FIGURE CAPTIONS

Figure 1 Bifurcation diagram for the quadratic map $x \mapsto x^2 - c$. For each of 2000 parameter values along the (horizontal) c axis, the map is iterated 1000 times starting with $x = 0$, then for the next 100 iterates a dot is plotted at coordinates (c, x). A vertical slice of the diagram at a parameter value c thus represents the asymptotic behavior found numerically for c.

Figure 2a Enlargement of the interval $1.72 \leq c \leq 1.82$ in the bifurcation diagram in Figure 1, created in the same manner.

Figure 2b Further enlargement of Figure 2a near $x = 0$, with vertical axis flipped for comparison with Figure 1.

Figure 3 Bifurcation diagram for the canonical family $x \mapsto (x^2 - a)^2 - b$. This and the following figures depict a 1500x1500 grid in parameter space. For each parameter pair, the map is iterated 800 times, and then the trajectory is examined for periodic behavior. If the trajectory is becoming unbounded, a yellow dot is plotted. If the trajectory remains bounded but is not discernibly periodic, or has period greater than 32, a white dot is plotted. If the trajectory is found to approach an orbit with low period, the dot is colored according to the period, for instance 1 is green, 2 is blue, 3 is cyan (light blue), 4 is red, 5 is magenta, and 6 is black. The same set of colors is used for periods 7–32 as well, with most of these periods being colored black to enhance the visibility of smaller shrimp.

Figure 4 Bifurcation diagram for the cubic family $x \mapsto -x^3 + 3ax + b$. (In this picture only, initial conditions with unbounded trajectories are plotted either yellow or red.)

Figure 5 Blow-up of square in Figure 4.

Figure 6 Linear transformation of parallelogram in Figure 5.

Figure 7 Bifurcation diagram for the Hénon family $(x, y) \mapsto (a - x^2 + by, x)$.

Figure 8 Blow-up of square in Figure 7.

Figure 9 Linear transformation of parallelogram in Figure 8.