene turkey, *Wilson Bull.*, 86, 114–120
- Rasmussen D.T., Olson S.L. and Simons E.L. 1987. Fossil birds from the Oligocene Jebel Qatrani Formation, Fayum Province, Egypt, *Smithson. Contrib. Paleobiol.*, 62, 1–20
- Schmidt-Kittler N. 1987. European reference levels and correlation tables, *Münchner geowiss. Abh. A*, 10, 13–19
- Steadman D.W. 1980. A review of the osteology and palaeontology of turkeys (Aves: Meleagridinae), *Nat. Hist. Mus. Los Angeles Co., Contrib. Sci.*, 330, 131–207
- Strauch J.G. Jr. 1978. The phylogeny of the Charadriiformes (Aves): a new estimate using the method of character compatibility analysis, *Trans. zool. Soc. London*, 34, 263–345
- Wetmore A. 1943. Fossil birds from the Tertiary deposits of Florida, *Proc. New England zool. Club*, 32, 59–68