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THE LOWER MARINE FORMS OF *MYONIA*, WITH NOTES ON A PROPOSED NEW GENUS, *PACHYMYONIA*.

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(Plates li-lii.)

As will be seen by reference to the figures on Plates li and lii, the *Myonia* of the Lower Marine of New South Wales differs markedly from the species so common in the Upper Marine. The former as a whole are characterized by smaller size and a tendency to develop thicker valves as compared with the Upper Marine types. This was due probably to the fact that the larger thin-valved types described in the first part lived in shallower and smoother waters, in some cases probably sub-estuarine. The same remarks apply equally to the members of the *Chænomya* group occurring in the Upper and Lower Marines. The affinities of *Myonia* have been discussed by Mr. H. O. Fletcher.[1]

It has been considered advisable to make a new genus, *Pachymyonia*, for Etheridge's *Mœonia morrisii*.[2]

Pachymyonia, gen. nov.

Genotype *Mœonia morrisii* Eth. fil.

The new genus is proposed for the form described by R. Etheridge, Junr., as *Mœonia morrisii*,[3] of which he says: "A very remarkable variety of *Mœonia carinata*, or a quite new form." In my opinion this form should be regarded as distinct from *Myonia* as interpreted from Dana's and allied species.

Since description, several additional specimens from Allandale and Harper's Hill have been added to the collections, some testiferous.

Pachymyonia may be regarded as a *Myonia* in which the shell is relatively short, very inflated, equivalve, umbones almost touching, ligament heavy and posterior, shell relatively thick, with well-marked concentric ridges. Well-marked cinctural depression posterior to the carina. Very prominent rounded carina, posterior scar below the termination of the hinge margin, anterior scar marginal. The hinge line is not seen in any specimen examined, but will probably show a tooth mass.

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[1] Fletcher.—RECORDS OF AUSTR. MUSEUM, xix, 1932, p. .

[2] Etheridge.—RECORDS AUSTR. MUSEUM, xii, 9, 1919, p. 186, pl. xxviii, figs. 7-8.

[3] Etheridge.—*Loc. cit.*

This form differs essentially from the true *Myonia* in its more inflated form, the nature of the carina and the more massive shell.

Pachymyonia morrisii (Eth. fil.).

(Plate li, fig. 1.)

Mœonia morrisii Eth. fil., Rec. Aust. Mus., 1919, xii, pl. xxviii, figs. 7–8.

Dimensions.—

	F. 16978. (Type.)	F. 29990. (Pl. li, fig. 1.)
Length	71 mm.	76 mm.
Height	51 mm.	38 mm.
Carinal inflation	73 mm.	—

The specimen illustrated shows the thickness of the test and the ornamentation.

Locality.—Allandale, N.S.W.

Collection.—The Australian Museum, Sydney.

Pachymyonia etheridgei, sp. nov.

(Plate li, figs. 2–3; plate lii, fig. 6.)

Mœonia morrisii Eth. fil. var. ?, Rec. Aust. Mus., 1919, xii, pl. xxx, figs. 1 and 2.

This form differs from *P. morrisii* Eth. fil. in the greater length and the less accentuated depression anterior to the carina. The carina is less sinuous than in the other species. Portion of the large posterior ligament is shown in Plate li, fig. 3.

Dimensions.—

	F. 31083. (Pl. li, fig. 3.)	F. 59. (Pl. lii, fig. 6.)	F. 5734.	F. 29988.
Length	72 mm.	53 mm.*	55 mm.	72 mm.
Height	44 mm.	32 mm.	31 mm.	44 mm.
Carinal inflation	47 mm.	29 mm.	27 mm.	47 mm.

Observations.—F. 5734 is the specimen described and figured by Etheridge as *Mœonia morrisii* var. (?), which I consider should constitute a new species as hinted by him (*loc. cit.*, p. 187).

Localities.—N.S.W.: Harper's Hill (F. 31083); Farley (collected by J. Waterhouse, F. 59); railway cutting two miles beyond Lochinvar (F. 5734); Allandale (F. 29988), collected by Mr. C. F. Laseron.

Collection.—The Australian Museum, Sydney.

Myonia waterhousei, sp. nov.

(Plate lii, figs. 2–3.)

