

## **Geology 111**

### **Bolton Street Cemetery Field Exercise**

#### **Introduction:**

Bolton Street Cemetery is divided into two parts, connected by the footbridge over the motorway. Because of the motorway construction, many of the stones have only been in their present location for a few years. Many stones were broken during transit – this is a weathering process too, but definitely not a geological one!

#### **Goals:**

- Gain practice recognizing different rock types
- Observing weathering processes and patterns
- Determine which rock types are more (or less) prone to weathering

#### **Getting started:**

We suggest that you begin near the Seddon memorial at the top of the cemetery. Then, make your own observations around the cemetery. Be sure to look at both main areas on either side of the motorway. It should take you about two hours to complete the exercise.

#### **Making observations:**

Systematic observations can be made on a sheet of notebook paper divided into four columns: Tombstone date, material, approximate location and comments on weathering. If you can't identify a rock, describe it as thoroughly as possible so you can recognize it each time you see it. At the least, you should be able to identify the stones as igneous, sedimentary or metamorphic. Check with a demonstrator or other instructor about your identifications, especially if the rock types are unfamiliar to you. You will want to look at the lettering on the stones, both for a date and to see how deep and clear the lettering remains. You will also want to look at how well the decorations on the stones have been preserved. Also, look over the questions below which should give you some other ideas for observations.

Remember that the cemetery is a reserve. You should not scratch the stones or deface them or the grave plots in any way.

**Report:**

The answers to the questions should be handed in at the next lab.

**Questions to guide your study:**

1. What is the oldest tombstone? What material is this stone made of?
2. What is the youngest tombstone. What material is it composed of?
3. List all the different materials that were used to make the tombstone in the cemetery (refer back to Lab 3 for some of the rock names). If you can't identify the rock, give a brief description (eg. black, fine-grained rock).
4. For each material, describe the differences in appearance between older and more recent examples.
5. What materials seem to you to be the most resistant to weathering. Why?
6. What materials seem to be the least resistant to weathering? Why?
7. Describe the processes that seem to be the most important in weathering the gravestones. Which rock types are affected by each of these processes?
8. Of the people whose graves you saw, who was born the furthest from Wellington?
9. What is the most interesting story you saw recorded on a tombstone?
10. How has weathering affected other materials in the cemetery besides the tombstones?

Other notes: