Stokes in the 1800s made formal but far-reaching considerations about periodic waves at the surface of water, under the influence of gravity, propagating a long distance at a practically constant velocity without change of form. For instance, he observed that the crest becomes sharper and the trough flatter, and that the so-called wave of greatest height, or the wave of extreme form, is distinguished by a 120 degree’s peaking at the crest. The irrotational flow assumption is justified in many situations, and facilitates rigorous analysis and numerical computation. But rotational effects are significant in many others. I will review recent progress in the constant vorticity setting. Numerical findings include folds and gaps in the wave speed vs. amplitude plane, and a profile enclosing multiple bubbles of fluids. (Received July 16, 2019)