Shell very elongate, carinal ridge not acute, rounded and dying out half-way between umbo and posterior extremity. Anterior end not truncate, posterior sloping upwards slightly. Umbos twisted slightly posteriorly. Ornamented with broad growth ridges. Shell thin.

Dimensions.—

	F. 6589. (Pl. lii, fig. 3.)
Length	69 mm.
Height	38 mm.
Carinal inflation	32 mm.

* Imperfect.

Locality.—Farley, N.S.W. reg. nos. F. 6589 and F. 31084. Collected by Mr. John Waterhouse, M.A., to whom the species is dedicated.

Collection.—The Australian Museum, Sydney.

Myonia farleyensis, sp. nov.

(Plate li, figs. 5–6; plate lii, fig. 5.)

The form is close to *Pachymyonia etheridgei* so far as general contours are concerned, but differs in the absence of the marked depression exterior to the carina, the less accentuated carina, and the very evident thin-shelled condition.

The species is very abundant in the ferruginous sandstones of the Farley road cutting.

Dimensions.—

	D. 1748. (Pl. li, fig. 6.)	F. 2493.
Length	47 mm.	47 mm.
Height	32 mm.	33 mm.
Carinal inflation	29 mm.?	28 mm.?

Locality.—Farley (road cutting), N.S.W. D. 1748 collected by Prof. Sir T. W. E. David, F. 2493 collected by Mr. J. Waterhouse.

Collection.—Both specimens in Mining and Geological Museum.

Myonia davidis, sp. nov.

(Plate li, fig. 4; plate lii, fig. 4.)

Shell subquadrate, carina well marked, acute, posterior margin sloping upwards. Anterior rounded, slight depression anterior to carina.

Dimensions.—

	F. 2486.	F. 30060. (Pl. lii, fig. 4.)
Length	70 mm.	61 mm.(?)
Height	44 mm.	41 mm.
Carinal inflation	31 mm.	32 mm.

Locality.—Ravensfield, N.S.W. F. 2486, collected by Prof. Sir T. W. E. David; F. 30060, collected by Mr. C. F. Laseron.

Collection.—The Australian Museum (F. 30060) and the Mining and Geological Museum (F. 2486).

Myonia parallela, sp. nov.

(Plate lii, fig. 1.)

Shell elongate, anterior margin rounded, subacute, posterior truncate. Carina well marked, straight, not very acute. General contour sub-parallel. Lower margin only slightly curved.

Dimensions.—

	F. 2473.
Length	65 mm.
Height	28 mm.
Carinal inflation	10 mm.(?)

Locality.—Harper's Hill, N.S.W. Collected by Prof. Sir T. W. E. David.

Collection.—The Mining and Geological Museum.

EXPLANATION OF PLATES.

PLATE LI.

Fig. 1.—*Pachymyonia morrisii* Eth. fil. Partly testiferous specimen. Australian Museum reg. no. F.29990. Allandale, N.S.W.

Fig. 2.—*P. etheridgei,* sp. nov. Australian Museum, reg. no. F. 31083. Locality: Harper's Hill, N.S.W.

Fig. 3.—The same, showing portion of ligament.

Fig. 4.—*Myonia davidis,* sp. nov. Mining and Geological Museum, reg. no. F. 2486. Ravensfield, N.S.W.

Fig. 5.—*Myonia farleyensis,* sp. nov. Mining and Geological Museum, reg. no. F. 2493. Farley, N.S.W .

Fig. 6.—*Myonia farleyensis,* sp. nov. Mines Department, reg. no. D. 1478. Farley, N.S.W.

PLATE LII.

Fig. 1.—*Myonia parallela,* sp. nov. Mining and Geological Museum, reg. no. F. 2473. Harper's Hill, N.S.W.

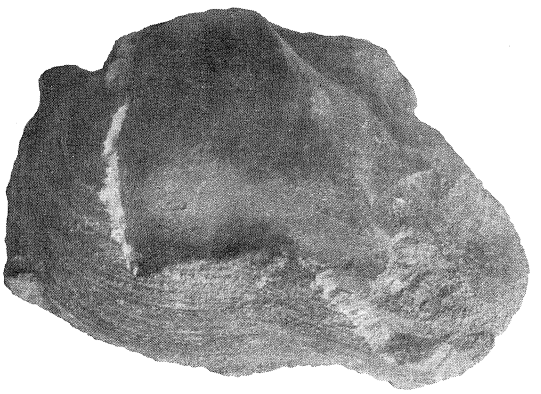
Fig. 2.—*M. waterhousei,* sp. nov. Harper's Hill, N.S.W.

