

June 14, 2000

F/SWC2:RLH:FLF
CR0006-1.RLH

CRUISE REPORT

VESSEL: *Townsend Cromwell*, Cruise 00-06 (TC-256)

CRUISE PERIOD: 27-31 May 2000

AREA OF OPERATION: Kona coast off the Island of Hawaii (Fig. 1)

TYPE OF OPERATION: Daylight operations consisted of larval swordfish surface tows with a 6-ft Issacs-Kidd (IK) trawl and 1-m ring net targeting coastal surface slicks. Night operations consisted of mid-water IK trawls, night-light stations, a MOCNESS tow and video-camera drop, and CTD casts.

ITINERARY:

- 27 May Embarked Robert Humphreys, Bruce Mundy, Kelly Benoit-Bird, Christopher Bird, David Cripe, and John O'Sullivan. Departed Snug Harbor at 1300 and proceeded to Kailua-Kona, Island of Hawaii.
- 28 May Arrived on site by 0600 and began conducting daylight neustonic larval swordfish tows through surface slicks using the 6-ft IK trawl and 1-m ring net. At 0830, embarked Andrew West from Kailua-Kona pier and continued larval swordfish tows. At nightfall, commenced nightly operations that included mid-water IK trawls, a MOCNESS tow and video-camera drop, night-light station, and CTD casts.
- 29-30 May Continued daily schedule of daylight surface IK trawls for swordfish larvae and nighttime MOCNESS, mid-water IK, video-camera drop, night-light, and CTD operations.
- 30 May Ended daylight surface tows at 1530. Transited to Kailua-Kona, disembarked West at Kailua-Kona pier, then proceeded back to Snug Harbor, Honolulu.

31 May Arrived Snug Harbor, Honolulu at 0900. Disembarked Humphreys, Mundy, Benoit-Bird, Bird, Cripe, and O'Sullivan; end of cruise.

MISSIONS AND RESULTS:

- A. Collect larval swordfish specimens associated with surface slicks along the Kona coast of Hawaii.

A total of 28 daylight one-hour surface IK trawls and 1 half-hour 1-m ring net tow were conducted targeting coastal surface slicks (when available) between Kailua-Kona to the north and Milolii to the south. Twenty-nine swordfish larvae were captured during daylight IK trawls and none from the 1-m ring net tow. An additional 2 swordfish larvae were captured during a nighttime mid-water IK trawl yielding a total of 31 swordfish larvae captured during this cruise. A total of 57 unidentified istiophorid larvae were also collected. A number of other species of fishes, primarily larval and juvenile stages of pelagic fish species, were incidentally captured. Tows were conducted primarily at a speed of 3.5 knots.

- B. Collect vertically integrated and stratified samples via mid-water IK trawls and MOCNESS tows, respectively, of the mesopelagic boundary community during night hours.

A total of 24 night mid-water oblique IK trawls were conducted to capture species members of the mesopelagic boundary community. Twenty-six target specimens and ten non-target specimens were mounted within a vertical water tank at various orientations and their acoustical target strengths measured with a modified bottom-mounted echosounder.

An electronic sensor failure in the MOCNESS system during the first deployment curtailed any further MOCNESS operations during the cruise.

- C. Conduct nighttime CTD casts to characterize the physical environment of the mesopelagic boundary community.

A single CTD cast using the SEACAT system was conducted to a depth of 500 m prior to the subsequently aborted MOCNESS station.

- D. Conduct drop video-camera cast to visualize members of the mesopelagic boundary community.

One drop video-camera station was conducted at approximately 40 m depth and it recorded numerous myctophids and other possible mesopelagic boundary community members.

- E. Collect live specimens of pelagic juveniles retrieved in good condition from neustonic tows and nightlight dip-net sampling for return to Monterey Bay Aquarium.

Live specimens collected from neustonic tows and kept alive in small holding containers within the port foredeck baitwell were juvenile specimens of the Portuguese man-of-war fish (*Nomeus gronovii*), mahimahi (*Coryphaena hippurus*), broomtail filefish (*Alutera scripta*), boxfish (*Lactoria* sp.), sargassum fish (*Histrion histrio*), pilotfish (*Naucrates ductator*), and speckled driftfish (*Psenes cyanophrys*). Of these species collected, only two specimens of *Alutera scripta* survived the cruise for transport to Monterey Bay Aquarium. A juvenile (~30 cm length) billfish (possibly a shortbill spearfish, *Tetrapterus angustirostris*) was successfully dipnetted under a nightlight but it immediately escaped through an unmeshed drain pipe in the portside baitwell.

**SCIENTIFIC
PERSONNEL:**

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Attachments