

# Scotia Arc Tectonics Project, 1978-79

I. W. D. DALZIEL, R. B. ALLEN, D. L. ELTHON,  
R. D. FORSYTHE, E. P. NELSON, T. J. WILSON, and  
M. A. WINSLOW

*Lamont-Doherty Geological Observatory of Columbia University  
Palisades, New York 10964*

From May 1978 to May 1979, geologists from Lamont-Doherty Geological Observatory continued their fieldwork on selected regional problems within the Patagonian and Fuegian cordilleras of the southern Andes.

Working on the Atlantic side of the cordillera, Terry Wilson, accompanied by a student from the University of Chile, Santiago, initiated a structural program of investigation within the Cretaceous-to-Tertiary foreland

fold and thrust belt in the Ultima Esperanza region. In addition, final reports were being completed on fieldwork conducted by Margaret Winslow during the past four years in the foreland terranes of Peninsula Brunswick and northern Tierra del Fuego.

Within the principal cordillera, field studies were completed by two working groups and another field project was under way. On the *r/v Hero* cruise 78-2, Eric Nelson, accompanied by Ian Dalziel and Ian Ridley (Lamont-Doherty Geological Observatory), A. Geoff Milnes (the Swiss Federal Institute), and Constantino Mpodozis (University of Chile), Luis Oviedo, (University of Concepcion), and Ricardo Guzman (Chilean Institute of Geological Investigations) completed the detailed structural field investigation of Cordillera Darwin started with the *r/v Hero* cruise 77-4 (Nelson et al., 1977; Nelson, Dalziel, and Milnes, 1980; Nelson, Dalziel, and Ridley, 1979).

Richardson Allen, working in the canals to the west of Puerto Natales on the structural evolution of the Cretaceous ophiolitic terranes, completed two months of fieldwork and subsequently continuing this study with

R/V *Hero* cruise 79-4. Preliminary results of this work are being prepared (Forsythe and Allen, 1979).

Also with cruise 79-4, Don Elthon continued petrologic and geochemical sampling of the ophiolitic complexes to further our understanding of the igneous and metamorphic evolution of the rocks of the so-called fossil marginal basin.

Within the remote outer Pacific perimeter of the canals, Randall Forsythe expected to use cruise 79-5 to investigate the north and south continuations of the pre-Upper Jurassic basement assemblages that were studied in previous years within the Madre de Dios Archipelago (Forsythe and Mpodozis, 1979a; Forsythe and Mpodozis, 1979b; Forsythe, 1978).

Laboratory investigations and analysis of field data associated with all of the above field projects, as well as with previous field seasons in both Antarctica and the Andes, are continuing at Lamont-Doherty Geological Observatory.

This work has been supported by National Science Foundation grant DPP 74-21415.

#### References

Forsythe, R. D. 1978. Geologic reconnaissance of the Pre-Late

Jurassic Basement: Patagonian Andes. *Antarctic Journal of the United States*, 13(4): 10-12.

Forsythe, R. D., and R. B. Allen. In press. The Basement of Peninsula Staines, Region XII, Province of Ultima Esperanza, Chile. II Congreso Geológico Chileno, August 6-11, 1979.

Forsythe, R. D., and C. Mpodozis. 1979a. Proto-Pacific crust in southern Chile. Geological Society of America, Cordilleran Section Meeting (April 1979), San Jose, California.

Forsythe, R. D., and A. C. Mpodozis. 1979b. El Archipiélago Madre de Dios, Patagonia Occidental, Magallanes: Rasgos generales de la estratigrafía y estructura del "Basamento" Pre-Jurásico Superior. In *Revista de la Geología de Chile*, no. 7, pp. 13-29.

Nelson, E. P., I. W. D. Dalziel, and A. G. Milnes. 1980. Deformation in Cordillera Darwin, southernmost Chilean Andes: A metamorphic core complex? Geological Society of America, Cordilleran Section Meeting, San Jose, California.

Nelson, E., I. W. D. Dalziel, and W. I. Ridley. 1979. Geological studies in Cordillera Darwin, Tierra del Fuego, southern Chile: R/V *Hero* cruises 77-4 and 78-2. *Antarctic Journal of the United States* (this issue).

Nelson, E., R. D. Forsythe, F. Hervé, M. Suárez, E. Valenzuela, and T. J. Wilson. 1977. Observaciones estructurales en la Cordillera Darwin, Provincias Antártica y de Tierra del Fuego: Crucero 77-4 del R/V *Hero*. *Notas Científicas, Comunicaciones*, 21:32-35. (Santiago, Chile.)