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***Isaura* Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826, an available name and objective synonym of *Isaurus* Gray, 1828: reversal of precedence (Cnidaria: Anthozoa: Hexacorallia)**

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Savigny (1811: pl. 2, figs. 1–4, caption) presented four species of zoanthids which he referred to as “*Isaures fixées*” in French (not Latin) in his work on cnidarians from Egypt. Audouin (1826: 229–231) later wrote the text to accompany Savigny’s (1811: pl. 2) plates, when the latter’s health failed (see Sherborn 1897: 287).

Audouin (1826: 229) wrote that “*Les genre Isaure, que M. Savigny divise en Isaures libres et en Isaures fixes, a grand rapports avec les Actinies. Les espèces fixes avoisinant beaucoup les Zoanthes; et toutes se rapprochent tellement du genre Palythoé, Palythoa, de M. Lamouroux...*” [“The genus Isaure, which M. Savigny divided into ‘free’ Isaures and ‘fixed’ Isaures, have a general relationship with the sea anemones. The ‘fixed’ Isaures are very much akin to the zoanthids, and are closely related to the genus Palythoé, *Palythoa*, of Lamouroux”].

Audouin (1826: 229, 230) did not Latinise the French vernacular name “Isaure” but provided Latin names for all four species figured by Savigny (1811: pl. 2, figs. 1–4), all of which were assigned to the genus *Palythoa* Lamouroux, 1816 (Table 1). By bibliographic reference all four names are available (Article 12.2.7 of the *International Code of Zoological Nomenclature*, hereafter the Code; ICZN 1999). It is clear that Audouin (1826: 229, 230) considered Savigny’s name “Isaure” to be synonymous with *Palythoa* Lamouroux, 1816.

The Latin name *Isaura* was first used by Lamouroux in an entry on page 23 of a natural history dictionary (Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent 1826). The explanation accompanying the name *Isaura* is as follows:

“*Isaure. Isaura. Polyp. Genre de l'ordre des Actinaires, dans la division des Polypiers sarcoïdes, plus ou moins irritables, sans axe central, proposé par Savigny qui en a figuré plusieurs espèces (Pl. 2, Polypes, HN, Zoologie [= Savigny 1811: pl. 2]) dans le grand ouvrage sur l'Égypte. Nous ne faisons qu'indiquer ce genre, quoi qu'il mérite d'être adopté, Savigny n'en ayant pas encore donné la description. (Lam..X.)*” [Isaure. *Isaura*. Polyps. Genus of the order of sea anemones, in the group of ‘polypiers sarcoides’ [= colonies with tumorous growths that resemble sarcomas], more or less irritable, without a central axis, and proposed by Savigny [1811: pl. 2] who gave figures of many species from his great work on Egypt. We do not do more than give a notice of this genus, which deserves to be adopted, as Savigny has not yet given a description (Lamouroux)”].

The name *Isaura* and an explanation identical to the one above also appears on page 463 of a work by Lamouroux, Bory de Saint-Vincent & Deslongchamps which has the date “1824” printed on the title-page (the imprint date).

However, Evenhuis (2003: 37) has shown that this work by Lamouroux, Bory de Saint-Vincent & Deslongchamps was issued in two parts that were published in 1824 and 1827, with the part containing page 463 only being published in 1827. The use of the name *Isaura* in Lamouroux, Bory de Saint-Vincent & Deslongchamps (1827: 463) is thus antedated by that in Lamouroux (*in* Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemin, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent 1826: 23).

The name *Isaura* is an available name as Lamouroux (*in* Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemin, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent 1826: 23) proposed “a new genus-group name ... in association with an illustration of the taxon being named, or with a bibliographic reference to such an illustration ...” (Article 12.2.7 of the Code). Following the arguments in Low & Ng (2012: 49), authorship of the name *Isaura* is attributable to Lamouroux (*in* Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemin, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent 1826).

