



(2710) Proposal to conserve the name *Otozamites* (fossil *Cycadophyta*: *Bennettitales*) against *Otopteris*

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(2710) *Otozamites* Braun in Münster, Beitr. Petref.-Kunde 6: 36. 1843, nom. cons. prop.

Typus: *O. bucklandii* (Brongn.) Brongn. in Orbigny, Dict. Univ. Hist. Nat. 13: 110. 30 Jun–7 Jul 1849 (*Filicites bucklandii* Brongn. in Ann. Sci. Nat. (Paris) 4: 422. Apr 1825).

(=) *Otopteris* Lindl. & Hutton, Foss. Fl. Gr. Brit. 2: 142. Oct 1834.

Typus (vide Andrews in Bull. U.S. Geol. Surv. 1013: 199. 1955): *O. obtusa* Lindl. & Hutton

The sixth part of Münster's *Beiträge zur Petrefacten-Kunde* starts with a chapter, written by Braun (in Münster, Beitr. Petref.-Kunde 6: 1–46. 1843), mainly on fossil plants found in the region of Bayreuth in Bavaria (S Germany). In section II of this chapter, Braun described a few new genera and new species. On p. 21, he started a discussion and description of a beautiful new species of *Zamites*, for which he presented the name *Zamites brevifolius* Braun, with its name and a diagnosis on p. 23.

On p. 34 he started section IV, on fossil representatives of *Zamia* s.l. (along with some new species of *Ctenis*). In this section, on p. 36, he presented three new genera for these fossil zamias: *Otozamites*, *Podozamites*, and *Pterozamites*. In *Otozamites* he definitely included *Zamites bucklandii* and six other species of *Zamites*. Braun's presentation is remarkable, because the idea has long existed that *Otopteris* and *Otozamites* represent the same genus, i.e., are taxonomic synonyms – but Braun did not put *Otopteris* in the synonymy of *Otozamites*. We now submit a proposal to conserve *Otozamites* against *Otopteris*, because it is *Otozamites* that has long been in use. A.T. Brongniart (in Orbigny, Dict. Univ. Hist. Nat. 13: 110. 30 Jun–7 Jul 1849) already united the two genera, retaining the name *Otozamites* because he treated it as a cycad (“famille des Cycadées”) not as a fern. Later in the 19th century there were still some discussions on the issue of whether it was a fern (in which case one continued with *Otopteris*), or a cycadophyte (in which case one adopted *Otozamites*). Before the end of that century, it appeared that everybody agreed: a cycadophyte, and thus everybody used the name *Otozamites*, and *Otopteris* was forgotten.

The conservation of *Otozamites* against *Otopteris* has been proposed previously, more than 50 years ago, in two papers by the same author: Karl Kilpper (in *Regnum Veg.* 40: 30–31. 1965, in *Taxon* 17: 548–552. 1968). Both proposals were rejected (Mamay in *Taxon* 18: 481. 1969), but not for good nomenclatural or taxonomic reasons, and with a recommendation for further study.

Kilpper's proposals included various errors. In the first (l.c. 1965) he stated that Braun had overlooked the genus of Lindley &

Hutton, i.e., *Otopteris*, but this is not the case. Kilpper apparently looked only at the first genus (*Otozamites*) on page 36 of Braun's account, and had not noticed that on the same page, *Otopteris* was cited as a synonym of a constituent of Braun's third genus, i.e., *Pterozamites* subg. *Taeniopteroides*. Kilpper continued (p. 30–31, in German, translated by us) with “The diagnoses of both genera are almost the same. Both are unequivocally synonyms of each other. The name *Otozamites* Fr. Braun thus is illegitimate, [...] thus should be protected against *Otopteris* by conservation.” *Otozamites* is not, however, illegitimate under current rules, as Braun did not include the type of any name that ought to have been adopted (Art. 52.1 & 52.2 of the *ICN* – Turland & al. in *Regnum Veg.* 159. 2018). Braun did cite “*Odontopteris*. Sternb.”, i.e., *Odontopteris* (Brongn.) Sternb. (Vers. Fl. Vorwelt 1(4, Tent.): xxi. 1825), as a synonym of *Otozamites*, but as this is a later homonym of *Odontopteris* Bernh. (in *J. Bot.* (Schrader) 1800(2): 127. 1801), applicable to non-fossil pteridophytes, it was not available for Braun to adopt. [*Odontopteris* (Brongn.) Sternb. has since been conserved against its earlier homonym.]

