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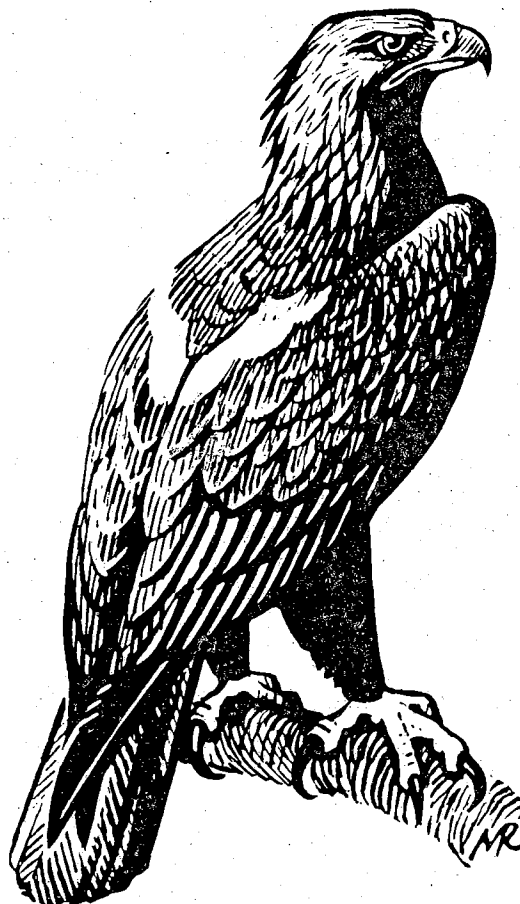
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PLIO-PLEISTOCENE BIRD REMAINS FROM THE
 CARPATHIAN BASIN III.
 STRIGIFORMES, FALCONIFORMES, CAPRIMULGI-
 FORMES, APODIFORMES

Dénes Jánossy

In two previous papers I dealt with the *Galliform* birds of the corresponding territory and age. Among the Plio-Pleistocene bird remains of the Carpathian Basin no other order of birds has the same systematico-stratigraphical significance as the chickenlike birds. While the remains of the latter order occur regularly and often in large quantities in faunas which contain birds at all, the bones originating from other orders are generally sporadical and occasional.

I chose for the next chapter the description of the remains of birds of four different orders; three of them are in the opinion of recent zoologists strongly related on the basis of etological-phenological arguments the owls (*Strigiformes*), the nightjars (*Caprimulgiformes*)

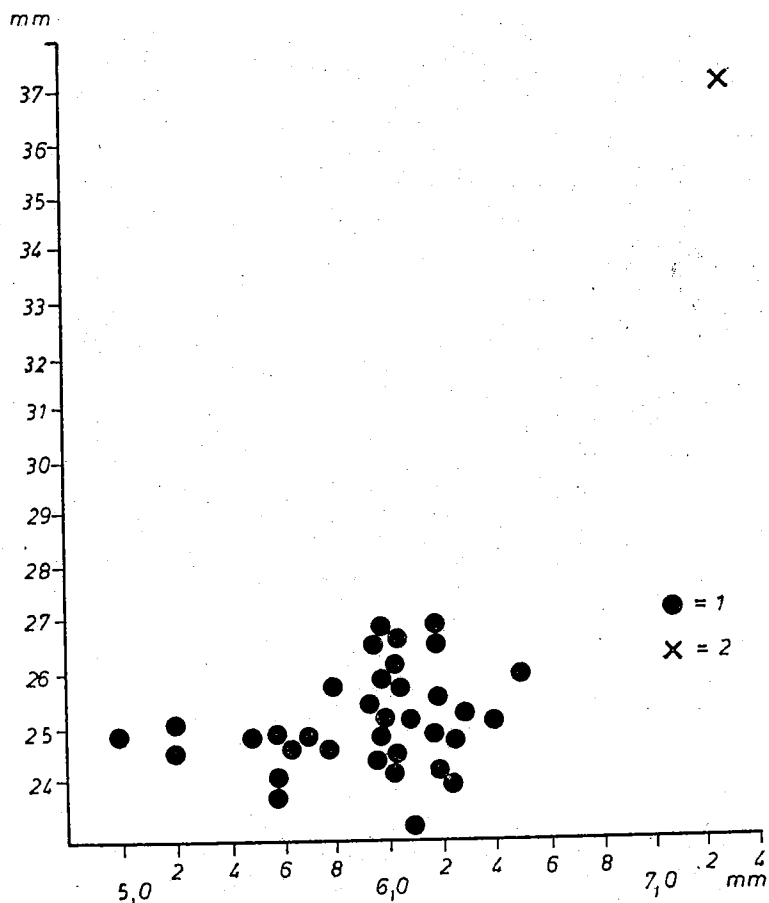
and the swifts (*Apodiformes*). Against a series of anatomical and ethological resemblances these relation-