Haddon & Shackleton (1891: 682) wrote: “The genus *Isaurus* was established by J.E. Gray in 1828 (Spic. Zool., 1828, p. 8) to include a species not before described, specimens of which from an unknown locality were in the British Museum. He named this species *Isaurus tuberculatus* on account of the tubercles on its surface. The name *Isaurus* is a Latinized version of *Isaure*, a name applied by Savigny (*Description de l’Égypte*, Polypes, pl. 2, figs. 1–4, 1811, ined.) to four species figured by him in 1811, and supposed by Gray to be of the same genus as his *I. tuberculatus*. Savigny published, however, neither the characters of the genus nor descriptions of the species. Lamouroux mentions the genus as *Isaura*, but neither does he define it in any way”. As discussed above, however, the genus-group name *Isaura* Lamouroux, *in* Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemin, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826, is an available name.

Gray (1828: 8) used the genus-group name *Isaurus* and wrote: “[o]f this genus, indicated in the plates to the magnificent *Description de l’Égypte*, M. Savigny has published neither characters nor description. The name which is there given, *Les Isaures*, has been Latinized, also without characters, by M. Lamouroux, who has called it *Isaura*. As, however, the latter name is already appropriated to a genus of plants, and the termination is in itself of little importance, I have ventured to change it to *Isaurus*”.

It is clear that Gray (1828: 8) considered to the name *Isaura* Lamouroux, *in* Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemin, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826, to be preoccupied by the botanical genus-group *Isaura* Commerson ex Poirét, 1813, and explicitly proposed *Isaurus* to replace *Isaura* Lamouroux, *in* Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemin, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826. *Isaurus* Gray 1828, is thus a junior objective synonym of *Isaura* Lamouroux, *in* Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemin, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826 (Article 72.7 of the Code).

Concerning the names *Isaura* Lamouroux, *in* Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemin, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826, and *Isaura* Commerson ex Poirét, 1813, Article 53.1 of the Code states that “[t]he name of an animal taxon identical with the name of a taxon which has never been treated as animal is not a homonym for the purposes of zoological nomenclature”. The name *Isaurus* Gray, 1828, is thus an unnecessary replacement name for *Isaura* Lamouroux, *in* Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemin, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826.

Gray (1828: 8) also established five species-group names in the genus *Isaurus*: *Isaurus tuberculatus*, *I. natans*, *I. savignyi*, *I. aggregatus*, and *I. clavatus* (Table 1). The last four names were made available by bibliographic reference to Savigny (1811: pl. 2, figs. 1–4), and are junior objective synonyms of Audouin’s (1826: 229, 230) names (Table 1). *Isaurus tuberculatus* Gray, 1828, as described above, was based on a specimen available to Gray from an unknown locality (Haddon & Shackleton 1891: 682; Muirhead & Ryland 1985: 326, 328).

As no species were included in the discussion of the genus-group name *Isaura* Lamouroux, *in* Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemin, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826, Gray (1828: 8) is deemed to have been the first author to have included species (*viz.*, *Isaurus*

aggregatus, *I. clavatus*, *I. natans*, *I. savignyi*, *I. tuberculatus*) in the genus *Isaura* Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826 (Article 67.2.2 of the Code).

All five names were thus available for fixation as the type species of the genus-group names *Isaurus* Gray, 1828, and *Isaura* Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826 (Article 67.2 of the Code). *Isaurus tuberculatus* Gray, 1828, is therefore not the type species of the genus *Isaurus* Gray, 1828, by monotypy as is commonly assumed (e.g. Muirhead & Ryland 1985: 326) but instead the type species by subsequent designation. Haddon & Shackleton (1891: 682) were the first authors to designate *Isaurus tuberculatus* Gray, 1828, as the type species of *Isaurus* Gray, 1828 (and by extension *Isaura* Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826).

The Principle of Priority (Article 23 of the Code) requires that the oldest available name for the taxon under consideration is to be used. However, replacing *Isaurus* Gray, 1828, with *Isaura* Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826, is not in the interest of nomenclatural stability, as the former is in current and widespread use (see below). We invoke Article 23.9 of the Code that requires a reversal of precedence of a junior synonym when the senior synonym has not been used as a valid name after 1899 (Article 23.9.1.1) and the junior synonym “has been used for a particular taxon, as its presumed valid name, in at least 25 works, published by at least 10 authors in the immediately preceding 50 years and encompassing a span of not less than 10 years” (Article 23.9.1.2).

