

WILKINGIA GEN. NOV. TO REPLACE
ALLORISMA FOR A GENUS OF
UPPER PALAEOZOIC LAMELLIBRANCHS

by R. B. WILSON

ABSTRACT. The Upper Palaeozoic lamellibranch genus *Allorisma* King 1844 is placed in the synonymy of *Edmondia* de Koninck 1842, as the type species, *Sanguinolaria sulcata* Phillips 1836, is conspecific with *Hiatella sulcata* Fleming 1828, the latter species being an *Edmondia*. The name *Allorisma* King 1850, for a sinu-pallial form, is replaced by the new name *Wilkingia*. The type species *Wilkingia* [*Venus*] *elliptica* (Phillips) is described.

THE author's revision of the Carboniferous lamellibranch species described by John Fleming (Wilson, *Bull. Geol. Surv. Gt. Brit.*, in press) has revealed that the surviving type specimens of *Hiatella sulcata* Fleming 1828, and *Sanguinolaria sulcata* Phillips 1836, are conspecific, and that the species should be assigned to *Edmondia* de Koninck 1842. On morphological grounds Fleming's original assignation of the species to *Hiatella* Daudin, a synonym of *Saxicava* Fleuriau, cannot be accepted. Of the original specimens named *Hiatella sulcata* by Fleming, seven still remain. Of these, one is selected as lecto-type (Wilson, op. cit.); of the remainder three are indeterminable. Only one syntype of Phillips's species *Sanguinolaria sulcata* has survived. This specimen, although not Phillips's original figured specimen, was figured by Hind (1899, p. 321, pl. 34, fig. 3) as the probable type of Phillips's species. It has proved to be conspecific with the determinable syntypes of Fleming's species. *Hiatella sulcata* possesses well-developed internal cartilage plates and a non-sinuate pallial line, and has been assigned to *Edmondia* de Koninck. King (1844, p. 313) selected *Sanguinolaria sulcata* Phillips as the type species of his new genus *Allorisma*, emphasizing the presence of internal cartilage plates (fulcra) in the genus. Later, King (1850, p. 163) acknowledged the fact that de Koninck had already described these internal cartilage plates in *Edmondia*, and that species which he (King) had formerly placed in *Allorisma*, should be assigned to *Edmondia*. Unfortunately, he retained the name *Allorisma*, altering the diagnosis to include forms with a pallial sinus and without internal cartilage plates. For the modified genus he took *Hiatella sulcata* Fleming as type species, claiming that this species possessed a pallial sinus. The study of Fleming's specimens does not support this contention. To illustrate the genus, King (1850, pl. 20, fig. 5) figured a specimen possessing a pallial sinus which he called '*Allorisma sulcata* Fleming', but this specimen belonged to a species previously briefly described, figured and named *Venus elliptica* by Phillips (1836, p. 209, pl. 5, fig. 7). From morphological considerations, this form cannot be assigned to *Venus*, *Myacites* (Salter 1861, p. 221, pl. 1, fig. 28), or *Edmondia*, and as the name *Allorisma* is not available, it, and related species require to be grouped in a new genus for which the name *Wilkingia* is proposed, with *Wilkingia elliptica* (Phillips) here designated as type species.

Hind (1900, p. 422) recognized that the form King had figured as *Allorisma sulcata* was the same as that named *Venus elliptica*, but he used the name *Allorisma sulcata* for the species, as he considered that some examples of it were used by Fleming when describing *Hiatella sulcata*. The study of Fleming's syntypes does not support this view.

[*Palaeontology*, Vol. 1, Part 4, 1959, pp. 401-4, pl. 71, pars.]

Phillips (1836, p. 247) stated that the specimen he figured as *Venus elliptica*, here designated the lectotype of the species, was in the collection of the Yorkshire Philosophical Society, which is now housed in the Yorkshire Museum, York. The specimen cannot be found and is presumed lost. The specimen King (1850, pl. 20, fig. 5) figured as *Allorisma sulcata* is also missing. Unsuccessful searches for it have been made in the Hancock Museum, Newcastle upon Tyne, and University College, Galway, the two institutions in which it is most likely to have been preserved. The following descriptions are based on fourteen specimens in the collections of the Geological Survey and Museum, London, from Redesdale, Northumberland, which the author considers to be conspecific with *Venus elliptica* Phillips.

