King of the Algal Realm

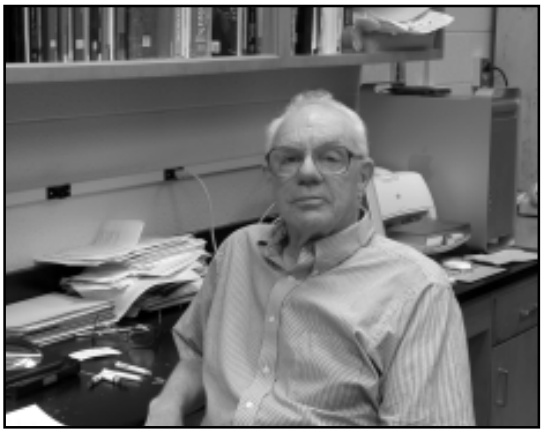
By Carol Ann McCormick, Assistant Curator, UNC Herbarium

The older I get, the more complicated life becomes. I'm not referring to balancing family with job, nor balancing checkbook with paycheck.

My 1970s-era biology texts outlined two kingdoms into which all living organisms could be placed: Plant or Animal. Current middle school science texts outline five kingdoms: *Protista* (algae, slime molds, amoebas, and critters I've never even heard of like forams), *Monera* (bacteria), Fungi (including lichens), *Plantae* (plants), and *Animalia* (animals). Some taxonomists argue, furthermore, that if one looks at bacteria found in harsh (high salt or high heat), oxygen-free environments, the number of kingdoms increases to well over a dozen! To make matters more complicated, there is controversy over the boundaries of the kingdoms: Do the brown, red, and green algae belong in *Protista* or *Plantae*? Just where do viruses belong?

As I said, life (or at least the taxonomy thereof) is getting more complicated.

Into whichever kingdom one does place the algae, the undoubted King of the Algal Realm at the University of North Carolina is Dr. Max Hommersand. Max is a phycologist—a scientist who studies algae—and his specialty is the Rhodophyta, the red algae. (Max, by the way, places red algae firmly within Kingdom Plantae.)



Dr. Max Hommersand, curator of algae, UNC Herbarium, and professor emeritus, Biology Department, University of North Carolina–Chapel Hill.

Dr. D. Wilson Freshwater of the University of North Carolina at Wilmington, and one of Hommersand's doctoral students, writes that the red algae is

> a large assemblage of between 2,500 and 6,000 species in about 670 largely marine genera that predominate along the coastal and continental shelf areas of tropical, temperate and cold-water regions. Red algae are ecologically significant as primary producers, providers of structural habitat for other marine organisms, and their important role in the primary establishment and maintenance of coral reefs. Some red algae are economically important as providers of food and gels. For this reason, extensive farming and natural harvest of red algae occurs in numerous areas of the world.

Max Hommersand travels the world to collect red algae: Namibia, Falkland Islands, New Zealand ("pretty much everywhere, with my most recent trip being last November"), Hokkaido (northern Japan), Morocco, "pretty much all the way from southern British Columbia to the tip of Baja California," and, of course, North Carolina. Upon returning to Chapel Hill, Max and his scientific collaborator and spouse, Fran, go about depositing the algal specimens in the UNC Herbarium. Some specimens are mounted on herbarium paper, some are preserved in silica gel, others are used for DNA extraction and molecular analysis. The herbarium cases that line the first floor hallway of Coker Hall hold some of 30,000 specimens of marine algae that Max curates and studies.

So just how does one become King of the Algal Realm? "I started with the Natural History Museum in San Diego," said Max in a recent article in UNC's *University Gazette*. "This was during World War II, and I took a field trip from the museum. I was 13 at the time. We arranged to go out to the Scripps Institute of Oceanography and we met with researchers. I actually made a collection that I still have. From the time I was 13, I was collecting." He earned both his B.A. and Ph.D. from the University of California, Berkeley, and has been on the faculty of UNC-Chapel Hill since 1959. Although he retired from the Biology Department in 1998, he is still actively collecting and studying red algae.

This past summer, Max traveled to Durban, South Africa, not only to collect more red algae, but also to receive the Phycological Society of America's 2005 Award for Excellence. According to his colleagues presenting the award:

> Many contemporaries of Max consider him to be one of the great phycological intellects of the last half century. He and his many collaborators have had unparalleled contributions to the fields of seaweed biogeography and red algal systematics. He has published more than 68 major scientific papers. His evolution from a classical macro-algal taxonomist to one of the worlds' leaders in using and interpreting molecular data together with more classical observations on algal morphology and reproduction is unique among his generation of phycologists.

Steve Murray writes, "today, almost 50 years following the award of his dissertation, Max is at the top of his game and continues to impact phycology."

Sources:

Anonymous. 2005. PSA Awards of Excellence, 2005: Thanarapu Vedanta Desikachary, Max Hoyt Hommersand, and Frank Eric Round. *Phycological Newsletter* 41(2): 2.

Kennedy, Lee. 2006. Hommersand receives lifetime achievement award. *University Gazette* 31(1): 8.