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PUERTO RICO MARINE GEOLOGY PROJECT

#76017

Cruise Report: Research Vessel Jean A. and small boats, bottom-sampling and scuba diving, west half north shelf of Puerto Rico; S. W. corner of Puerto Rico; and near Vieques I., P. R.

Staff: Rafael W. Rodriguez (Chief Scientist), José R. Muñiz, Nelson Espinell, David Bush, Luis O. Fernandez, J. V. A. Trumbull

Ship: R/V Jean A., 65-foot twin screw steel diesel; 17-foot McKee, 10.5-foot Zodiac.

Time: 11 ship days during 2-18 June and 19-21 July 1976: North shelf  
7 ship days during 27 June - 9 July 1976: SW corner of Puerto Rico  
2 ship days 28-29 July 1976: Vieques Island, P. R.  
21 ship days total

Objectives: 1. West half north shelf: Earlier project work off mouth of Rio de la Plata indicated modern sediment deposition on shelf. High-resolution reflection seismics over much of west half north shelf (Done by Western Geophysical for P. R. Government reactor request) showed similar lenses off major rivers. Bottom-sample transects through this area were needed and made. Also, west-most 10 miles of north shelf contains important offshore sand deposit, which was thoroughly sampled. Some scuba obs off Rio de la Plata to see if hurricane-deposited surface mud layer gone (it was). This is Bush MS thesis area.

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2. Sand-wave area near SW corner of P. R. :  
Scuba obs and sampling, and setting of stakes needed to determine transport of sand. This is Fernandez MS thesis area.

3. Escolla de Arenas, Vieques, P. R. :  
Preliminary bottom-sampling and diving obs. Needed for initial characterization of large sand deposit, its setting and dynamics. Potential graduate thesis area for Rafael Rodriguez.

Equipment: Shipek and Van Veen bottom-samplers; Secchi disc; forel bottles; radar, horizontal sextant, and transit/plane-table-alidade/27 MH<sub>z</sub> voice radio navigation techniques; SCUBA gear.

Results & Summary: 1) West half north coast: Total 171 bottom samples on transects across Recent shelf sediments off river mouths and relicts sediment samples between. Sampling supported by SCUBA obs.

Also good reconnaissance sample coverage of major offshore sand deposit, Isabella area.

2) Sand-wave area near SW corner P.R.: Crestless sand waves observed by SCUBA; stakes set and surveyed in to measure sediment transport.

3) Escollo de Arenas, Vieques Island: Reconnaissance sampling of large offshore sand body and environs; underwater recco. observation of extremely dynamic sand transport.