SPHAEROMA WALKERI STEBBING (ISOPODA, SPHAEROMATIDAE) 
INTRODUCED INTO AND ESTABLISHED IN HONG KONG

BY

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INTRODUCTION

Recent fouling studies have confirmed the occurrence of Sphaeroma walkeri Stebbing, 1905, in Hong Kong (Vrijmoed, 1975; Fung & Morton, 1976; Hon, unpubl.; Huang & Mak, 1982; Mak, unpubl.). S. walkeri is a warm-water, marine thigmotactic isopod indigenous to the northern Indian Ocean and has spread synanthropically via ships to 3 port systems in the Old World (Suez-Eastern Mediterranean, South Africa-Mozambique, and Australia), and to 4 New World port systems (Brazil, Florida-Caribbean, Hawaii, and California), all of the latter during or since World War II (Carlton & Iverson, 1981). Its natural distribution in Austro-Asian waters is allegedly restricted to Indian coasts and the Australian eastern seaboard. The occurrence of S. walkeri in Hong Kong thus represents a significant but hitherto unreported record, closing a South China Sea gap in its pantropical distribution. This paper examines the distribution of S. walkeri in Hong Kong and discusses the probable time of its introduction.

MATERIALS AND METHODS

During April 1980 and from April to September 1983, 253 samples (30 x 30 cm, sometimes larger) were scraped from the intertidal zones of 28 concrete piers, 22 ships' hulls, and the submerged parts of 12 rafts, 12 buoys, 6 mariculture cages, and 53 experimental panels from various localities throughout Hong Kong. The dominant taxa in the samples were also recorded.

Four additional samples were collected on 8 August 1983, when the vessel dry-docked, from the hull of M.V. "Gu Lang Yu" (6100 tonnes) which shut-
tiles weekly between Xiamen (Amoy), People's Republic of China, and Hong Kong. Another 4 samples were collected from Blake Pier in Victoria Harbour on 24 August 1983.

In the laboratory, the samples were weighed and sorted to recover all specimens of *S. walkeri* and their numbers recorded. Density was computed as the number of specimens extrapolated to 1 m².

The M.V. "Gu Lang Yu" and Blake Pier specimens were sexed, males bearing but females lacking paired needle-like appendices on the endopodites of the second pleopods. Ovigerous females were those bearing eggs, embryos, young, or marsupia. Body-length was measured to the nearest 1 mm from telson-tip to the anterior cephalon border.

### Table I

**The density of *Sphaeroma walkeri* (no./m²) in various fouling communities**

<table>
<thead>
<tr>
<th>Objects</th>
<th>No. of species</th>
<th>Fouling communities</th>
<th>S. walkeri density (No/m²)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central concrete pier (Mid tidal zone)</td>
<td>27</td>
<td>2.1</td>
<td>2,844</td>
</tr>
<tr>
<td>North Point concrete pier (Low tidal zone)</td>
<td>36</td>
<td>13.8</td>
<td>1,381</td>
</tr>
<tr>
<td>Tai Tam buoy</td>
<td>16</td>
<td>4.2</td>
<td>2,498</td>
</tr>
<tr>
<td>Harbour Ferry</td>
<td>12</td>
<td>9.9</td>
<td>11,200</td>
</tr>
<tr>
<td>Hebe Haven raft</td>
<td>28</td>
<td>7.3</td>
<td>2,850</td>
</tr>
<tr>
<td>Hebe Haven mariculture cages</td>
<td>25</td>
<td>21.5</td>
<td>12,521</td>
</tr>
</tbody>
</table>

### RESULTS

Habitat. — A total of 8805 specimens was collected from intertidal areas and the shallow sublittoral fringe. High densities were exclusively recorded from balanoid-dominated communities (table I). The isopods were mostly found inside empty barnacle shells and the labyrinthine galleries and crevices of fouling assemblages. *S. walkeri* has never been found on newly defouled or clean surfaces.

Six categories of marine objects were sampled and most yielded isopods, resulting in a high percentage occurrence (table II). Most of the mariculture cages were sparsely fouled because of regular cleaning thereby accounting for the seemingly low percentage occurrence on these objects. A high density of 12,521/m² was recorded from an abandoned and heavily fouled mariculture cage (table I).