ECHINOIDEA
**Dendraster excentricus (Esch)**

**CLASS** Echinoidea

**ORDER**

**FAMILY**

### BATHY ZONE

*shore*

*(SHORE, PILING, DREDGED, PELAGIC, ETC.)*

### OBVIOUS CHARACTERS

<table>
<thead>
<tr>
<th>EXPOSURE TO SURF (OR, IF STATED, TO TIDAL CURRENTS)</th>
<th>TIDAL HORIZON (OR DEPTH IF DREDGED)</th>
<th>TYPE OF BOTTOM</th>
</tr>
</thead>
<tbody>
<tr>
<td>(EXPOSED, SEMI-PROTECTED, SHELTERED)</td>
<td>(HIGH, MEDIUM, LOW, EXTREME LOW, DREDGED)</td>
<td>(REEF, ROCKS, BOULDERS, GRAVEL, SAND, MUD)</td>
</tr>
</tbody>
</table>

### POSITION:

*(ON OR UNDER ROCKS, WEED, IN SUBSTRATUM, ETC.)*

### VEGETATION:

*(BARE, ROCK-WEED, KELP, EEL GRASS, ETC.)*

### ASSOCIATES, COMMENSALS:

### BREEDING SEASON, COLOR IN LIFE, ETC.:
<table>
<thead>
<tr>
<th>Date</th>
<th>Region, Station, Position, Etc.</th>
<th>Bathymetric Zone</th>
<th>Depth or Tidal Horizon</th>
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<th>Number Taken or Observed</th>
<th>Ident. (or &quot;Field&quot;)</th>
</tr>
</thead>
<tbody>
<tr>
<td>19Nov'30</td>
<td>Balboa, Renilla-Amphioxus sandbar</td>
<td>shore</td>
<td>low</td>
<td>prot</td>
<td>sand</td>
<td></td>
<td>?</td>
</tr>
<tr>
<td>17Dec</td>
<td>Mudfl E of CIT Station, Corona delMar</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
<td>mud</td>
<td></td>
<td>?</td>
</tr>
</tbody>
</table>

IF ADDITIONAL SPACE IS NEEDED, USE UNPRINTED 4 X 6 WHITE CARDS
**Lytechinus pictus (Verrill)**

**Class:** Echinodermata

**Name:** shore

**Bathy, Zone:**
- (Shore, Piling, Dredged, Pelagic, etc.)

**Obvious Characters:**

<table>
<thead>
<tr>
<th>Exposure to Surf (Or, if Stated, to Tidal Currents)</th>
<th>Tidal Horizon (Or Depth if Dredged)</th>
<th>Type of Bottom</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Exposed, Semi-Protected, Sheltered)</td>
<td>(High, Medium, Low, Extreme Low, Dredged)</td>
<td>(Reef, Rocks, Boulders, Gravel, Sand, Mud)</td>
</tr>
</tbody>
</table>

**Summary of Observational Data:**

**Position:**
- (On or Under Rocks, Weed, in Substratum, Etc.)

**Vegetation:**
- (Bare, Rock-Weed, Kelp, Eel Grass, etc.)

**Associates, Commensals:**

**Breeding Season, Color in Life, Etc.:**

**Pt. Conception to Cedros Id.**

**PBL Survey Card—Gray**
<table>
<thead>
<tr>
<th>Date</th>
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<th>Ident. (or “Field”)</th>
</tr>
</thead>
<tbody>
<tr>
<td>10Feb'30</td>
<td>Newport Bay, rky-flats off Corona del Mar</td>
<td>shore</td>
<td>low</td>
<td>protot</td>
<td>rky</td>
<td>5-6</td>
<td>?</td>
</tr>
</tbody>
</table>
Strongylocentrotus purpuratus  

**CLASS** Echinoidea

**NAME**

**BATHY, ZONE** shore

(Shore, Piling, Dredged, Pelagic, etc.)

**OBVIOUS CHARACTERS**

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**POSITION:**

(On or under rocks, weed, in substratum, etc.)

**VEGETATION:**

(Bare, Rock-weed, Kelp, Eel grass, etc.)

**ASSOCIATES, COMMENSALS:**

**BREEDING SEASON, COLOR IN LIFE, ETC.**

PBL SURVEY CARD—GRAY

---

**TYPE OF BOTTOM**

(Reef, Rocks, Boulders, Gravel, Sand, Mud)

**SUMMARY OF OBSERVATIONAL DATA**

**EXPOSURE TO SURF (OR, IF STATED, TO TIDAL CURRENTS)**

(Exposed, Semi-protected, Sheltered)

**TIDAL HORIZON (OR DEPTH IF DREDGED)**

(High, Medium, Low, Extreme Low, Dredged)

PT. CONCEPTION TO CEDROS ID.
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<tr>
<td>18 Nov '30</td>
<td>Balboa jetty. Many below tide</td>
<td>shore</td>
<td>low</td>
<td>semi</td>
<td>rky</td>
<td>VP</td>
<td>field</td>
</tr>
<tr>
<td>17 Dec '30</td>
<td>Rks on mud E of CIT station, Corona del Mar</td>
<td>&quot;</td>
<td>&quot;</td>
<td>prot</td>
<td>&quot;</td>
<td>&quot;</td>
<td>&quot;</td>
</tr>
</tbody>
</table>
**Lovenia cordiformis A Agassiz**

**NAME**

**CLASS**

**Echinoidea**

**ORDER**

**FAMILY**

**BATHY, ZONE**

(SHORE, PILING, DREDGED, PELAGIC, ETC.)

**OBVIOUS CHARACTERS**

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PBL SURVEY CARD—GRAY

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<td>19Nov'30</td>
<td>SandBar, Newport Bay, with Renilla, Amphioxus, Portunus, and Randallia</td>
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IF ADDITIONAL SPACE IS NEEDED, USE UNPRINTED 4 X 6 WHITE CARDS
Lytechinus anamesus AAg & HLClark

**NAME**

**CLASS** Echinoidea

**ORDER**

**FAMILY**

**BATHY, ZONE** Shore

(SHORE, PILING, DREDGED, PELAGIC, ETC.)

**OBVIOUS CHARACTERS**

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<tr>
<td>136.2</td>
<td>Estero de Punta Banda. Atchd to eel grass at surface</td>
<td>shore low prot sand</td>
<td>USNM 113295</td>
<td></td>
<td></td>
<td></td>
<td></td>
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