

Note that the means for *setosa* are quite different from the means for the other two species (especially for the petal variables). Also, the covariance matrices appear to differ for all three of the species. In Fig. 7.9, the objects are plotted for the petal features. Note that the first species (*setosa*) appears to be well separated from the other two species. Also notice that there is overlap for *versicolor* (labeled  $\square$ ) and *virginica* (labeled  $\triangle$ ). Objects in the overlapping region are the ones that will be difficult to classify unless they are separated on another feature. The third feature of interest in the display is the shape of the data. The plots of the *versicolor* and *virginica* data are similar in shape and mostly differ in location. The *setosa* data have a different orientation and are compressed more. This reflects the differences in the variance-covariance matrices. The three-dimensional plot (Fig. 7.9(b)) gives a similar view.