Memories of Deep Sea Drilling Project Leg 1

BY J. DAVE BUKRY

The year 1967 was spent preparing for Leg 1 of the Deep Sea Drilling Project (DSDP). Because it was believed that graduate students, instead of professors, would staff the continuous expeditions, I joined Prof. Bramlette at Scripps Institution of Oceanography to prepare stratigraphic range and species photo catalogs and a set of stratigraphic reference slides to be used onboard ship in the Paleontology Lab. In fact, two coccolith shore labs were designated to provide consistent geologic age identifications between successive legs. Bill Hay and Steve Gartner constituted the East Coast lab, while Prof. Bramlette and I constituted the West Coast lab. In the end, high interest in the pioneering opportunity to study new parts of the deep-sea stratigraphic sequence actually led to more professors and fewer graduate students sailing on the *Glomar Challenger*.

I was the greenest Leg 1 crew member. I had a new 1967 Ph.D. from Princeton and by 1968 was a sea-going wizard of coccolith correlation, thanks to a year of post-grad study with Prof. Bramlette ("Bram") at Scripps. There was some question about sailing a coccolith specialist because marine biostratigraphy was a new field, but Leg 1 established that coccoliths were better preserved and more abundant than forams in most samples. This observation was key because we were able to date small sediment recoveries at sea, which helped to guide a discontinuous coring program.

The summer 1968 sea trials and completion of the new D/V *Glomar Challenger* at Orange, TX caused delays in leaving port on schedule. I changed my travel reservations accordingly, but I was so late to port that the ship was already at sea. I sailed out on a Shell Oil supply ship with Creighton Burk from Mobil Oil and Princeton, who was an old hand at this and kept my anticipation in check. Our nighttime approach to the *Glomar Challenger* was spectacular from miles away. The whole ship and derrick were fully lit, daylight bright, and looked like a huge Christmas tree rising from the sea.

It was tricky boarding the *Glomar Challenger* from the flying bridge of our transfer ship. It required the verbal assistance of crewmen yelling, "jump," as the swell lifted me close to the main deck. It was a totally memorable midnight arrival into a strange world of contrasting uniforms milling around for the midnight show. Several cooks in all white had come out to watch. The drillers were in dark mud and lube, officers in khaki, crewman in blue, and scientists in whatever shipboard visitors wear….

Site 2 in the Sigsbee Knolls was the cruise highlight, confirming Doc Ewing and Joe Worzel's suspicions that these were salt diapirs. Oil, gypsum, and sulphur caprock were collected from Core 6. I dated discoasters from associated shale chips as late Miocene. Creighton Burk lit one of his thin black cigars to celebrate. Protocol required coring to stop at the Core 6 oil show, so barite mud and concrete could be used to seal the hole. An excellent summary of the geologic significance of our new Challenger Knoll, the Sigsbee Knolls, and Sigsbee Abyssal Plain (Site 3) results was published in 1969 (Burk et al., *AAPG Bulletin* 53:1,338–1,347). Site 3 was also the source of my first new coccolith species from DSDP cores: *Catinaster mexicanus* Bukry, 1971, and *Discoaster berggrenii* Bukry, 1971 (Bukry, D. 1971. Discoaster evolutionary trends. *Micropaleontology* 17:1,43–1,452).

The long transit from Site 3 to Atlantic Ocean deep-water Site 4, east of the Bahamas, took us through the Florida Straits near communist Cuba. There was mock-worry humor about whether our large 140-ft (43-m) derrick might be mistaken as a threat to Cuba. No problem.

More of a problem was the low sediment recovery and rapid bit wear of our diamond bits from chert layers in the sediment sections from Atlantic Sites 4 to 7. These sites, cored through 17,000-ft (5.18-km) waters, provided hours of time between cores. During the lulls, Bill Berggren and Creighton Burk fished for sharks and Emile Pessagno suffered a driller's lament—pipe loss, as his favorite pipe fell overboard while we chatted as we watched the fishing. To maximize results in a limited time, we often skip cored to date the key seismic reflector horizons in the Atlantic. Coccoliths provided immediate results from even the smallest amount of core-catcher recovery. I recall Doc Ewing waking me at 3 AM to date a reflector. He had the whole recovery in a 250-ml beaker—plenty for the coccolith date.

As the cruise ended, we came back into the browning waters and aromas from New Jersey and New York City, but were treated to fireboat flag and water-canon salute and a fine reception at the Explorers Club for the first deep drilling and coring of the Atlantic. I gave several talks on the exciting new results about ocean sediments and seafloor spreading at several institutions worldwide. Other cruises on Legs 6, 16, 32, and 63 were all memorable and rewarding. Like the time-parallel NASA Space Program, the pioneers who developed and executed the Deep Sea Drilling Project from the deep-water coring success of CUSS-I in 1961 to the D/V *Glomar Challenger* in 1968 deserve a big "Well done!"

J. DAVE BUKRY (dbukry@usgs.gov) is Scientist Emeritus, U.S. Geological Survey, Menlo Park, CA, USA.