distributed electronically. Anyone interested in joining the workgroup should email Dick Swarbrick, using an application form which can be found on the GeoPOP website: http://www.dur.ac.uk/~dgl0zz7.

R.E. Swarbrick  
( GeoPOP, University of Durham)  
r.e.swarblick@durham.ac.uk.

2. Ophiolites and Volcanic Arcs in Eastern Cuba (IGCP Project 364 Field Workshop): Cuba, November 1996

This annual meeting of IGCP Project 364 “Caribbean Ophiolites and Volcanic Arcs” took place in late-November 1996, together with a field workshop in Eastern Cuba. The subject were the composition and emplacement of Caribbean ophiolites, and the composition and age of volcanic-arc rocks in Eastern Cuba. The meeting was attended by about fifty geologists and geophysicists, who came from Cuba (25), USA (nine), Canada (five), Dominican Republic (two), Chile, Jamaica, Puerto Rico and Germany. Of principal importance were the field excursions, but presentations were given by project members on the first day and during two late-afternoon sessions.

The excursions to the volcanic arcs were of great interest. The rocks crop out clearly in new road cuts within the Sierra Maestra mountains facing the Cayman trench, along the southern coast of Eastern Cuba, and also inland up to the northern coast. Two arc suites are superimposed: one is Cretaceous, and the other is Palaeogene.

In eastern Cuba, the Cretaceous (?Albian—mid-Campanian) arc rocks are relatively deformed, locally metamorphosed, and overlain by latest Campanian-earliest Palaeocene sedimentary rocks. The Palaeogene arc suite is very well exposed, and comprises plutonic, volcanogenic, sedimentary and contact-metamorphic rocks. Between the two arc suites, there was a gap in magmatic activity of nearly 15 million yrs. Trevor Jackson (UWI, Jamaica) noted that this gap is partially represented in Jamaica; while J. Lewis, G. Draper and J.H. Schellekens indicated that in Hispaniola and Puerto Rico, a number of plutons have been radiometrically dated with this age. The need to verify this dating, by applying more accurate methods, was emphasised.

The participants agreed that the exposures of the Palaeogene arc rocks in Eastern Cuba are the best of their kind in the Greater Antilles, and probably in the whole Caribbean. The axial part of the arc is partially exposed along the southern margin of the Sierra Maestra mountains, where tholeiitic to calc-alkaline rocks are found. The older (Palaeogene?) basalts display large pillow structures, with ribbon cherts. However, the bulk of the arc suite is volcanioclastic, and grades upward from coarse-grained agglomerates to fine-grained pumices, tuffs and tuffites. In the north, far from the Sierra Maestra, a Palaeogene back-arc basin is represented by white-to-green, well-bedded, volcanic flows, pumices, tuffs and tuffites, intercalated with marls, limestones and some conglomerates (with débris derived from the older Cretaceous arc rocks).

The end of Palaeogene arc magmatism could clearly be documented in a beautiful, overturned exposure along the Autopista north of Santiago de Cuba. As in many other areas of Eastern Cuba, within a few metres of the earliest part of the middle Eocene section, the tuffaceous rocks change from being interbedded with impure limestones (with ash), to a pure limestone (Boniato, Charco Redondo Formations). These limestones lie stratigraphically below a late Eocene epiclastic section derived from the erosion of the Palaeogene arc rocks (San Luis and Camarones Formations), resulting from uplift of the arc’s axis shortly after the end of volcanic activity. In Puerto Rico, this reviewer has found an identical limestone section in quarries in Cerro de las Cuevas, NE of Juana Diaz.

One of the best exposures of Caribbean ophiolites crops out in NE Cuba, and was the subject of the last two days of the field workshop. This body rests sub-horizontally as
an allochthonous sheet on top of Cretaceous volcaniclastic rocks, and is overlain by latest Campanian to Maastrichtian sedimentary rocks. This section was of great interest, because it contains excellent examples of syn-thrusting olistostromes and "sedimentary serpentinites". The olistostromes are represented by chaotic units composed of large blocks of ultramafic-mafic elements and lenticular beds of disrupted and folded greywackes, within a matrix of poorly-sorted debris. These units are intercalated with undeformed beds of serpentinitic sedimentary breccias and conglomerates, as well as with sections of well-bedded, graded serpentinitic sandstones. Huge serpentinitic and gabbroid olistoliths are dispersed within this clastic unit; the largest (many sq. km in area) lies on top of the whole tectono-sedimentary section.

**IGCP Project 364**
Members wish to acknowledge the excellent organisation of the field workshop under the leadership of Lilavatti Diaz, Mireya Perez, Iris Mendez and Jorge Cobiella, as well as the important support (financial and logistical) received from the IGCP Cuban National Committee, Geominera SA, MacDonald Mines Exploration Ltd., CaribGold Mines Inc. and KGW Resources Inc., and the Cuban Geological Society.

Forthcoming field workshops (in 1997/98) will be held in the Dominican Republic, Panama, Costa Rica, Puerto Rico and Jamaica. Further details are available from the reviewer.

**M.A. Iturralde-Vinent**  
*Museo Nacional de Historia Natural*  
*Obispo #61, Plaza de Armas*  
*Ciudad de La Habana* 10100, Cuba  
Fax: (537) 62 03 53; email: mnhnc@ceniai.infcll

---

**BOOK REVIEWS**

**Petroleum basins of South America: AAPG Memoir 62**

This enormous Memoir consists of 41 articles involving more than 150 authors under three editors. The title is somewhat misleading, because the Mesozoic basins of the Atlantic margin are not included. Moreover, the editors have regretfully failed in their basic task — first, by not writing an introduction justifying the rationale of the project at all levels; and secondly, by not providing some final concluding remarks. The result is an unmanageable (792-page) compendium of poorly-related parts of unequal interest and scope which, in the absence of guidelines, limits any fair review to providing a kind of table of contents with general comments. This amounts to a disservice to the authors.

The Memoir shows the progress that has been made during the last decade in understanding the genesis and evolution of the sedimentary basins of South America.

This progress reflects an improvement in the available data and in interpretation techniques, and their integration into basin analysis — all of which result from the input of a new generation of explorationists in a continent dominated by traditional geological dogmas.

The Memoir is divided into five major sections. There are six papers in the first one, “Regional setting”, covering 125 pages; they include: a general review of the structural and tectonic controls of basin evolution in SW Gondwana during the Phanerozoic; an overview of the petroleum basins of southern South America; an analysis of tectonic subsidence and Palaeozoic palaeogeography of Gondwana; an essay on Mesozoic-Cenozoic Andean palaeogeography, and regional controls on hydrocarbon systems; a review of Phanerozoic correlations in southern South America; and a paper on oil and gas discoveries, and basin resource predictions, in Latin America.