Fig. 1. Scatter diagram showing the ratio of length (perpendicular axis) and width of diaphysis (horizontal axis) of the tarsometatarsi of fossil and recent *Surnia* species

1. *Surnia ulula*, Upper Pleistocene and recent; 2. *Surnia robusta* n. sp., Loc. 3. Villány, Lower Pleistocene

1. ábra. A csonthossz (függőleges tengely) és diaphysis-szélesség (vízszintes tengely) adatainak szórásdiagramja (mm) fosszilis és recens karvalybaglyok lábközépcsontján

1. *Surnia ulula*, felsőpleisztocén és recens; 2. *Surnia robusta* n. sp., Villány 3. alsó-pleisztocén



ships are not supported osteologically. On the other hand, the (diurnal) birds of prey (*Falconiformes*) and the owls (*Strigiformes*) are despite numerous anatomical and ethological differences, osteologically related, moreover there are in some groups „transitional” features: e.g. in the osprey (*Pandion haliaetus*) which has no foramen on the anterior surface of the femur but possesses a bony bridge over the extensor groove in the tarsometatarsus and the fourth digit of the pes is reversible, all typical features of the owls. These facts speak on the one hand for a very old (Lowest Tertiary) but in their roots strong relationship of the two latter orders and on the other for a mosaic-like evolution of different details of the body of all orders under discussion. Therefore I agree with DEMENTIEW (1951) who emphasises (not on the basis of osteological investigations!) the numerous characteristics of owls in common with diurnal raptors with those of e.g. the goatsuckers being only convergencies.

In other respects the owls, the birds of prey, as well as the swifts and the nightjars are osteologically well circumscribed groups and the determination of the members of these orders is quite unambiguous.

Order: *Strigiformes*

Family: *Strigidae*

Genus: *Surnia*

Surnia robusta n. sp.

(Fig. 1.—2.—3. and 5./9—10—11)

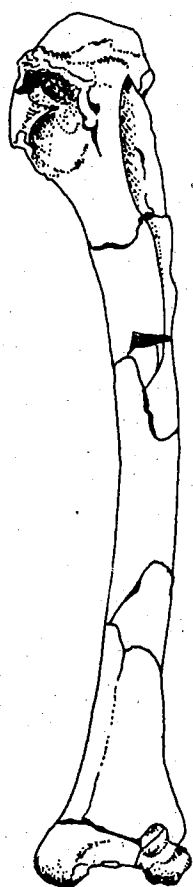


Fig. 3. *Surnia robusta n. sp.*, right humerus, medial view, Loc. 3. Villány. Pinxit I. Richter

3. ábra. *Surnia robusta n. sp.*, jobb oldali felkarcsont mediális nézetben, Villány 3. lelőhely

Richter Ilona grafikusművész rajza

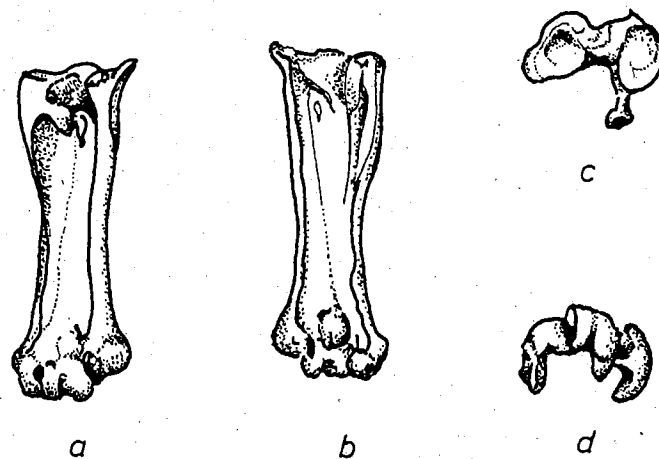


Fig. 2. *Surnia robusta n. sp.*, right tarsometatarsus from Loc. 3. Villány, type of the species