Since 1899, the genus-group name *Isaura* Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826, has been used only twice. Carlgren (1903: 46) used the name *Isaura*, without citing an authority when discussing the classification system of Lamouroux. It is clear, however, that Carlgren (1903: 46) was providing a historical survey of the classification systems used by earlier workers for the Anthozoa, and was simply citing the name, without considering it to be valid. Walsh (1967: 13, 27) also used *Isaura* in his nomenclator, but in all instances the name is listed as used by previous authors and not considered to be valid. The name *Isaurus* Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826, has thus not been used as a valid name for the taxon it denotes since 1899, fulfilling Article 23.9.1.1 of the Code.

In the past 45 years, 30 publications by 58 different authors have used the name *Isaurus* Gray, 1828, as the valid name for the taxon it denotes (viz., Acosta *et al.* 2005: 147, 148, 152, 155, 159–161; Aguilar & Reimer 2010: 195, 197, 198, 201, 202; Bisewar *et al.* 2002: 371, 373; Burnett *et al.* 1994: 158; Herberts 1972a: 142; 1972b: 127, 131–136; Hirose *et al.* 2011: 24; Larson & Larson 1982: 475–487; Manjarrés 1982: 51–55; Muirhead & Ryland 1985: 323, 325–334; Previati *et al.* 2010: 555, 557; Quinn *et al.* 1974: 257, 258; Rabelo & Matthews-Cascon 2007: 55–58; Reimer *et al.* 2008a: 938, 943–945; 2008b: 57–59, 63, 64; 2008c: 646; 2010: 147–155, 157, 158; 2011a: 983, 985–992; 2011b: 313, 314, 316, 318–321; 2012: 45, 52; Ryland 1997: 177–179, 183, 184; Ryland & Westphalen 2003: 417, 418; Ryland *et al.* 2000: 192, 197; Sebens 1982: 321; Sinniger *et al.* 2005: 1122, 1124, 1125; Soares *et al.* 2011: 439, 440; Swain 2009: 234; 2010: 2592; Walsh 1967: 2–4; Walsh & Bower 1971: 161, 162, 164, 177), thus fulfilling Article 23.9.1.2 of the Code.

As both requirements of Article 23.9.1 are met, and in accordance with Article 23.9.2, the name *Isaurus* Gray, 1828, is considered a valid name and takes precedence over the objective synonym *Isaura* Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826. *Isaurus* Gray, 1828, now becomes a *nomen protectum* and *Isaura* Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826, a *nomen oblitum*.

Isaurus Gray, 1828, is the valid name for the genus-group with *Isaurus tuberculatus* Gray, 1828, as its type species by subsequent designation by Haddon & Shackleton (1891), and has precedence over the objective synonym *Isaura* Lamouroux, in Audouin, Bourdon, de Candolle, d'Aubebard de Férussac, Deshayes, Deslongchamps, É. Geoffroy Saint-Hilaire, I. Geoffroy Saint-Hilaire, Guérin, Guillemain, de Jussieu, Kunth, Delafosse, Lamouroux, Latreille, Prévost, Richard & Bory de Saint-Vincent, 1826.

TABLE 1. Names given by Audouin (1826: 229, 230) and Gray (1828: 8) for the figures in Savigny (1811: pl. 2). Gray's (1828) names are junior objective synonyms of Audouin's (1826).

Figure	Name given by Audouin (1826)	Name given by Gray (1828)
1	<i>Palythoa savignyi</i> ^a	<i>Isaurus natans</i>
2	<i>Palythoa lesueurii</i>	<i>Isaurus savignii</i> ^a
3	<i>Palythoa bertholletii</i>	<i>Isaurus aggregatus</i>
4	<i>Palythoa perii</i>	<i>Isaurus clavatus</i>

^aThese species-group names are identical for the purposes of homonymy (Articles 58.13 and 58.14 of the Code) and are secondary homonyms if assigned to the same genus-group (Article 57.3 of the Code).

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