Fig. 3.—*M. waterhousei,* sp. nov. Australian Museum, reg. no. F. 6589. Farley, N.S.W. Showing more accenuated carina.

Fig. 4.—*M. davidis,* sp. nov. Australian Museum, reg. no. F. 30060. Ravensfield, N.S.W.

Fig. 5.—*M. farleyensis,* sp. nov. Farley, N.S.W.

Fig. 6.—*Pachymyonia etheridgei,* sp. nov. Australian Museum, reg. no. F. 59. Farley, N.S.W.



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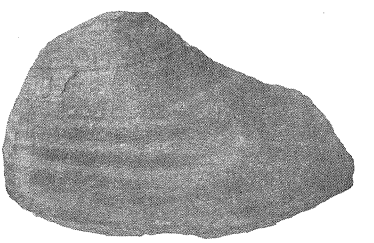

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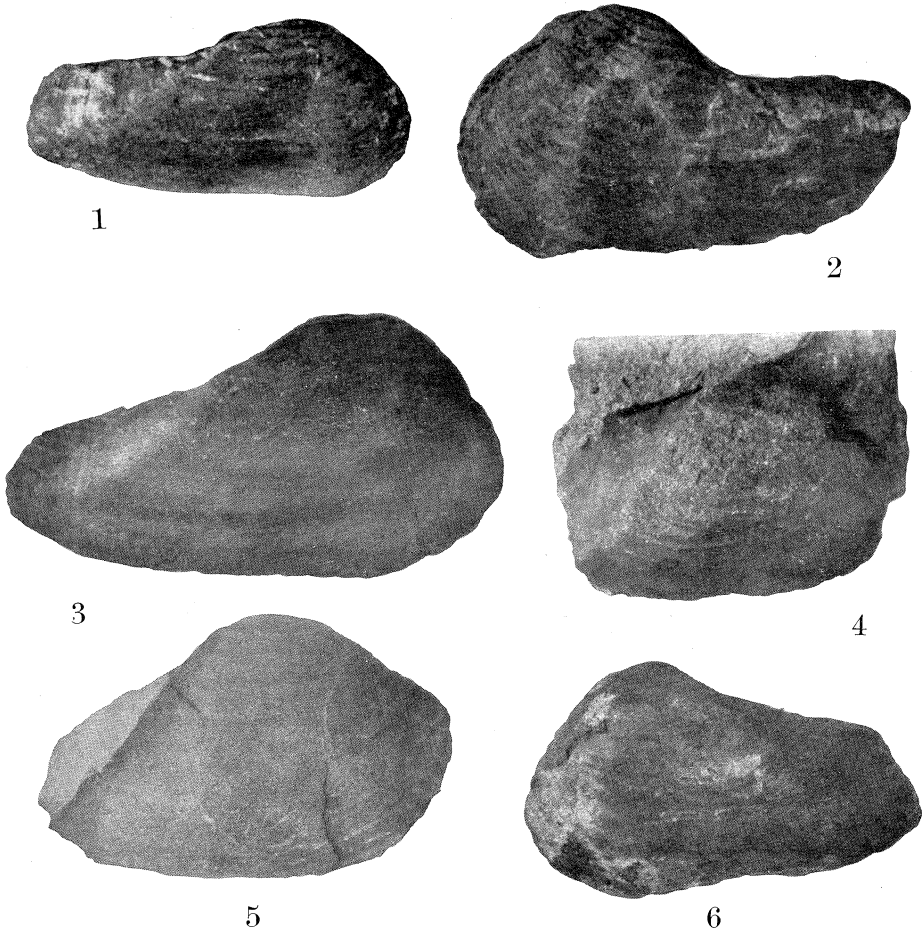
G. C. CLUTTON, photo.



1 2 3 4 5 6

G. C. CLUTTON, photo.