14th Caribbean geological conference; 3rd conference of the Trinidad and Tobago Geological Society, and field meeting of IGCP 364


The 14th Caribbean Geological Conference and the 3rd Conference of the Trinidad and Tobago Geological Society were held at Port of Spain, Trinidad, at the Hilton Hotel and Conference Center. Field trips were organized before and after the scientific meetings. The meeting was attended by 247 delegates from Barbados, Belize, Canada, Colombia, Cuba, Dominica, France, Germany, Guadeloupe, Jamaica, Puerto Rico, Dominican Republic, Spain, Switzerland, Trinidad and Tobago, United Kingdom, United States of America, and Venezuela. 112 scientific communications were presented, of which 83 were oral, and 29 poster demonstrations.

The scientific sessions were dedicated to different aspects of Caribbean seismology and vulcanology, petroleum geology, biostratigraphy and palaeontology, sedimentary facies, igneous and metamorphic petrology, marine geology and oceanography, structural geology, tectonic evolution, geophysics and oil and mineral exploration. The oral presentations were well organized, and it was possible to discuss most of the papers, but the posters drew much attention and provided foci for the exchange of ideas and information. Many papers revealed new insights into the geology and tectonic evolution of the Caribbean plate margins and plate interior.

The Caribbean–South American margin is generally described as an oblique collision zone associated with the emplacement of allochthonous ophiolites and volcanic arc terranes onto the continental margin of South America. This interaction developed a wide deformational belt with strike-slip, oblique-slip and associated faults as well as dynamo-metamorphism; the development of sedimentary basins is closely related. Several details of this framework were widely discussed by Sam Algar, P A Audenart, Oliver Maesotay, W. Maresch and Kevin Burke, and diverse opinions prevail regarding the age, mechanism and tectonic models of the evolution of the plate margins.

Sea floor sediment deformation related to the subduction of the Atlantic beneath the Caribbean plate was described in poster and oral communications by P Huyge, R Griboulard, F Durand and others; while the activity of several volcanoes in the Lesser Antilles was described by A Smith, G Matoli and others. While the conference was in progress a volcanic eruption began on the island of Montserrat, after many years of calm. D Bird and others described the origin of the Granada Basin as an east–west extensional backarc basin of the Lesser Antilles Arc.

Several papers described the composition, origin and tectonic evolution of the Central American plate margin. According to M Mescache and his colleagues the palaeomagnetic measurements in the Nicoya complex record an eastward movement near latitude zero for the Cocos Plate. They suggest that the subduction of the buoyant Cocos Ridge caused inactivation of the volcanioclastic activity and rapid exhumation of the Miocene island arc suite in Costa Rica.

The northern Caribbean plate margin was described in several presentations. G Draper, T Jackson, J Lewis, H Santos and others reported new data on the stratigraphy and petrology of the Cretaceous arc and ophiolites in the Greater Antilles. Draper and Lewis recorded a post-Neocomian–pre-Late Albian deformational event in the volcanic arc rocks of Dominican Republic, that matches the age of a similar event in the Tobago volcanic arc section reported by A Snape. M Iriart-Valent provided information for the Paleocene-Lower Eocene volcanic arc activity in eastern Cuba, which strongly suggest that the subduction zone was located toward the south and dipping north or north-westward. M Perez, K Sukar and E Liljak described the Cretaceous and Paleogene arc-related plutonic rocks as part of an extensive Caribbean calc-alkaline association that includes low to high K varieties. It became evident that new dating and more geochemical information are needed in order to improve our understanding of the magmatic evolution of the arc.

Among the many subjects presented at the conference, two especially caught my attention. One was the new report of an ubiquitous breccia with microspherules at the K/T boundary section in Haiti. According to G Sen and P Mauasse an unusually large spherule (0.6 x 0.45 mm) displays a structure similar to that of a barred chondrule, and is probably a fragment of the suspected chondrite meteorite that hit the Caribbean area near the K/T boundary. The second paper of note was "Forensic Geology" by P Nagle which described the pinpointing of the scene of the crime in several cases where cargo was stolen somewhere between its place of origin and/or the port of arrival. After the thefts, the containers were usually refilled with sands or rocks the examination of which enabled geologists to determine the area where the cargo was replaced. Hence it was possible to decide which insurance company was liable. This is a new job opportunity for geologists.

The days spent in Trinidad and Tobago will always remain with us, as we deeply enjoyed the excellent local music, the beauties of the islands, and especially the kindness of the people. The next conference will be held in Jamaica, in June or July 1998, another beautiful corner of the Caribbean.

Meeting of IGCP Project 364

The IGCP Project 364 met during the Caribbean Conference in Trinidad and Tobago. The first activity was a field trip to Tobago, to examine the easternmost outcrop of the Cretaceous volcanic arc suite of the southern Caribbean. In the island outcrop, two volcanic sections (the North Coast Schist and the Tobago Volcanic Group) and a plutonic body. The composition of the magmatic rocks suggest that the volcanic-plutonic suite are derived from oceanic
The protolithe of the North Coast Shist are Lower Cretaceous volcanic rocks, while the Tobago Volcanic group is Albian-Cenomanian. The lithology of the last series is quite similar to those of the isochronous section in Cuba and Hispaniola.

During the conference several important contributions to the knowledge of Caribbean ophiolites and volcanic arcs were presented by members of the IGCP Project 364. At a business meeting to plan for 1996, it was agreed that, in the future, the project participants should aim to:

- increase the number of publications with the logo of IGCP Project 364;
- improve the activities of working groups;
- increase the number of participants;
- produce more comprehensive newsletters made up of short notes and
- start the organisation of the final product of the project — a book on Caribbean ophiolites and volcanic arcs.

The group agreed to meet during the Annual Meeting of the Geological Society of America in November 1995, in New Orleans. One field workshop was planned to be held in Puerto Rico, February or March, 1996 on the Correlation of the Cretaceous volcano-sedimentary arcs sections of the Greater Antilles by means of palaeontologic tools. The field trip will visit fossiliferous limestone intercalated within the volcanic section. Another field workshop will be held in eastern Cuba, in October 1995 on a transect across the Palaeogene volcano-sedimentary arc sections of Cuba. Some sections of the eastern Cuban ophiolites will be visited as well.

Final volume of the Project

In recent years, several important contributions to Caribbean geology have been published. Good examples are the Caribbean volume of DNAG in 1990 and the useful Introduction to Caribbean geology produced in 1992 by the University of West Indies in Jamaica. But both volumes describe the ophiolite and volcanic arc terranes of the Caribbean realm from an administrative-geographical point of view, a scope that must be overcome by our volume.

The planned volume must describe the different ophiolites and volcanic arc units from a geological point of view. Each subject will have one editor and several authors. The following subjects are planned.

1. The peridotite-gabbroid and diabase complexes.
2. The volcanic-sedimentary suites related to ophiolites.
3. The Cretaceous volcano-sedimentary arc rocks.
5. The Paleocene–Eocene volcano-sedimentary arc rocks.
7. The Late Eocene–Recent volcanic and plutonic suites.
8. Tectono-magmatic evolution of the arcs.

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