The south alcove in the vest gallery illustrates the great group of the brachiopods so important in the Palaeozoic era. The structural case in the front of the alcove contains a good series of prepared specimens illustrating the anatomy of the brachiopod shell.

The molluscs occupy the next three alcoves—pelecypods or clams, cephalopods in two main groups, the nautiloids of the Palacozoic and the ammonites of the Mesozoic, and the gastropods.

The last alcove contains the arthropods or invertebrate animals with jointed legs, including the trilobites, merestomes, insects, etc. A small collection of fossil fish is shown along the north wall of this alcove.

The continuous series of cases along the west wall of the east gallery contains specimens to illustrate in a limited way the geology and palaeontology of Canada. From left to right the greater Canadian formations are shown in ascending order from the ancient crystalline Pre-Cambrian to the Post-Glacial.

Of the larger air-breathing creatures two interesting types of water reptiles are mounted on the south wall of the west gallery. A collection of typical bones of dinosaurs from Alberta is shown in the case at the head of the stairs. Here also is part of the skeleton of the huge elephant-like creature, the mastodon. The related animal, the mammoth, is represented by tusks; extinct buffaloes and musk oxen by a few crania; and the great extinct deer, known commonly as the Irish deer, by the cranium and antlers.