In his second proposal Kilpper (l.c. 1968) provided an elaborate discussion on *Otozamites*, albeit with the same errors: that Braun had overlooked *Otopteris* Lindl. & Hutton and that *Otozamites* was illegitimate. In his first proposal, Kilpper (l.c. 1965: 31) had noted that Brongniart (l.c. 1849) had designated *O. bucklandii* as type of *Otozamites* but in the later paper suggested that this had still to be settled. In Kilpper's proposals, there is nothing about a choice of the type of *Otopteris* – probably because he considered that *Otozamites* should be conserved against it.

We agree that Brongniart's choice of *O. bucklandii*, explicitly confirmed by Saporta (Paléont. Franç., Pl. Jurass. 2: 44–45. Apr 1876), is an appropriate one. When Brongniart made this choice, he referred to an illustration by H.T. De la Beche (in *Trans. Geol. Soc. London*, ser. 2. 1: t. 7, fig. 2. 1822). This is of a specimen that was collected by Buckland and which is still in the Oxford University Museum of Natural History (OUMNH). We were able to obtain from Oxford a very good picture of this specimen, of which the “ears”, typical for the genus *Otozamites*, are better visible than on that 1822 illustration – see Fig. 1. It clearly concerns the same specimen! As noted by De la Beche (l.c.: 45–46) and confirmed in the Buckland collection in Oxford, the specimen was collected at Axminster (Devon) close to the south coast of England, in Jurassic (Liassic) sediments. When Brongniart (l.c. 1825) described *Filicites bucklandii*, he referred to specimens/material from two localities in England (“Lime” [Lyme Regis] and Axminster) that he considered as “var. α . *Britannica*”, referring De la Beche's figure to that variety, and from two localities in France that he considered as “var. β . *Gallica*” and that



Fig. 1. Specimen OUMNH J.1143, lectotype of *Filicites bucklandii*. It is the specimen figured by De la Beche (l.c. t. 7, fig. 2) and referenced by Brongniart (l.c. 1849) when he designated the type of *Otozamites*. Scale bar: 1 cm.

he, himself, figured (Brongniart, l.c. 1825: t. 19, fig. 3). Brongniart's own figure was quite clear, but very small (only four pinnules). So we can well understand that for the type of the generic name, he again (l.c. 1849) referred to the "bien figuré" of De la Beche. We have now decided to **designate here the specimen OUMNH J.1143 (also labelled with number "MM 512"), from Axminster as the lectotype of *Filicites bucklandii*.** This material has been included within

Otopteris graphica Bean ex Leckenby (in Quart. J. Geol. Soc. London 20: 78. 1864), making that name a synonym of *Otozamites bucklandii*, whereas the material upon which *F. bucklandii* var. *gallica* is based has never has been identified with any later collections.

The type specimen of *O. obtusa* was figured by Lindley & Hutton (Foss. Fl. Gr. Brit. 2: 128. 1834) and Seward (in Foss. Pl. 3: 538. 1917), and is deposited in the Oxford University Museum of Natural History (OUMNH J.1141).

Some important species of *Otozamites* are: *O. bengalensis* (Oldham & Morris) Schimp. (Traité Paléontol. Vég. 2: 172. 1870), *O. brevifolius* Braun (in Münster, Beitr. Petref.-Kunde 6: 23, 29. 1843), *O. bunburyanus* Zigno (Fl. Foss. Oolith. 2: 102. 1881), *O. goeppertianus* (Dunker) Seward (Foss. Pl. 3: 544. 1917), *O. gracilis* (Kurr) Miq. (Prodr. Syst. Cycad.: 32. 1861), *O. leckenbyi* T.M. Harris (Yorkshire Jurass. Fl. 3: 23. 1969), *O. marginatus* (Saporta) Saporta (Paléont. Franç., Pl. Jurass. 2: 168. 1873), *O. parviauriculata* C.A. Menéndez (in Bull. Brit. Mus. (Nat. Hist.), Geol. 12: 4. 1966), *O. penna* T.M. Harris (in Ann. Mag. Nat. Hist., ser. 11, 12: 484. 1946), *O. schenkii* (Heer) Seward (in Mém. Soc. Géol. Belgique 5: 242. 1925), *O. thomasi* T.M. Harris (l.c. 1969: 21), *O. venosus* T.M. Harris (in Ann. Mag. Nat. Hist., ser. 12, 2: 571. 1950).

About 100 species of *Otozamites* exist; without conservation, the vast majority of their names would have to be transferred to *Otopteris*, one of the few exceptions being *Otozamites marginatus* that is based on *Otopteris marginatus*. Since 1875, no further species have been described within *Otopteris*.

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