

## ASCAPHIDAE, A NEW FAMILY OF THE TAILLESS BATRACHIANS.

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*Ascaphus Truoi* STEJN., the unique Tailless Batrachian presenting, in adult condition, a „tail“-like appendage, has been placed, by its discoverer, in the Family *Discoglossidae*. This systematical standpoint was adopted by all herpetologists, also by the author of the present paper,<sup>1</sup> and *Ascaphus* was looked upon as the sole New World representative of the *Discoglossidae*. Some authors<sup>2</sup> erroneously took the „tail“-like appendage for a true tail, and considered *Ascaphus*, on account of this character, as constituting the most ancestral form among the living members of the Anuran chain.

The morphology of the *Ascaphus*-„tail“ has been definitively cleared up through the highly interesting studies made by Mr. G. K. NOBLE on „The Phylogeny of the Salientia“, the first Part of which, „The Osteology and the Thigh Musculature; Their Bearing on Classification and Phylogeny“, has been issued in March 1922.<sup>3</sup> Mr. NOBLE demonstrates, in this work, that the so-called „tail“ of *Ascaphus*, evidently functioning in the male, in which it is much more developed than in the female, as a copulatory organ, is supported by „cartilaginous prongs“, „which very probably represent a specialized portion of the rectus abdominis“. „The female *Ascaphus* does not help us in determining these homologies for the „tail“ is already differentiated, although very rudimentary“.<sup>4</sup> Mr. NOBLE designates these „two cartilages which, like a pair of scissor-forceps“, reach „out to grasp the end of the „tail“, as „postpubis“,<sup>5</sup> a term which I should like to substitute, in the present case, by an other one, the name „postpubis“ having been applied, by some authors, to what

<sup>1</sup> Krit. Bemerk. z. Osteol., Phylog. u. Syst. d. Anuren. (Arch. f. Naturgesch., 87, A, 3. Heft, Berlin, 1921, p. 25.)

<sup>2</sup> Cfr. H. SIMROTH, Die Pendulationstheorie, 2. Aufl., Berlin, 1914, p. 593, and (fide NOBLE, op. cit. p. 33.) TH. ARLDT, Die Ausbreitung d. Lurche (Arch. f. Naturg., 82, A, p. 118).

<sup>3</sup> Bull. Amer. Mus. Nat. Hist., XLVI, p. 1—87, Pls. I—XXIII, New-York.

<sup>4</sup> NOBLE, op. cit. p. 34 & Pl. VII, Fig. 3.

<sup>5</sup> Op. cit. Pl. VII.

appears to be the true pubis of the *Ornithischia* (Dinosaurians), whilst the processus pseudopectinealis of these Reptiles has been looked upon by them as constituting the pubis.<sup>1</sup> For this reason, and, in addition to it, also for the reason of the cartilaginous prongs not having any more intimate (genetic) relation to the pubis, especially if they would effectively prove to be a „specialized portion of the rectus abdominis“, as assumed by Mr. NOBLE, I propose to call these cartilages, which seem to represent a special acquisition of *Ascaphus*, cartilago abdominalis Nobleiana (comprising a cornu dexter and a c. sinister), in honour of their discoverer, to whom we are indebted for the first details concerning the anatomy of *Ascaphus*, which „has long been known as possessing a „tail“ in the adult male“,<sup>2</sup> though „none of the investigators who have studied *Ascaphus* have considered it a true tail“.<sup>3</sup> Besides the cartilago abdominalis Nobleiana, there is yet another skeletal element, named „prepubis“,<sup>4</sup> by Mr. NOBLE, consisting of a bony part lying caudad and evidently formed by the fusion of two halves, and bearing a subtriangular process which is cartilaginous and directed forward. The designation of this skeletal portion — the bony part of which might, perhaps, prove to be the „true“ pubis — as „prepubis“ seems to be, to my mind, inadmissible, because we are unable to homologize it with the homonyme element occurring in the Reptiles. I should like to propose, therefore, to call the bony („basal“) part provisionally subpubis, whilst the cartilaginous portion, which undoubtedly suggests some resemblance to the cartilago epipubica or epipubis of the Urodeles and of *Xenopus*,<sup>5</sup> might be designated as cartilago subpubica, at least until its true morphological value will be definitively established.

The presence of the cartilago abdominalis Nobleiana — and of the subpubis with its cartilaginous portion —, which are skeletal features unique among all the Tailless Batrachians, is from both the phylogenetical and morphological point of view so a highly important peculiarity that I wish to separate, on account of this specialization, associated with the presence of a caudalipuboischiotibialis muscle<sup>6</sup>, only found, up to now, in Urodeles, the Genus *Ascaphus* from the Discoglossids, establishing for it the Family *Ascaphidae*.

<sup>1</sup> Cfr. O. ABEL, Die Stämme d. Wirbeltiere, Berlin u. Leipzig, 1919, p. 577, footnote.

<sup>2</sup> NOBLE, op. cit. p. 33.

<sup>3</sup> Op. cit. p. 34.

<sup>4</sup> Op. cit. Pl. VII.

<sup>5</sup> Cfr. R. WIEDERSHEIM, Vergl. Anat. d. Wirbeltiere, VI. Aufl., Jena, 1906, p. 164, Fig. 118 A & B.

<sup>6</sup> NOBLE, op. cit. p. 35 & 44, Pl. VI & XVII.

