What is the shape of small samples from a normal distribution?

I generated samples of size 11 from a Normal distribution with mean 3 and standard deviation 1. Here are histograms of first ten samples I generated.
What is the shape of small samples from a strongly skewed distribution?

I generated samples of size 11 from a chi-squared distribution with 1 degree of freedom. Here are histograms of first ten samples I generated.
What are the shapes of the populations from which these small samples were drawn?

Here is a histogram of a very large sample from the normal distribution with mean 3 and standard deviation 1. This illustrates the shape of the normal distribution from which the samples were drawn.

Below is a histogram of a very large sample from the chi-squared distribution with 1 degree of freedom. This illustrates the shape of the skewed distribution from which the samples were drawn.