mercury compounds deposited in soil are more readily available to humans and animals than previously anticipated, the consequent health hazard being magnified by the higher toxicity of methylmercury.

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New finding of the ancient primitive mollusc *Neopilina* in the Atlantic part of the Antarctic

The mollusc *Neopilina* (Monoplacophora) was first found 20 yr ago in the Peru-Chile Trench of the Pacific Ocean[1]. *Neopilina* has since been found in other places[2–4] including various areas of the Pacific, the northern Indian Ocean and the Atlantic part of the Antarctic. So far, no *Neopilina* has been encountered in the Atlantic Ocean proper, though it probably occurs there.

The first *Neopilina* found in Antarctic waters was an immature specimen of *N.(Neopilina)*. It was 2.3 mm long and 2.0 mm wide, with five pairs of gills[3]. It was taken from depths of 1,647 m to 2,044 m at the eastern slope of Burdwood Bank (54°43′ S, 55°30′ W).

Neopilina was found for the second time in the Antarctic during the eleventh biological cruise of the vessel Akademik Kurchatov (1971–1972). The bottom fauna was sampled by this expedition in the northern parts of the South Sandwich and South Orkney Trenches. One of the sections runs across the South Antilles basin (Scotia Sea) and the eastern slope of the Falkland shallow. Two deep sea trawlings were made in the small trench situated in the north-western part of the Scotia Sea. One living adult specimen of *Neopilina* was found on December 14, 1971, 56°29′ S, 50°51′ W. The depth was 4,664–5,630 m, and the bottom consisted of mud with sand and pebbles.

This specimen of *Neopilina (Neopilina)* was 19 mm long, 15 mm wide and 8.5 mm high. The mollusc was broken during trawling and the edges of its shell overlapped slightly behind, so its width is in fact a little greater (by 1–1.5 mm). The apex is shifted (as usually) to the front margin and hangs over it. The valve surface contains very fine and delicate but pronounced concentric folds. The radial striation is the finest and becomes visible only under magnification; five pairs of gills are well developed; the labial palpi have short marginal bordering.

It is quite possible that the small *Neopilina (Neopilina)* specimen found previously on Burdwood Bank[3] was a young form of the *Neopilina* we describe. The taxonomic position of the small mollusc is being investigated.

The bottom fauna found with our specimen was very rich and diverse, containing more than 20 groups of bottom invertebrates. There were several hundred holothurians (including *Elpidia*—the leading form of bottom fauna here), numerous Pourtalesiidae (irregular deep sea urchins) and Ophiuroidea, rich population of Polychaeta (Aphroditidae, Flabelligeridae and others), various Spongia, Actinia, Pogonophora, Amphipoda and Isopoda. Molluscs (apart from *Neopilina*) were represented by Gastropoda, Prosobranchia and Opisthobranchia and Bivalvia (*Cyclopecten* and *Neilo*).

It therefore seems that the food and conditions are quite adequate for recent *Neopilina* and other detritus-feeding bottom invertebrates in the South Atlantic eutrophic regions. The hard substratum to which *Neopilina* adheres (stones, manganese nodules or pebbles) is dispersed in good quantity in the Antarctic region by the action of floating ice. The mucus bacterial film or organic detritus in various forms usually existing on the surface of such hard substratum is used by *Neopilina* as food. They can easily scrape it off with the long thin denticles of brush-like parts of their radula. Therefore the subantarctic regions of the Atlantic Ocean are very favourable for them, especially the areas influenced by the temperate warm waters of the Falkland current washing the slopes of Falkland shallow water zone.

The existence of well-dispersed hard substratum, usually covered with bacterial film can explain the existence of *Neopilina* forms even in parts of the ocean very poor in food and bottom fauna; for example *Neopilina oligotropha* in the North Pacific[4].

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Effects of stable chlorine-containing organics on aquatic environments

During 1962, approximately 60,000 tons of chlorine were added to the effluents of sewage treatment plants in the United States[1] and subsequently released to surface waters. By 1970, it was estimated that 100,000 tons of chlorine were added annually, and the quantity will continue to increase as municipalities are required[2] to provide at least secondary treatment for sewage by July 1, 1977 (ref. 3). Principal reactions of chlorine in natural waters, besides hydrolysis, are with ammonia and organic amines[4,5]. Reactive chlorine residuals, for example, hypochlorites, inorganic and organic chloramines, are characterised by reactive chlorine which would decompose or be consumed in various chemical reactions[5]. Jolley[3] has identified seventeen stable chlorine-containing organic compounds at low $\mu g\ l^{-1}$ concentrations in chlorine-treated sewage effluent. The persistent nature of these compounds, which are characterised by chemically stable or inert C–Cl bonds, suggests potential for their accumulation in receiving surface waters[6,7].