

Grunging It

by Peggy Williams

When I began scuba diving, in 1970, I resisted shells for a year or so but then found one I knew (from experience as a child collector) was unusual - kept it, and thought, "Well, I have one...!" That began my shell collection.

Even before that, however, my husband and I collected fish for salt water aquaria. We had a variety of aquaria over the years, from 10 to 60 gallons, and everything in them was personally collected by us - even the sand.

Well, one day I was cleaning sand that we had collected in the Florida Keys to put in the aquarium and I noticed some pink bits. Looking more closely, I realized they were shells! Right away I sat down with the whole bucket of sand and a magnifier and looked for shells. I found lots, all under 1/2 inch, and exquisitely beautiful.

Later I discovered many people do this - collect shells from sand, which is called "grunge" or "shell grit" depending on the country you're in. Some shell clubs have "grunge parties". Now when I'm on a trip I bring home bags of grunge to sort through later, enhancing my collecting and giving me lots of pleasure (and frustration trying to identify that stuff!) Sometimes I haul out my heavy duty camera, bellows and copy stand to take photos.

Many people don't realize that, of the estimated 100,000-500,000 species of mollusks, probably 50% of them never grow over 1/2 inch in length. There's a whole world of critters living in the sand or hiding in algae and rocks that most never see or even know about. These shells are perfectly formed, exquisitely sculptured, delicately colored, and usually in far better shape than larger shells found on the beach or even live in the water. I've brought up grunge from scuba diving and sorted it right away to find live shells moving about that are no larger than a pinhead - and photographed them moving about. Several times I've exhibited these tiny specks with their photographs to show them off.

When you're looking for good grunge, go high on the beach to the high tide drift line. In

Florida, look for the stuff that looks like coffee grounds - little bits of black stuff that floats on the tide. Examine it to see if you can see any small shells amongst it, and if you do, scoop it with the blade of your hand into a baggie to take home. Sometimes there are drift lines closer to the beach, and occasionally the best stuff is right at the water line at low tide - and gets covered by water shortly afterwards. If you're snorkeling you might find grunge near or under rock reefs where it drops from the rock, or sometimes in drift lines in the sand where the tide makes hills and valleys in the sand.

When you get home, rinse the sand to get the salt out (it makes the shells stick together). Be careful you don't let any floating shells go down the drain with the rinse water! You can look through the grunge when it's wet, but it seems to be better to let it dry thoroughly first. Some people recommend that you sift the sand through successively smaller mesh - indeed, I've just discovered an advantage to that, using a spaghetti drainer with smallish mesh. The smallest shells only go through it, and I'm able to find them more easily without having to adjust my eyes and thinking to "think small".

You'll need magnification to find shells in your grunge, especially if you want the smallest ones, about the size of a period on this page. You can purchase a magnifier that fits over your head and comes down over your eyes in up to 10X power at Low Vision shops or through a rock and gem shop. If you get a microscope, it should be stereoscopic, which has a deeper depth of field than the regular ones.

I use tweezers to sort through the sand and pick up the shells, put them into a largish container at first (a margarine tub to be exact), then into a smaller container until I'm ready to try to identify them. I get really excited about the shells as I find them, seeing the perfect patterns of color and sculpture in these tiny miracles of creation. But then I have to figure out what they are! This takes concentrated reading of shell books and frequent use of the microscope. A delightful and frustrating exercise in learning.

More on Minis

Shells under an inch or so are known as “miniatures” - under 1/4 inch or so as “micros”. There are more of these than you might think. For one thing, every mollusk starts as a baby, and most are microscopic in the beginning. But there are also whole families of shells that are tiny.

We’re used to the large families (in size as well as quantity), and the most popularly collected ones fall in this category: “cowries” (Cypraeidae), “cones” (Conidae), “tritons” (Ranellidae), “conchs” (Strombidae), “scallops” (Pectinidae), and so forth. Even “wentletraps” (Epitoniidae) are mostly large enough to see easily. But have you heard of Caecidae, Vitrinellidae, Assiminaeidae, Rissoidae or Truncatellidae? The shells in these families are all under 1/4 inch in size, some of them measurable only in millimeters.

