

# R.V. FRANKLIN

## NATIONAL FACILITY OCEANOGRAPHIC RESEARCH VESSEL

### RESEARCH SUMMARY

#### *RV FRANKLIN*

FR 7/88

#### *CIDARIS II*

#### Itinerary

Sailed Townsville 27 August 1988 1200 hrs  
Arrived Townsville 12 September 1988 1045 hrs

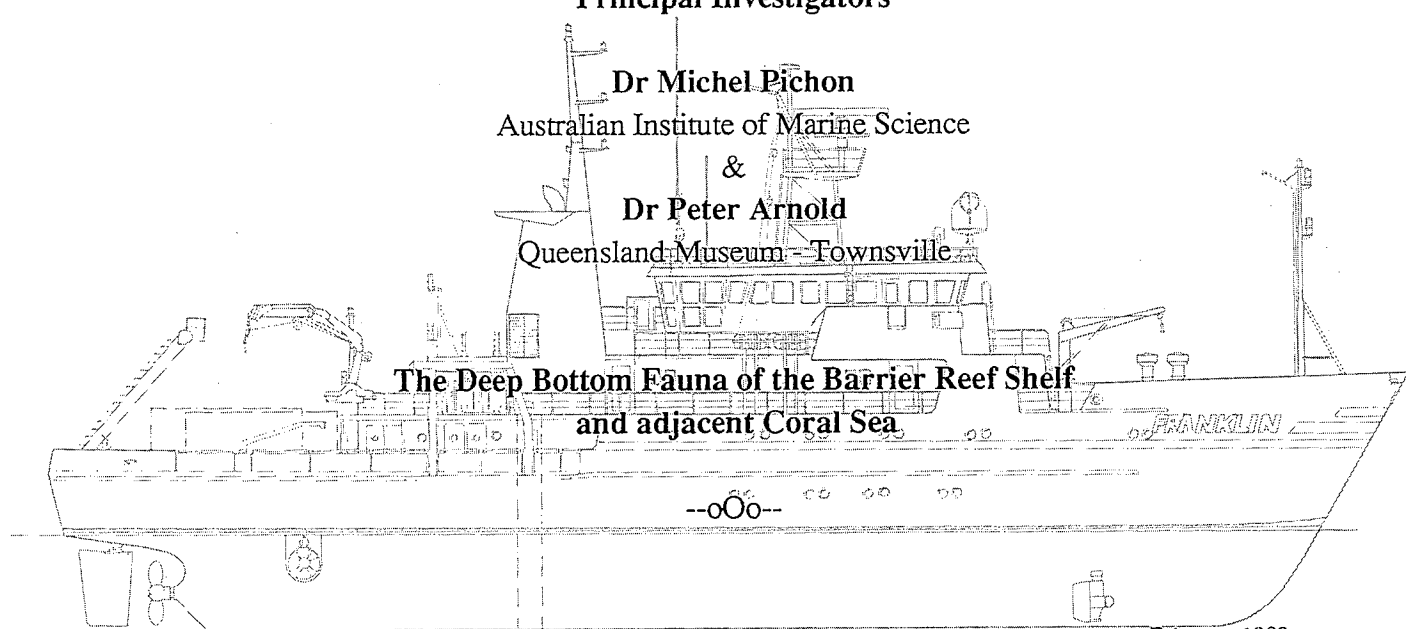
#### Principal Investigators

Dr Michel Pichon  
Australian Institute of Marine Science

&

Dr Peter Arnold  
Queensland Museum - Townsville

**The Deep Bottom Fauna of the Barrier Reef Shelf  
and adjacent Coral Sea**



February 1989

For further information contact

ORV Operations Manager  
c/- CSIRO Division of Oceanography  
GPO Box 1538, Hobart, Tas. 7001  
Telephone (002) 20 6222  
Telex AA 57182



R.V. FRANKLIN IS OWNED AND OPERATED BY CSIRO

**CRUISE SUMMARY**

FR 07/88

**"CIDARIS II"****Itinerary**

Depart Townsville 12.00 hours 27 August 1988

Arrive Townsville 10.45 hours 12 September 1988

**Scientific Programme**

- . Inventory of the deep sea bottom fauna of the bathyal and upper abyssal environment.
- . Depth distribution of micro, meio and macrobenthos and definition of the major benthic assemblages.
- . Distribution of deep sea benthic fauna as a function of sediment characteristic and organic input.
- . Comparison with the fauna of the Townsville trough ("CIDARIS I").

**Principal Investigators**

Dr. M. Pichon, Australian Institute of Marine Science.

Dr. P. Arnold, Queensland Museum: Townsville Branch.