WILKINGIA gen. nov.

Type species *Venus elliptica* Phillips

Diagnosis. Elongate-oval lamellibranchs, equivalved, markedly inequilateral. Umbones placed far forward, their anterior border continuous with anterior margin of valve. Anterior and posterior extremities rounded, ventral margin gently convex, postero-dorsal edge straight or almost so. A broad, shallow sinus runs ventrally from the umbones in anterior half of valves. Escutcheon and elongate lunule present. Umbonal ridge poorly developed. Valves concentrically sulcate. Rows of small tubercles present, especially on postero-dorsal area. Adductor muscle scars shallow, pallial sinus present, hinge simple, probably edentulous.

Wilkingia elliptica (Phillips)

Plate 71, figs. 1-6

Venus elliptica Phillips 1836, p. 209, pl. 5, fig. 7.

? *Posidonomya transversa* Portlock 1843, p. 745, pl. 38, fig. 9.

Allorisma sulcata King 1850, pl. 20, fig. 5.

EXPLANATION OF PLATE 71

- Figs. 1-6. *Wilkingia elliptica* (Phillips). All except figs. 3b and 4b are unretouched photographs, natural size. The specimens are in the Geological Survey and Museum, London. 1a, 14579, Redesdale, Northumberland, right valve, internal cast with part of original shell under umbo. 1b, Same specimen, dorsal view, showing lunule and elongate escutcheon. 2, Lectotype, reproduction of Phillips's original drawing of *Venus elliptica*, specimen lost. 3a, 14577, Redesdale, left valve, internal cast. 3b, Same specimen, part of pallial line and muscle scar as observed by author, drawn on photograph. 4a, 14586, Redesdale, right valve, internal cast. 4b, Same specimen, part of pallial line and muscle scar as observed by author, drawn on photograph. 5, 15823, Redesdale, right valve, internal cast of almost complete specimen. 6, 14582, Redesdale, left valve, internal cast showing rows of fine tubercles on postero-dorsal area.
- Fig. 7. *Edmondia sulcata* (Fleming). Left valve of specimen in Hancock Museum, Newcastle upon Tyne, to show different ornament and shape of anterior from *Wilkingia elliptica*, $\times 1$.
- Figs. 8-10. *Posidoniella* spp. 8, 9, *P. vetusta* J. de C. Sowerby, Carboniferous Limestone Series. 8, British Museum (Natural History) PL. 357, $\times 1$, Derbyshire. 9, PL. 803, $\times 1$, the lectotype, Castleton, Derbyshire. 10, *P. variabilis* Hind, Millstone Grit Series, Manchester Museum L. 10227, $\times 2$.
- Figs. 11, 12. *Posidonia obliquata* (Brown), Millstone Grit Series, Lower *Reticuloceras* age, $\times 2$.
- Figs. 13-15. *Caneyella* spp. 13, *C. richardsoni* Girty, reproduction of Girty 1909, pl. 4, fig. 1, Caney Shale, Oklahoma. 14, *C. membranacea* (M'Coy), $\times 1$, Carboniferous Limestone Series, Upper *Posidonia* age. 15, *C. rugata* (Jackson), Millstone Grit Series, Upper *Reticuloceras* age, $\times 2$.

Sanguinolites sulcatus M'Coy 1855, p. 507.

Myacites sulcata Salter 1861, pl. 1, fig. 28.

Allorisma sulcata Hind 1900, pp. 422-4, pl. 48, figs. 3-11.

Lectotype. Specimen figured by Phillips (1836, pl. 5, fig. 7) from Northumberland, lost.