Juvenile Shells

How can you tell if a tiny gastropod is full grown or a baby (juvenile) of a larger species? Look at the tip of the shell. If it’s very large in relation to the rest of the shell, and if there are only one or two more whorls to the shell after the large ones, it’s a juvenile. This is because the first one to three whorls of a shell are really larvae and disproportionately large. The rest of the whorls are called “adult whorls” and have a different profile, often different sculpture, and enlarge rapidly to full size. There are usually six to eight adult whorls in a fully adult specimen, so if there are only one or two of them you know you have a juvenile.

The early whorls of the shell are called the “protoconch”. In some species, the larval animal has “wings” called “velar lobes” (velar means sail) with which it can propel itself through the water. The shell is very small and light-weight so the animal can float. Eventually it grows too heavy to float and sinks to the bottom. If the bottom is habitable for that species (sand for sand-dwellers, rock for rock-dwellers, etc), it will thrive. In this way the species is able to disperse through a large geographic area, as

long as the temperature and depth of water are satisfactory to its life style. An example of swimming mollusks is the Giant Hairy Triton, *Cymatium parthenopeum*, which can swim for up to a full year and is found around the globe in temperate zones. In fact, it has been “named” some 20-30 times because people didn’t think it would live in, for instance, Japan and America. (*Parthenopeum* is the oldest of the names so it’s the one we use.)

In other species, the larval shell is too big and heavy to float, and the animal comes out of the egg sack crawling along the bottom where it was born. These species tend to be limited geographically, since they cannot cross deep water channels, and the protoconch is large and bulbous. Many times this large protoconch breaks off and the shell is “decollate” - that is, tipless. An example of non-swimming mollusks is the Florida Horse Conch, *Pleuroploca gigantea*, which is found along the North American continental shelf from the Carolinas to the Yucatan but nowhere else on earth.

Often the juvenile shells don’t look like the adult, and some of them have been named as separate species and even separate families before scientists caught on to this fact. The juvenile of the Triton Trumpet, *Charonia variegata*, gets up to 3/4 inch in size and is bulbous and cherry red. It was quite a while before I discovered it was a juvenile!

Identifying

True miniature and micro shells are perfectly formed in the proportions we are used to, only very small. It takes magnification to see them properly, and it generally takes a variety of books to identify them, since most books don’t deal with small shells but feature the more popular, larger species. Early on in my quest to identify miniatures I had found in the US I devised a “Miniature Key” to place the shells in families, and I still find it useful. It’s available on my website. Using Abbott’s *American Seashells* I drew representative shells from the families and genera, emphasizing features common to their groups, like general shape and mouth configuration. It helps a lot to study the books!

For Florida/Caribbean shells there are good illustrations of miniatures in *Caribbean Seashells* by Warmke and Abbott and the new *Bahamian Seashells* by Colin Redfern, as well as *American Seashells*. The Bahamian book is the only one still in print.

More about sorting

To find the miniature shells in the grunge I first dry the shell grit. Then I sift a small amount (a handful) through a wire pasta strainer and save the very tiny part for last. I put the larger grit in a round cake pan - about enough to cover the pan - and sit at a high table to sort through (this saves my back a little!). I use "soft" tweezers - they don't grip too hard and break the shells. (You can get them at flea markets.) Using a head magnifier I look through the cake pan, scraping the part I've already looked at into a pile as I go.

You need to decide before you start if you're going to be picky and only keep perfect specimens, or if you're going to go for a complete list and keep holed shells and single valves of the bivalves. I just keep the perfect ones, and in fact I often discard some of those that are less than perfect when I get to the identification part, especially if I have multiple specimens.

Finally, if you can't get around to sorting the grunge right away, be sure to mark the bag or, better, put a paper inside it identifying the locality and conditions under which you got it. Believe me, you'll forget over time, and it's important to keep track for a good scientific collection.

Some Small Shells



Theodoxus luteofasciatus
West Mexico, 1/2 inch



Olivella olssoni Caribbean 1/2 inch



Trivia quadripunctata
Bahamas, 1/4 inch



Pleuroploca gigantea juvenile
3/4 inch. Note white protoconch whorls. W Florida



Seilea adamsi Sarasota, FL
1/4 inch



Tegula grunneri Bahamas
to 1/2 inch



Thala solitaria West Panama
1/2 inch