**Results**

Sampling was by means of Smith MacIntyre Grab, Dredges, Sledge and Beam Trawl. Grab sampling was successfully carried out down to 4000 m in the Queensland Trench, using the hydrographic winch on starboard.

Beam Trawl was successfully deployed at a depth of 3200m, which was the maximum allowed by the length of warp on the main winch. All sampling instruments performed satisfactorily and the catch (invertebrate and fishes) were as expected.

No dredge or trawl samples were performed below 3200 m on account of warp length limitations and no sampling (except limited grabbing) could be carried out on the continental slope as a result of very rough weather and the close proximity of coral reefs

25 Stations were sampled at depth ranging between 400m and 4000m. Number of operations per instrument is as follows:-

Grab : 24  
Dredge : 6  
Sledge : 10  
Beam Trawl : 20

On account of the generally swelly sea surface conditions sediment was washed away (except for grab samples) during the hauling-in phase and very little sediment sorting was required on deck.

### Cruise Narrative

R.V. Franklin sailed from Townsville at 1200 hours on 27 August 1988, heading north in the navigation channel, inside the reefs. Reefs were cleared through Grafton Passage, off Cairns. The first 3 stations were in the northern part of the "Townsville trough" and represent a follow-up of stations previously sampled during "CIDARIS I" (FR 03/86).

On 29 August winds from the SE to ESE increased in speed to 35 knots and over, with peaks to 45 knots. Operations are suspended at 13-30 hours until 30th August at 12-15 hours. Winds decrease to 25 knots in the afternoon but the sea remains swelly. On 31st August wind speed rises again above 30 knots and remains high until 2nd September. Only one sampling with beam trawl could be performed on 1st September. The deepest stations are reached on the evening of 3rd September and sampled until 5th September without particular difficulty.

On 6th September the beam trawl gets hooked up on the bottom. The tensiometer chart recorder indicates a sharp surge in warp tension. We haul in, and this reveals that the warp broke. Approximately 900 m of warp and the trawl are lost. As the beam trawl was equipped with a 0.9T weak shackle on one side, and conclude that a weak spot existed in the warp presumably are a result of a former kink. Some hard grounds are also encountered on the western side of Osprey Reef but sampling proceeds without damage to the gear.

On 8th September evening wind is gusting again up to 35-40 knots and we sail slowly towards the slope stations, off Ribbon Reef. Some grabbing and dredging is carried out on the 9th and 10 September but most slope stations off Yonge have to be abandoned, and replaced by the trawling on the smooth seabed beyond the bottom on the slope. Operations are completed at 02-30 hours on 11th September and we sail towards 1 - 1/2 mile opening to enter the G.B.R. lagoon and reach the navigation channel near Lizard Island.

### Summary

Objectives defined in the cruise plan could not be fully achieved on account of:-

- (a) Rough weather which did not allow sampling on the continental slope. The latter is particularly steep in the area investigated, and the proximity of reefs along the shelf break rendered sampling in rough weather impossible.
- (b) Insufficient length of warp on the main winch. Only 4250 m were available at the beginning on the cruise and this length did not allow sampling below 3200 m using dredge, sledge or beam trawl. The proposed deeper station had to be dropped.

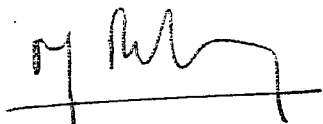
(In addition time slot to bad weather is approximately 2 1/2 days).

An excellent depth series of grab samples was obtained and micro- and meiofauna aspects of the investigations were successful. Macrofauna collected by dredge, sledge and beam trawl represents an excellent sample of the bathyal and upper abyssal benthic fauna. Preliminary sorting indicates that a number of specimens belong to new or little

known species. More importantly excellent data were obtained on changes in fauna assemblages with depth in particular with the nature of the sediment (largely composed of Globigerina ooze, contrasting with the dominance of Pteropod ooze found during "CIDARIS I"), input of reef-derived material (in the vicinity of Osprey Reef) and organic matter contents.

#### Personnel

M. Pichon, A.I.M.S., Chief Scientist  
D. Alongi, A.I.M.S.  
O. Dalhaus, A.I.M.S.  
C. Fabricius, A.I.M.S.  
P. Arnold, Queensland Museum: Townsville Branch  
L. Marsh, Western Australian Museum  
T. Ward, James Cook University  
J. Baxter, James Cook University  
B. Richer de Forges, ORSTOM Noumea  
J. Peterson, CSIRO Cruise Manager  
E. Madsen, CSIRO



M. Pichon  
Chief Scientist

DEPUTY:Summary-P