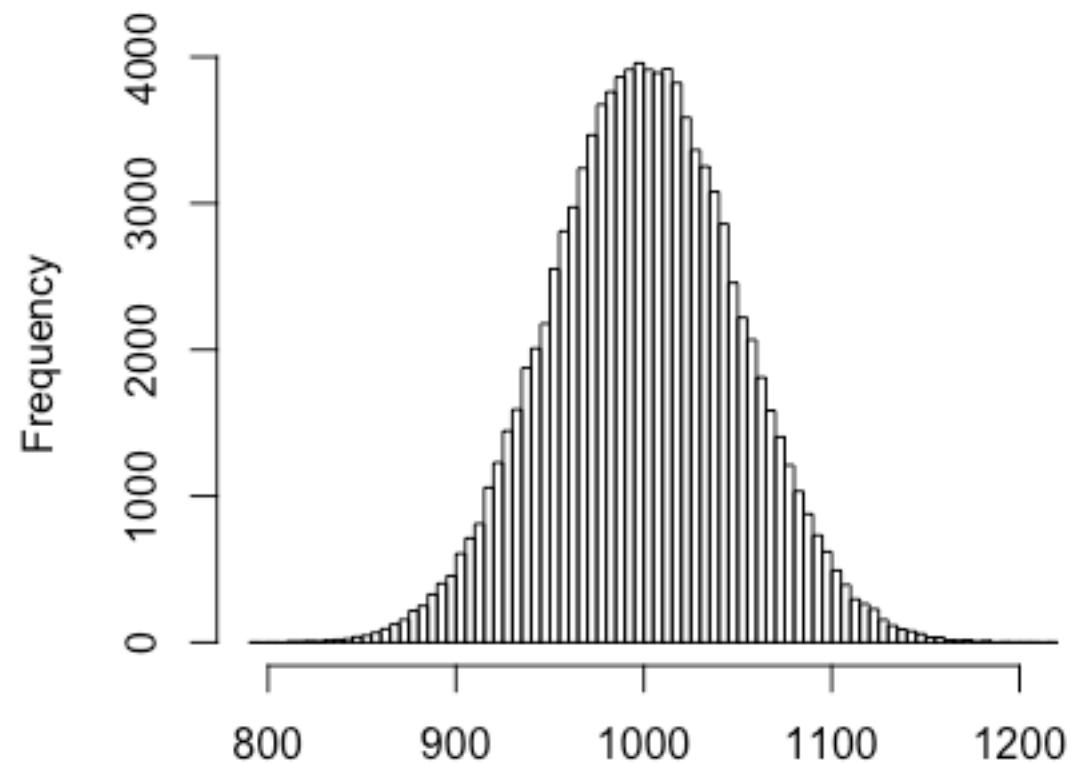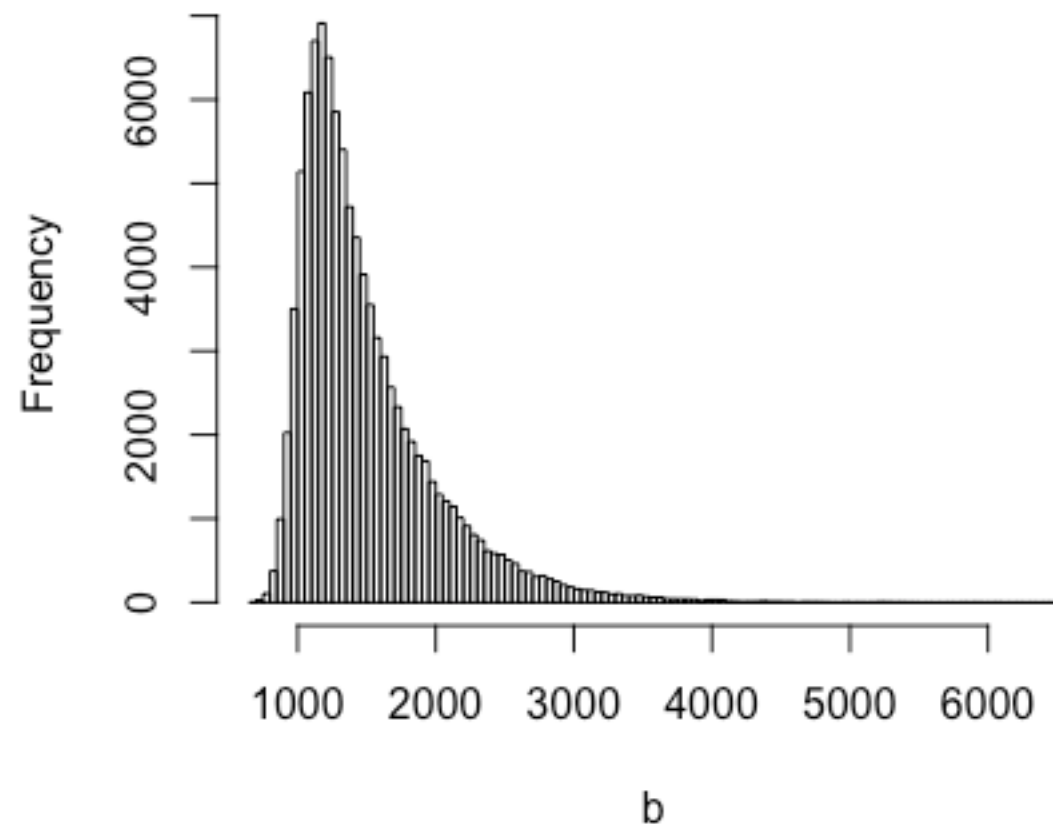## Histogram of a

Sampling from the normal distribution

```
a <- rnorm(100000, 1000, 50)
hist(a, breaks = 100)
```

Histogram of b

Sampling from the ex-Gaussian distribution

```
b <- rexGAUS(100000, mu = 1000,
   sigma = 100, nu = 500)
hist(b, breaks = 100)
```

mu and sd are the mean and sd of the normal distribution component, nu is the mean of the exponential component.

Sampling from a multivariate distribution

Imagine we want to simulate how sample size affects our ability to find a correlation between two variables in a population where we know the actual correlation between them is .5

We can do this using the `mvrnorm()` function - which works a lot like `rnorm()` except we need to specify a few extra bits of information related to the covariance structure of the two variables we're interested in - think of the covariance structure as a way of formally capturing the relationship between the two variables.