



Jamaican Geode

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Ten volumes: an essential library of Jamaican geology

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The year 2004 has been a marvellous one for my personal collection of books on Jamaican geology. A book-selling friend obtained a copy of Sawkins (1869) which I bought in May and three days in Hay-on-Wye as a 50th birthday present added Matley (1951). These two exciting finds brought me back to an old thought; what books constitute the essential reference library of Jamaican geology? Below I outline my personal 'top ten' volumes on the island's geology, listed in order of publication. I have not included even the most important journal articles, such as De la Beche (1827), which are rarely available for purchase as 'separates', but do admit monographs in serials that are, or at least were, available for sale separately, such as Hill (1899) and Chubb (1971). In my judgement, any reader of the *Jamaican Geode* should have at least half of these volumes on their shelf. If not, why not? My own collection remains incomplete, but not for want of trying.

Sawkins (1869). This was the first monograph on the geology of all Jamaica, supporting the first geological map of the whole island. Extending the coverage of De la Beche (1827), this memoir and the associated map are important in so many ways, not least because of the inclusion of the last reports of Lucas Barrett. It has taken me 18 years of searching to add this volume to my library. For some home truths about Sawkins and criticisms of this memoir, see Chubb (1962).

Hill (1899). I am still looking for a copy of this delightful memoir by Hill (1858-1941) for my personal library. The Museum of Comparative Zoology at Harvard formerly sold copies of old monographs at the original price at publication, but, even in the early 1990s, Hill's volume was unavailable. It was the third great report on the geology of Jamaica to be published in the 19th century and includes, as but one example, comments on the correlation of the Scotland beds of Barbados with the Richmond Formation of Jamaica.

Matley and others (1951). Matley's posthumous memoir on the geology of the Kingston district, including his last contribution concerning the supposed Basal complex, is difficult to find, but is undervalued by booksellers - my copy cost UK£5! Matley (1866-1947) belonged to a generation of British overseas geological surveyors as likely to be interpreting dinosaur footprints in India as unravelling the geology of Jamaica. Robinson (1996) published a brief account of Matley's work, but he deserves further biographical attention.

Zans *et al.* (1963). This memoir represents the first comprehensive, modern account of the geology of Jamaica, although predating any plate tectonic analysis of the island. It is much more than Sawkins brought up to date, including many new and important concepts, such as microfossils as a foundation for biostratigraphy and palaeogeography based on lithofacies analysis.

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Sadly, it was published after the death of Professor Verners Aleksandrs Zans (1904-1961). This is a gem of a book that is difficult to obtain.

Chubb (1971). Rudists, Jamaica and Chubb roll off the tongue together. Chubb was a prolific author on the Cretaceous geology and palaeontology of Jamaica, and this monograph was the culmination of his work on the rudists of the island. It remains a standard reference and is still available at a reasonable price from the Paleontology Research Institute, Ithaca, New York.

Porter et al . (1983). Affordable, pocket-sized, packed with information and a must for any geology major at UWI. Everyone has a copy, surely?

Ahmad (ed.). (1987). The last time I looked (admittedly six years ago) the Society still had unopened boxes of this comprehensive memoir, so I presume it is still available at a reasonable price. The mixture of reviews and original research papers give it an enviable breadth. I'm sure a second edition would be welcomed by many.

Porter (1990). A diverse series of sketches of Jamaican geology, derived from the author's newspaper articles. Inexpensive and very readable, this is an ideal introduction to the islands geological highlights for any tourist with a taste for natural history.

Wright & Robinson (eds). (1993). A superb, indeed essential reference, which considers the biostratigraphic and systematic diversity of most microfossil and many macrofossil groups from the island. A tip for bargain hunters – soiled or damaged copies may be available for early birds from the Geological Society of America's Bookstore at their Annual Meeting.

Fincham (1997). I love this book, both for its scholarship and the beauty of its production. It is bulging with fascinating data on Jamaican caves and scenery. The first edition, published by the Society, sold out many years ago, yet it was actively sought by cavers overseas until the appearance of Fincham (1997). Long may the second edition remain in press.

Ahmad, R. (ed.). 1987. *Proceedings of a Workshop on the Status of Jamaican Geology. Journal of the Geological Society of Jamaica, Special Issue, 10*, xi+342 pp.

Beche, H.T. De la. 1827. Remarks on the geology of Jamaica. *Transactions of the Geological Society, London, (series 2), 2*, 143-194.

Chubb, L.J. 1962. Lucas Barrett - a biography. *Geonotes 5 (3/4)*, 2-34.

Chubb, L.J. 1971. Rudists of Jamaica. *Palaeontographica Americana, 7 (45)*, 157-257.

Fincham, A.G. 1997. *Jamaica Underground: The Caves, Sinkholes and Underground Rivers of the Island* (2nd edition). The Press, University of the West Indies, Kingston, xv+447 pp..