Description. Medium-sized, elongate-oval, length about twice height, anterior and posterior extremities rounded. Equivalved, markedly inequilateral, slight posterior gape. Umbones placed far forward, prosogyrous, raised above dorsal margin, their anterior margin continuous as a straight line with the upper part of the anterior border of the valves. Lower part of anterior margin of valves rounded, passing into gently convex ventral margin. Posterior border rounded, dorsal margin posterior to umbones almost straight, turned upwards slightly at posterior end. Maximum convexity of valves in umbonal region. A poorly developed, but definite shallow depression runs from the umbones towards the ventral margin, increasing in width in this direction. Umbonal ridges poorly developed, running towards and fading out about half-way to postero-ventral angle. Between umbonal ridges and dorsal margin, valves slightly concave. Lunule elongate, lanceolate, extending from umbones to anterior extremity of valves. Escutcheon elongate, narrow and deep, extending from umbones almost to postero-dorsal angle. Valves marked by non-bifurcating, prominent concentric ribs and grooves which stop at margins of lunule and escutcheon. In the postero-dorsal area, close-set rows of numerous small tubercles radiate from the umbones. Shell thin. Anterior adductor muscle scar not definitely observed but probably small and situated near anterior extremity of valve. Posterior adductor scar irregularly rounded, moderately large and situated under dorsal margin near posterior end. Deep sinus in pallial line present, but only seen on exceptionally well-preserved specimens. Ligament external, hinge line not seen but probably edentulous.

Dimensions of figured specimens (in mm.). Figures followed by (E) are estimated from incomplete specimens.

	<i>Length</i>	<i>Height</i>	<i>Width</i>
14577 (Pl. 71, figs. 3 <i>a</i> , <i>b</i>)	44(E)	22	14
14579 (Pl. 71, figs. 1 <i>a</i> , <i>b</i>)	50(E)	27(E)	17.5
14582 (Pl. 71, fig. 6)	53(E)	27	18
14586 (Pl. 71, figs. 4 <i>a</i> , <i>b</i>)	33	17	11.5
15823 (Pl. 71, fig. 5)	42(E)	22	14
Lectotype, measured from Phillips's drawing (Pl. 71, fig. 2)	20	10.5	..

Discussion. The horizon and locality of the lectotype are not known, Phillips (1836, p. 209) giving only Northumberland as the locality. The specimen probably came from the old workings in the Redesdale Ironstone, of Lower Carboniferous age, Redesdale, Northumberland. King's figured specimen, and the specimens used here to describe the species, are from this locality. Although the postero-dorsal outline of Phillips's drawing is not typical of specimens here regarded as belonging to the same species, such an outline has been observed on specimens where this part of the shell is incomplete. A specimen from Fermanagh, crushed and incomplete, figured as *Posidonomya transversa* by Portlock (1843, pl. 38, fig. 9), may belong to the present species.

Much has been written concerning the presence of a pallial sinus in the species. King (1850, pl. 20, fig. 5) showed a sinus to be present, but M'Coy (1855, p. 276) denied that such a character existed, and placed the species in *Sanguinolites* (op. cit., p. 507). Hind (1896, p. 25) also doubted its presence, stating that the line was drawn in ink on King's figured specimen. Hind (1900, p. 424) later changed his opinion, claiming that a pallial sinus was present, and figured specimens showing the feature (1900, pl. 48, figs. 3, 4, 8). An examination of these specimens in the British Museum (Natural History) showed that the pallial line is drawn in pencil on two of the specimens, presumably as a guide to the artist, and is not obvious in the third specimen. As the issue still appeared to be in doubt, a collection of specimens which had never been figured was studied. Of the fourteen specimens examined, the writer is convinced that two of them show undoubted evidence of a pallial sinus. These are figured (Pl. 71, figs. 3a, 4a) as unretouched photographs and also (Pl. 71, figs. 3b, 4b) with the pallial sinus drawn in to show its position. The feature is only visible on very well-preserved specimens, and even then can only be seen satisfactorily under magnification.

Hind (1899, pp. 320-1; 1900, pp. 423-4) discussed the differences between the present species and *Edmondia sulcata* (Fleming) which bears a superficial resemblance to it. A specimen of the latter species is figured (Pl. 71, fig. 7) to show how the ribs on *E. sulcata* split into finer ones as they cross the centre of the valve, and how the outline in front of the umbones is concave, two points which easily distinguish it from *Wilkingia elliptica*. Further points of difference, although not always seen, are that *E. sulcata* has an entire pallial line and had well-developed internal cartilage plates. Although both species are elongate-oval with prominent concentric ribs, they probably occupied different ecological stations. *W. elliptica*, with its posterior gape and pallial sinus, was presumably a burrower and *E. sulcata* perhaps led a more active existence.

