

the west and extending to Java in the Eastern Archipelago, and thence to the Pacific northward to Japan. *Luidia hardwickii* is reputed to be from the Indian Ocean, but the exact locality is unknown.

EASTERN ARCHIPELAGO: Five species between the parallels of 20° N. and 10° S.

**Luidia longispina* and **Luidia aspera*, off the Philippine Islands, the latter extending to the north of New Guinea. **Luidia forficifer*, in the Arafura Sea. *Luidia maculata*, off Java, and extending into the Indian and Pacific Oceans. *Luidia chefuensis*, off Singapore.

PACIFIC: Eight species between the parallels of 40° N. and 20° S.

On the western side: **Luidia limbata*, *Luidia quinaria*, and *Luidia maculata*, off the coast of Japan, the last mentioned extending into the Eastern Archipelago and Indian Ocean.

On the eastern side: *Luidia californica* and *Luidia foliata*,¹ off the coast of California. *Luidia brevispina* and *Luidia columbiæ*, off the coast of Mexico, the former extending to the Sandwich Islands and the latter to Panama. *Luidia bellonæ*, extending from Panama to Peru as far south as Callao.

The species collected by the Challenger Expedition are indicated in the above list by an asterisk.

β. *Bathymetrical range:* Shallow water to 374 fathoms.

All the species are found in the Littoral zone, and four only pass into the Continental zone, viz.: *Luidia sarsii*, *Luidia elegans*, *Luidia convexiuscula*, and *Luidia barbadensis*. None occur in the Abyssal zone.

Greatest range of one species: *Luidia sarsii*, shallow water to 374 fathoms.

γ. *Nature of the Sea-bottom:* Generally sandy, or sandy mud; but unfortunately the definite character of the bottom inhabited by *Luidia* is recorded in very few cases. Of the forms collected by the Challenger, *Luidia aspera* and *Luidia forficifer* were both found on Green mud and Coral mud; and *Luidia longispina* on mud.

Luidia elegans and *Luidia barbadensis* are recorded as frequenting calcareous pebbles, the latter being also found on fine mud. *Luidia convexiuscula* is found on Volcanic sand, madreporic sand and broken shells, as well as on a hard bottom. *Luidia sarsii* is found on sand and coarse shell-sand.

¹ I am in great doubt as to whether this form can really be distinguished from *Luidia brevispina*.