Hill, R.T. 1899. The geology and physical geography of Jamaica: study of a type of Antillean development. Based on surveys made for Alexander Agassiz. With an appendix on some Cretaceous and Eocene corals from Jamaica by T. Wayland Vaughan. *Bulletin of the Museum of Comparative Zoology, Harvard, 34*, 256 pp.

Matley, C.A. and others (ed. by F. Raw). 1951. *Geology and Physiography of the Kingston District, Jamaica*. Crown Agents, London, vii+139 pp.

Porter, A.R.D. 1990. *Jamaica: A Geological Portrait*. Institute of Jamaica Publications, Kingston, xi+152 pp.

Porter, A.R.D., Jackson, T.A. & Robinson, E. 1982. *Minerals and Rocks of Jamaica*. Jamaica Publishing House, Kingston, 174 pp.

Robinson, E. 1996. Charles Alfred Matley: his links with mid Twentieth Century geology in Jamaica. *Contributions to Geology, UWI, Mona, 2*, 20-26.

Sawkins, J.G. 1869. *Reports on the Geology of Jamaica: or Part II of the West Indian Survey, with contributions from G.P. Wall, Lucas Barrett, Arthur Lennox and C.B. Brown, and an appendix by R. Etheridge. Memoir of the Geological Survey of Great Britain*. Longmans, Green & Co., London, 399 pp.

Wright, R.M. & Robinson, E. (eds). 1993. *Biostratigraphy of Jamaica. Geological Society of America Memoir, 182*, xi+492 pp.

Zans, V.A., Chubb, L.J., Versey, H.R., Williams, J.B., Robinson, E. & Cooke, D.L. 1963. Synopsis of the geology of Jamaica. *Geological Survey of Jamaica Bulletin, 4* (for 1962), 72 pp.

REPORT ON FIELD TRIP TO PALISADOES, WICKIE WACKIE AND COPACABANA

On Saturday, March 12, 2005, a group of individuals with a keen interest in geology assembled in Lab 1 of the Geography, Geology Department for a brief seminar on the impacts of Hurricane Ivan on the Palisadoes, Wickie Wackie and Copacabana. This seminar was to precede a field excursion to these areas organized by Professor Edward Robinson and Ms. Deborah-Ann Rowe of the Marine Geology Unit, UWI, Mona. Technical difficulties prevented projection from the computer to the screen. However, this did not prevent the seminar proceedings as the small group assembled around the lap-top while Professor Robinson adjusted to the circumstances and continued with his presentation. The field excursion was in keeping with the 50th anniversary celebrations of the Geological Society of Jamaica as the theme for March was 'Marine Geology'.

The group unloaded for the first stop at about 9:40 a.m. to observe the remarkable extension of beach rock along the sea shores of the Palisadoes strip while Professor Robinson and Deborah spoke of the formation of these units. Mr. Rafi Ahmad contributed by explaining with much excitement the various depositional features observed including evidence of current direction.



Above : Prof. Robinson explaining how beach rock is formed, assisted by Mr. R. Ahmad

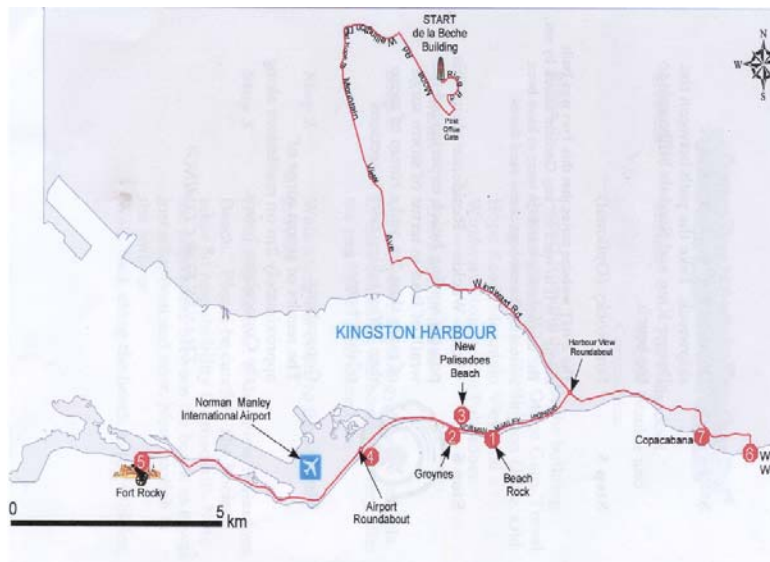


Figure 1. field trip stops

After the lecture, a total of twelve (12) persons started out with much anticipation for a field excursion closely observing the field map prepared by the organizers (Figure 1). On going around the University's Ring Road the bus driver took a route that diverted slightly from the map without much thought. However, he was quickly put back on track by Debbie who wanted to ensure that her efforts in route preparation was not in vain. The journey towards Palisadoes was filled with lively discussions and jokes which encouraged interactions between most persons. Mr. Andreas Haiduck from the Water Resource Authority and Mrs. Margaret Wiggins-Grandison joined the group at the Old Harbour round-about. They readily surrendered their trip fees to Gavin who ensured that none would escape payment.

