From Mules to Lasers

IN MORLEYANA—the affectionate posthumous tribute to noted Mayanist S. G. Morley—friends reminisced about his days in the field, recalling mule trains laden with supplies, narrow rainforest trails, and telegrams sent from remote outposts, announcing his imminent reappearance and readiness to dine.

Much has changed in Maya archaeology since the 1920s and 1930s, when Morley worked. Four-wheel drive vehicles have replaced mules and many Maya sites are now accessible by logging roads, if not occasionally by paved highways. Supplies are bought in local supermarkets and telegrams are no longer used, edged out long ago by telephones and, within the last decade, by the internet. Most recently, pay phones have given way to cell phones, producing some odd situations.

One of the more surreal moments I have experienced in the field was last March when I first carried a cell phone and found myself talking from Belize City to my husband in Baghdad. Who knew, 25 years ago, that would be possible? The motto then was “no news, good news,” as we patiently wrote letters back and forth that took two weeks minimum to travel one way—via air mail. That meant that it took one full month to get a reply to any message (“Hi, how are you? Did you manage to pay the rent?” “Fine, no, we are bankrupt, but don’t worry; the dissertation comes first”). Of course, cell phones, like the internet, have a downside: constant availability. A colleague excavating a site in the Belize Valley was recently interrupted by a call from his department. Thinking it urgent, he quickly answered, only to find the secretary requesting his textbook order for the following semester. Hearing this, I was profoundly thankful that cell towers do not reach the corner of Belize where I work.

Communications are not the only systems that have changed in Maya fieldwork. New technology has brought new methodologies, particularly for survey. In 1986, as Paul Simon was singing about “lasers in the jungle,” I was mapping the site of Colha, Belize. We were aware at the time of the new laser technology used in survey equipment, and many Mayanists felt that song was
written for us. However, practically speaking, few archaeologists had access to the most avant-garde instruments—total data stations (TDS). TDS simultaneously measure distances, angles, and elevation, and, when hooked up to a computer, will spit out a map of your points. I suspect they will also make coffee while you wait, but I have yet to locate that function.

In my work I haggled around an old-fashioned theodolite, whose general appearance looked like something out of a Jules Verne novel. It came in a heavy, awkward wooden box, so we usually dispensed with that and carried the theodolite already screwed into its tripod legs. The whole thing weighed about 40 pounds and put some serious dents into shoulders over the course of a day. We also had to carry the stadia rod, a tall pole that gave us elevations when sighted through the theodolite, and a 50-meter tape to measure distances.

The “hot” new discovery in those days was using programmable calculators to compute north/south and east/west coordinates. That meant we no longer had to
locate our points with protractors and rulers, but could plot the coordinates directly onto graph paper. We felt this was a step up compared to the alidade and plane table favored by previous generations. Not only was the theodolite comm calculator entrancingly “high-tech,” but it also permitted greater coverage, as you could shoot points faster and sight farther from each station. Visibility was still restricted by the heat and humidity, though, so you could usually only see about 60 meters. In contrast, the TDS that are regularly used for survey today can sight hundreds of meters, if the view is unobstructed.

Some things have not changed, however. The new machines, though encased in plastic and carried in soft backpacks, are still just as heavy as the old. The other pieces of gear—the legs, the prism pole replacing the stadia rod—are lighter but equally unwieldy. In addition, a new problem has crept in—bad batteries. I cannot recall the times we have had to stop mapping because batteries ran out. I cannot recall, either, how often we have arrived at a site having forgotten the batteries back in camp. Each season now one crew member is responsible both for charging the batteries and for bringing them into the field.

Another thing that has not changed is the poor visibility in most Maya sites. A TDS may theoretically be able to sight farther and work faster, but the rainforest often has other plans. Indeed, for a sighting to register, the laser beam has to bounce off the prism and back to the machine. That means even the smallest obstacle can be a problem. Inordinate time can thus be spent identifying the leaf in the rainforest obstructing the beam. The same difficulties apply to the latest technology to arrive in the Maya area—global positioning systems (GPS). Higher-end GPS units can pinpoint your location on earth within millimeters. The catch is that they cannot read satellites well through heavy canopy. It takes patience, a long time, and an open spot to get a reading. Many a Mayanist has been known to climb a tree or lean out from the top of a pyramid in order to do so, making it hard to use GPS to map a whole site.

Something else that has not changed is the traditional Mayanist experience with mud, ornery vehicles, and
unpredictable circumstances. Every Mayanist I know has stories of getting their alleged four-wheel drive royally stuck in the mud and everyone has favorite techniques for getting out—use a log and pole for leverage, use rocks, use a tow chain and another truck, only work in the dry season. Vehicles themselves are the most critical pieces of equipment in any field season. They tend to take center stage and stay there. When The Gods Must Be Crazy came out in 1980, every archaeologist I knew fondly recognized the true star of that movie—the jeep. We all empathized with the strong feelings of love and hate alternately expressed towards it by the owner.

Vehicles and mud, combined with the vagaries of terrain and weather, can make executing your plans each day a real challenge. The continuity of this experience in the Maya area is best expressed by a pair of stories. The first one comes from the well-known Mayanist, J. Eric Thompson, reminiscing about his 1926 visit to Uxmal in Maya Archaeologist:

From there we drove to Sayil. The other car broke an axle; ours lost the way, and we followed tracks which petered out in a milpa. [Herbert] Spinden, who was in our car, sang the cucaracha song the whole way, but as the only word he knew was cucaracha and the rest was tum tum tum, it was not too good for our nerves.

The other story is from my own experience some 60 years after Thompson’s. As I recall, the day started out badly. It only got worse. The crew charged with checking vehicles reported that one four-wheel drive truck had practically no brakes. Since the site we work on is at the top of a steep slope accessible only via a rutted logging road, we had to get them fixed. After a long wait at the mechanics, it became clear they could not be repaired immediately. This was a problem because we needed the vehicle to ferry everyone up. We resolved to leave a few people in camp and pile the others into the remaining four-wheel drives. As we stopped at the turnoff to our logging road, one of the vehicles got a flat. We changed the tire. As soon as the last lug nut was tightened, it began to rain. We decided to divide up. Some of us would continue on in the vehicles that could make it up the slope in the rain, while the rest returned to work in the lab. We tried to start a parked pickup to ferry people back to camp. It was dead. We changed plans again. Some of the crew now looking forward to being dry would work in the field. Two vehicles went up the slope. Only one made it past a particularly steep and slippery rise, so we all piled into that one. It began pouring. Yesterday’s puddles were now small lakes. Around a bend we reached a large wallow known to capture vehicles: we saw only mud and water, nothing solid to drive on. We turned back. Sometimes, mules look good…

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For Further Reading
