

## **REPORT ON ACTIVITIES OF THE ANTARCTIC GEOLOGY GROUP- CHILE 2001-2002**

### **Ongoing projects:**

1.-Tectonic evolution of the Antarctic Peninsula and South Shetland Islands based on the obtention and interpretation of Fission Track ages in zircon and apatite. Scientific leader: Francisco Hervé (e-mail : fherve@cec.uchile.cl)

2.-Geology of the Heritage range . Scientific leader: Juan Pablo Lacassie(e-mail: @ )

3.-Paleobotany and Paleoxilology of Mesozoic and Cenozoic deposits in Antarctic Peninsula and South Shetland islands. Scientific leader: Teresa Torres (e-mail: ttorres@abello.uchile.cl)

4.-Glacial History of the Antarctic peninsula .Scientific leader: Dr. John Anderson, Rice University, Texas , USA. Chilean participants: Marcelo Solari, Gonzalo Fernández.

5.-Paleontology and stratigraphy in Seymour, James Ross and Livingstone islands. Scientific Leader : Silvia Palma, Universidad de Concepcion

### **Field work during summer 2002**

Projects 1 , 3and 5 conducted field work and sample collections in the target areas. Two chilean geologists participated in Project 4 on board R.V. Nathaniel Palmer.

### **Future field work in summer 2003**

Projects 1, 2 , 3 and 5 will continue their field work in Bransfield and Gerlache straits area(1), Patriot Hills(2) and in the South Shetland islands(3,5) respectively.

### **International collaboration**

In Project 1, Drs. S.Thomson and M. Brix, Ruhr University, Bochum, are part of the research group. Czech Republic geologists will participate in field activities of Projects 1 and 2 in the summer campaign of 2003. Mark Phillipe, Universite de Lyon, participates in Project 3. Collaborative research with Dr. Mark Fanning, PRISE, Australian National University, Canberra in Shrimp zircon dating is active. Project 4 , Dr. John Anderson, USA, invited two Chilean geologists to participate in the 2002 N. Palmer cruise.

Evaluation of geochemical data on volcanic rocks of Byers Peninsula with Dr. Alain Demant (Universite d'Aix Marseille III)is ongoing. Evaluation of P-T-t conditions of metamorphism of the Scotia Metamorphic Complex with Drs. Arne Willner (Ruhr University, Bochum) and H. Massone (Stuttgart University), Germany, is ongoing. Geochemical studies of magmatic rocks from the South Shetland Islands are being conducted in collaboration with geologists of Universidad Federal do Rio Grande do Sul, Brasil.

### **Planned scientific meetings**

III Chilean meeting on Antarctic Scientific Research. Santiago, August 22 & 23,2002  
Informations : scarnacainach.cl

Antarctic Symposium during the X Chilean Geological Congress, Concepción, October 2003. Information at

## PUBLICATIONS 2001

Lacassie, J.P. Fernández, R. & Hervé, F. (2001) Geología en el área de Patriot Hills (80 S): resultados preliminares. II Reunión Chilena de Investigación Antártica. Concepción . Resúmenes, p.1 .Comité Nacional de Investigaciones Antárticas, INACH, U.de Concepción.

Fernández, R. & Lacassie, J.P. (2001) Factibilidad de realización de estudios geológicos de detalle en el área de Patriot Hills y zonas adyacentes. II Reunión Chilena de Investigación Antártica. Concepción . Resúmenes, M1 .Comité Nacional de Investigaciones Antárticas, INACH, U.de Concepción

Toro, L.M., Hervé, F. & Morata, D. (2001) Evolución metamórfica de la isla Smith, Shetlands del Sur, Antártica. ). In II Reunión Chilena de Investigación Antártica, Resúmenes, p.29, Comité Nacional de Investigaciones Antárticas, (CNIA), Concepción.

Thomson, S., Hervé, F., Oteiza, O. & Faundez, V. (2001) Preliminary fission-track thermochronological results from intrusive rocks of King George Island (South Shetland Islands, NW Antarctic Peninsula). In II Reunión Chilena de Investigación Antártica, Resúmenes, p.18, Comité Nacional de Investigaciones Antárticas, (CNIA), Concepción.

### PUBLICATIONS (in prep)

Feraud, G., Hervé, F., Morata, D., Muñoz, V. and Toloza, R. (en prep) Scotia Metamorphic Complex, Antarctica: evidence for the diachronous buildup of a subduction complex. Antarctic Science.

Demant, A., Touron, S., Lapiere, H & Bosch, D ( sent) Cretaceous volcanism of the Byers Peninsula, Livingston Island, West Antarctica: a contribution of Sr, Nd and Pb isotopic data. Lithos, .

Hervé, F., Lacassie, J.P. & Fanning, M. (in prep) SHRIMP U-Pb detrital zircon ages from the Patriot Hill area .

Hervé, F., Morata, D. & Fanning, M (in prep.) SHRIMP U-Pb detrital zircon ages from Trinity Peninsula Group: evidence for Permian magmatic activity in the SW Gondwana margin.

### THESIS

Luz Mary Toro (2001) Geoquímica y Metamorfismo de los Esquistos Azules de la Isla Smith, Shetland del Sur, Antártica. Depto. de Geología, Universidad de Chile, MSc Thesis ,107 pp., Santiago.

Solari, M (in prep.) Neotectonics of Bransfield Strait. Depto. Geología, Universidad de Chile. Geologist thesis.