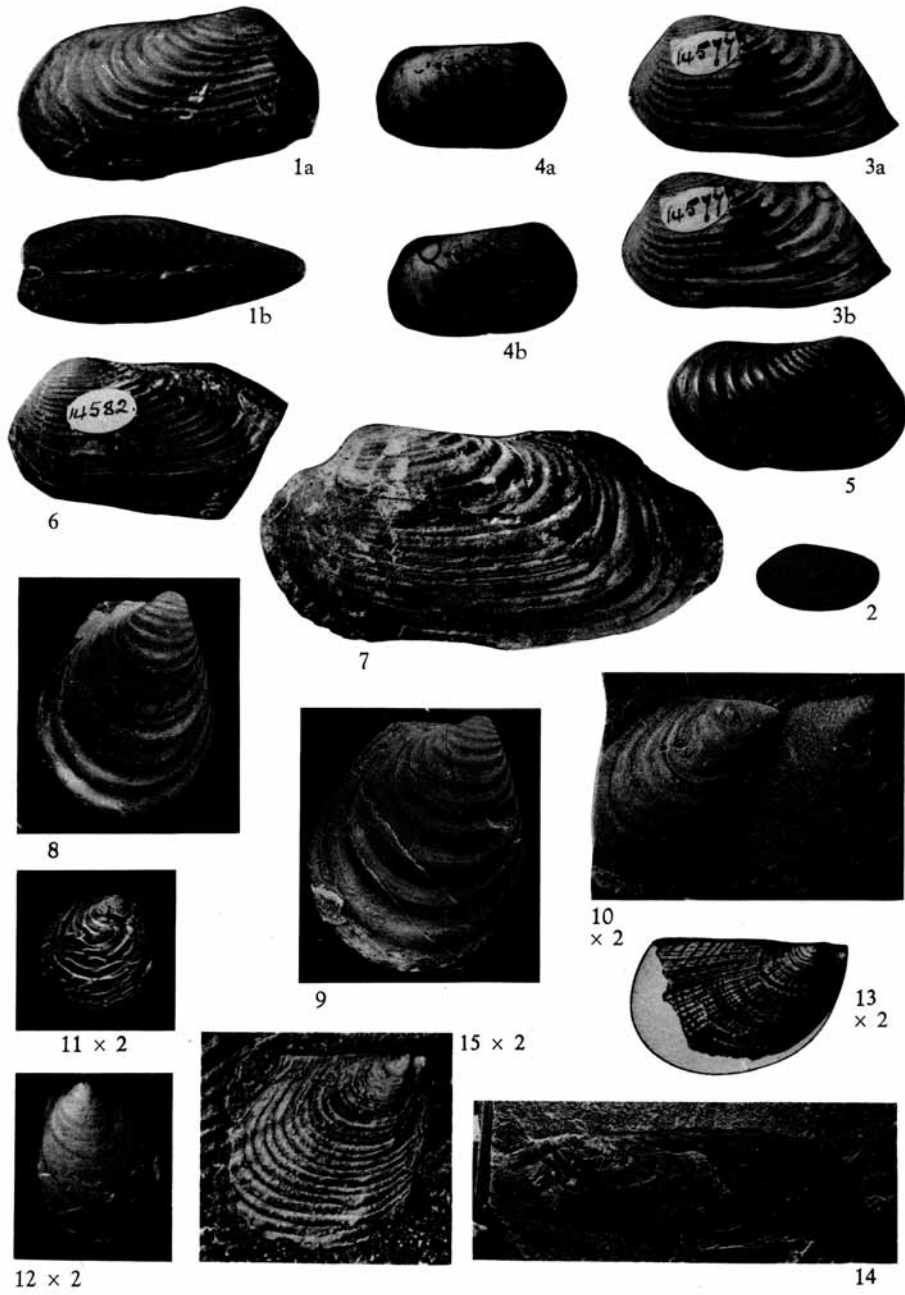
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