The *Ascaphidae* are, at any rate, more differentiated from the *Discoglossidae* than the *Hymenochiridae* are from the *Xenopodidae*, for instance, so that it is absolutely logical, from the systematical point of view, to look upon *Ascaphus* as representative of a separate Family, bearing close relations to the *Discoglossidae* inhabiting the Old World, with which it might have sprang from a common stock, but having been very early isolated from them, retaining some very primitive, i. e. ancestral characters on the one hand (e. g. presence of the caudalipuboischiotibialis muscle<sup>1</sup>) and having acquired very specialized markings on the other. The Family *Ascaphidae* is, thus, from a bionomical<sup>2</sup> standpoint, decidedly heterepistatic, a statement which will be, presumably, supported also by other anatomical details to be brought forth in the course of future investigations.

#### *Ascaphidae* nov. fam.

Upper jaw toothed; vertebrae opisthocoelous; monosacral; dilatationes sacrales of perasacral<sup>3</sup> type; anterior ribs free (i. e. not coossified with the diapophyses); shoulder girdle arciferous; a paired os subpubicum (true pubis?) present, provided with a cartilago subpubica; two post-pubically situated cartilaginous prongs, the right and left cornu of the cartilago abdominalis Nobleiana, supporting a tail-like cloaca; a phylogenetically primitive tail muscle, the m. caudalipuboischiotibialis, occurring in the Urodeles, is present. Heterepistatic.

The Gens **ASTEROPHRYOMORPHA** nov. nom.,<sup>4</sup> belonging to the

<sup>1</sup> Without having had the occasion to examine *Ascaphus* myself, I dare to emit the supposition that the morphology and development of its praehallux will most probably prove to be very primitive too. („I. Stufe“ of the phylogenetical development of the praehallux; cfr. G. J. v. FEJÉRVÁRY, „Die phylog. Bedeutung d. Prähallux u. vergl.-osteol. Notizen über den Anuren-Tarsus“, to be published in the next volume of the „Palaeontologische Zeitschrift.“)

<sup>2</sup> See for the use of this term: G. J. DE FEJÉRVÁRY, Note sur l'emploi de quelques termes biologiques. (Ann. Mus. Nat. Hung., XVIII, p. 183.)

<sup>3</sup> Cfr. G. J. DE FEJÉRVÁRY, Anoures Foss. des Couches Préglac. de Püspöckfördő en Hongrie en Consid. spéc. du Dével. phyl. du Sacrum chez les Anoures. (Földtani Közl., XLVII, 1917, p. 47.)

<sup>4</sup> Be cause of the application of the law of Priority also in the case when names of families, subfamilies, and other higher categories be concerned (cfr. G. HORVÁTH, Sur les noms des familles et des sous-familles du Règne animal, Verh. d. VIII. Intern. Zool.-Kongr. zu Graz, Aug. 1910, Jena, 1912, p. 852), this name must be adopted instead of the denomination *Pelobatomorpha* BY. emend. FEJÉRVÁRY. Arch. f. Naturgesch., 1921, p. 24.

Suborder *Anisobatrachoidea* FEJÉRV., comprises thus the following families, subfamilies and genera:

I. Family: *Ascaphidae* FEJÉRV.

Genus: *Ascaphus* STEJN.

II. Family: *Discoglossidae* GÜNTH. (sensu FEJÉRV.)

1. Subfamily: *Discoglossinae* MIVART, emend. FEJÉRV. (sensu FEJÉRV.)

Genera: *Discoglossus* OTTH, † *Latonia* H. v. MEY.

2. Subfamily: *Bombininae* MIVART, emend. FEJÉRV. (sensu FEJÉRV.)

Genera: *Bombina* OKEN, *Alytes* WAGL., + *Pelophilus*\* TSCH.<sup>1</sup>

III. Family: *Asterophryidae* GÜNTH., emend. FEJÉRV.<sup>2</sup> (sensu FEJÉRV.)

1. Subfamily: *Pelodytinae* MIVART., emend. FEJÉRV. (sensu FEJÉRV.)

Genus: *Pelodytes* (FITZ.) BONAP.

2. Subfamily: *Pelobatinae* MIVART, emend. FEJÉRV. (sensu FEJÉRV.)

Genera: *Pelobates* WAGL., *Scaphiopus* HOLBR.

3. Subfamily: *Asterophryinae* nov. nom.<sup>3</sup>

Genera: *Asterophrys* TSCH., *Megalophrys* KUHL, *Lechriodus* BLGR.<sup>4</sup>

Budapest, Nov. 17<sup>th</sup>, 1923.

<sup>1</sup> For palaeontological signs and nomenclature see my paper: Note de nomencl. paléozool. (Bull. Soc. Vaud. Sc. Nat., 52, Lausanne, 1919, p. 317—324.)

<sup>2</sup> According to what has been stated in footnote <sup>1</sup> on p. 180 this name must be applied to the family called, up to now, *Pelobatidae*, „*Asterophryidae*“ GÜNTH., 1858, being more ancient than *Pelobatidae* LATASTE, 1875. (SCHREIBER described the family in the same year and under the same name as LATASTE!)

<sup>3</sup> The family-name having been changed, the subfamily-name *Megalophryinae* FEJÉRV. (op. cit. 1921, p. 25) must be dropped and substituted by the new denomination *Asterophryinae* FEJÉRV.

<sup>4</sup> This genus (= *Batrachopsis* BLGR. non FITZ.) belongs to the subfamily *Asterophryinae*, and not to the *Pelobatinae*, as erroneously suggested by me in Arch. f. Naturg., loc. cit.