a) dorsal; b) ventral; c) proximal; d) distal view. Pinxit I. Richter

2. ábra. *Surnia robusta n. sp.*, jobb oldali lábközépcsontja Villány 3. lelőhelyről (a faj típusa)

a) dorzális; b) ventrális; c) proximális; d) disztális nézetben. Richter Ilona grafikusművész rajza

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Derivatio nominis: robusta, named after the Latin: robustus = strong, large, due to the huge dimensions.

Diagnosis: A large *Surnia* species, larger than the hitherto known recent and fossil forms of the genus.

Type-locality: Karst fissure of the Locality Villány 3., mts Villány, Southern Hungary.

Type-level: Lower Pleistocene („Middle Villafranchian”, „Upper Villanyian”).

Holotype: Complete left tarsometatarsus, leg. Kormos, T., Datum?; Inv. Nr. Geol. Inst. Vt, 62.

Paratype: Proximally and distally slightly damaged right humerus, from the same locality.

Further material:

Loc. Villány 3 („Villány-Kalkberg” „Villány-Süd” in older literature); besides the type and paratype:

Three dist. fragments of tibiotarsi; five fragments of tarsometatarsi; one mt₁, three phalanx I digit 1 posterior; two phal. 1. digit 2. post., 4 phal. 2. dig. 2. post; 2 phal. 1 dig. 3; 2 phal. 2 dig. 2; three phal. 3 dig. 3, three phal. 4. dig. 4; nine ungual phalanges.

Loc. „Villány-Nagyharsány-hegy”, leg. KORMOS (according to literary data, it is undecided from which one of the hitherto known four fissures of the eastern quarry of the Nagyharsány-hegy the material originates; see KRETZOI, 1956):

Cranial fragment of the coracoideum; three scapularfragm., two dist. fragm. of humeri: three proximal and one distal fragm. of carpometacarpi; two phalanx 1 digit. 2 anterior; dist. fragm. of femur; five dist. fragm. of tibiotarsi; four different fragm. of tarsometatarsi; three phalanges 2 dig. 2 posterior; phal. 2 dig. 3 posterior; phal. 3 dig. 3 post.;

Loc. Beremend 4. (in KRETZOI, 1956), leg. KORMOS, 1936; Ungual phalanx (?phal. 2 dig. 1 posterior).

Loc. Osztramos 7, leg. JÁNOSSY, 1970: proximal fragment of the phalanx 2 digit 2 posterior.

This rich material, containing nearly seventy bones of nearly all anatomical regions, allows a satisfactory analysis and description of the new form.

For a detailed analysis, the type-specimen, the intact tarsometatarsus, is the most convenient. I compared it in detail with the same bone of all European *Strigiforms* as well as with extra-European ones available in the collections of the British Museum (Nat. Hist.), London and in the Humboldt Museum, Berlin.

A comparison with the corresponding bone of the following species was possible: *Otus scops* and *brucei*, *Bubo virginianus*, *Nyctea nyctea*, *Surnia ulula*, *Glaucidium passerinum* & *brasilianum*, *Athene noctua*, *Strix aluco*, *uralensis* and *nebulosa*, *Aegolius funereus*, *Asio otus* and *accipitrinus*, *Pulsatrix perspicillata*, *Ninox novaesealandiae*, *Gymnoglaux lawrencii*, *Speotyto cunicularia*, *Ciccaba virgata*, *Rhioptynx clamator*, *Ketupa ketupu*, *Scotopelia peli*, *Jubula lettii*, *Mimizuku gurney*, *Pseudopteryx philippensis*, *Lophotryx cristata*, *Micrathene whitney*, *Uroglaux dimorpha*, *Sceloglaux albifacies*, *Pseudoscops grammicus* and *Nesasio solomonensis*.

The stout form and size of the bone delimits it from most recent and fossil species. Although there are some morphological resemblances with certain