On walking towards Stop 2, a number of individuals collected pieces of iron encrusted in Beach Rock. The group learnt that the pieces of iron forming the core of these structures originated from an old shipwreck that was visible in the distance. In addition to these iron structures, an unusual deposit of carbonate sand was observed just a few metres from the main attraction of Stop 2. Professor Robinson commented that this deposit was not observed on his visits to the area immediately after Hurricane Ivan.

The main purpose of Stop 2 was to observe damages to the groyne structures due to the hurricane. On observing limestone boulders close to the groyne, Mr. Anthony Porter went back to his childhood days giving a brief account of the construction of these groynes as he remembered visiting the site with his father during the construction process.

To reach Stop 3, the group had to cross the road with much care to avoid oncoming traffic. The main purpose of this stop was to observe the new beach that was formed with the deposition of material during Hurricane Ivan. However, an interesting feature at this stop was the number of dead starfish observed on the beach. Persons proposed explanation for their presence while others posed for pictures with these creatures to capture the moment. The group once again boarded the bus lingering for a few minutes to give Rafi an opportunity to gather the last bits of detail along the new beach.



The group disembarked at the airport round-about, headed across the beach sands towards a huge ship that was wrecked approximately five years ago. At this stop, more beach rock was observed though it was noted that these materials were much finer in size. Though some persons listened as Professor Robinson spoke, others were busy trying to get as many shots as possible beside the huge ship. Another distraction was the water that splashed vigorously against the rocks. The continuous splashing left Professor Robinson with much more water on him than when he first arrived.

It was decided that the group would skip Stop 5 for sake of time and instead head to Wickie Wackie. As one member of the party had to leave 13 persons headed for Wickie Wackie. It was at this point of the trip that Mr. Franklyn McDonald enlightened those who were not aware of the details of how Whoppy killed Phillop. This was quite an amusing account which we also learnt was associated with the Taino heritage and not the Africans. He spoke of other Taino legends and was joined by Rafi who told his account of how Saudia Arabia got its name. These stories really helped to keep our minds away from the fact that lunch time was drawing nigh.

At Wickie Wackie the trip was handed over to Andreas. The original plan was to begin with a talk by a D.J. known as Ronnie who had suffered damage to an entertainment structure at the back of his house due to the Hurricane.



Above: Group observing the damage caused by hurricane Ivan at Copacabana

However, as he was not present, Andreas led the group in an account of what it was like living on a coastline during Hurricane Ivan. He gave an interesting description of the time of damage to structures including a seawall and a boundary wall, though there was no damage to the house itself. By the time this talk was finished the group was ready to take a lunch break to re-fuel after all the day's activities. Andreas' den that overlooked a pool and the vast stretch of ocean was an ideal spot for lunch.

The group retired to a time of eating and relaxation as the host served cool drinks to all who asked. Person got an opportunity to interact while others shared their lunches with those who forgot that they might be some distance away from any restaurants to purchase food. Hammock swinging was included in the break I am sure this group will always remember the visit to Andreas' house. After lunch the group reluctantly walked down the beach to observe more beach rock exposed by the hurricane activities.



Above: looks like we lost one to the hammock!

At about 1:45 p.m., with a full tummy, and a little rest, the group headed to Copacabana. We learnt that this was the area in which Margaret Wiggins-Grandison lived. At this point, the group engaged in a small discussion, after which Professor Robinson called the trip to an official close at 2:15 p.m. thanking all those who had contributed. The group then headed back to the University campus, arriving at the Geography and Geology Department at 2:45 p.m. where each went their separate ways after being reminded of plans for the next field trip involving Water Resources

- Contributed by Ms. Georgette D'Aguiar
Photos By Ms. Deborah-Ann Rowe



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THE LITHOSTRATIGRAPHY OF THE MALDON INLIER, PARISH OF ST. JAMES, NORTHWESTERN JAMAICA by
Gavin C. Gunter and Simon F. Mitchell

**MAPPING LANDSLIDE SUSCEPTIBILITY FOR THE CARIBBEAN ISLAND OF TOBAGO USING GIS, MULTI-
CRITERIA EVALUATION TECHNIQUES WITH A VARIED WEIGHTED APPROACH** by Serwan M. J. Baban
and Kamal J. Sant

THE GEOLOGY OF BARBADOS: A FIELD GUIDE by STEPHEN K. DONOVAN

**AERIAL PHOTOGRAPHS FOR DETECTING LAND USE CHANGES IN VALENCIA WILDLIFE SANCTUARY AND
FOREST RESERVE, TRINIDAD** by Raid Al-Tahir, Farah Rajack and Mike Oatham

GSJ 50TH ANNIVERSARY CONFERENCE

November 2005

UWI Mona Campus

For additional information, please e-mail us at

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The GSJ welcomes short articles, technical information, reports, news items, old photos etc. which are suitable for inclusion in the Newsletter. Submissions should be made to the Geological Society of Jamaica newsletter c/o Department of Geography and Geology, University of the West Indies Mona, Kingston 7.



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