crurum of the right valve large, prominent and triangular, with its apex extending beyond the dorsal margin of the valve. Adductor muscle scar of right valve large, smooth and circular; white area outside the scar rather small, with a short narrow appendix hooked around the byssal plug. Byssal foramen very small, always filled by the plug, inclined at a low angle to the plane of the valve. Exterior end of plug very small (about 3mm in diameter) and situated near the apex of the resilial crurum; interior end small (about 5mm in diameter), vertically striated, and situated well below the resilial crurum. External sculpture consisting of fine, low, weak radial threads about 1mm apart over the outer part of the valve, with flat, smooth interspaces. Weak concentric growth lines occur irregularly. The most prominent feature is the large radial folds, which appear at about one-third of the shell length, and at maturity have an amplitude of about half the height of the shell. There is one rather broad postero-ventral fold to the left and one generally narrower but equally high antero-ventral fold to the right.

DIMENSIONS (in mm):

| | height | length |
|---|---|---|
| Holotype | 54.6 | 57.3 |
| Figured paratype | 55.8 | 61.2 |
| Incomplete paratype, Wharekuri | 82.1 | — |
| Paratype, Wendon | 36.3 | 46.9 |

Holotype (T.M. 3918), figured paratype (T.M. 3919) and nine paratypes in the collection of the New Zealand Geological Survey.

LOCALITIES: G.S. 9514, Wharekuri Greensand in borrow pit for Aviemore Dam, Waitaki Valley, South Canterbury, P. A. Maxwell, 1965, type, figured paratype and five paratypes; G.S. 1897, 120 chains north of Wendon Valley School, Otago, one paratype left valve; G.S. 476, Wharekuri, Waitaki Valley, South Canterbury, three paratypes.

This species differs from *P. incisurus* in the thinner and generally larger shell; in the small byssal foramen and greatly reduced external dimensions of the byssal plug; in the byssal muscle scar of the left valve being unstriated and smaller than the adductor scar; in the large, prominent resilial crurum having more clearly defined borders and a triangular shape; in the finer and more widely spaced radial riblets; and in having large radial folds in the shell. The sculpture is well developed over most or all of the right valve, showing that little or none of the shell was attached to the substratum; also, the byssal plug is so reduced as to appear to have not been functional in adult specimens. It therefore seems that this species lived unattached, lying on the substratum of muddy sand, as is the habit of *Placuna*. The folded shell resembles that of the Placunid *Ephippium,* and it seems likely that the folds served the same purpose as in that genus, i.e., to keep at least part of the mantle margins above the level of the substratum.

Apart from the three above occurrences, specimens have been seen from the following localities. A broken, bivalved shell from G.S. 6718, Oretangi Cliffs, Aotea Harbour (Whaingaroan, Lower Oligocene) collected by Dr D. Kear, resembles the topotype population closely but the radial ribs are somewhat coarser and are 1½ to 2mm apart. Also, it does not have the prominent radial folds and there is a small but definite attachment area near the umbo on the exterior of the right valve; the shell appears to have been attached to a hard substratum, whereas this was probably absent in the Wharekuri Greensand. Little can be done to assess these differences until more specimens are known from New Zealand Oligocene localities. Five poorly preserved single valves from G.S. 517, Motutara Bluff, Kawhia Harbour (Whaingaroan, Lower Oligocene; Aotea Sandstone, as at Oretangi Cliffs) are apparently identical to the specimens from Oretangi Cliffs. Three fragments and three small thin shells, the last three attached to each other, from G.S. 1846, Shell Gully, Chatton, near Gore, Southland (Duntroonian, Upper Oligocene) also appear to have the same characters as the shell from Oretangi Cliffs, although the adult characters are not known. Shells from the three latter localities are considered to fall within the limits of *Pododesmus maxwelli.*