

## GEOLOGICAL TIME SCALE

| Era                               | Period                                                  | Characteristic Life                     | Estimated Time in Years |
|-----------------------------------|---------------------------------------------------------|-----------------------------------------|-------------------------|
| Cenozoic                          | Recent<br>Pleistocene                                   | Man                                     | 1,000,000               |
|                                   | Pliocene<br>Miocene<br>Oligocene<br>Eocene<br>Paleocene | Mammals and<br>Modern Plants            | 60,000,000              |
| Mesozoic                          | Cretaceous<br>Jurassic<br>Triassic                      | Reptiles                                | 200,000,000             |
| Palæozoic                         | Permian<br>Carboniferous                                | Amphibians and<br>Lycopods              | 500,000,000             |
|                                   | Devonian<br>Silurian                                    | Fishes                                  |                         |
|                                   | Ordovician<br>Cambrian                                  | Higher<br>Invertebrates                 |                         |
| Proterozoic<br>(late Precambrian) | —                                                       | Primitive<br>Invertebrates<br>and Algae | 2,000,000,000           |
| Archæan<br>(early Precambrian)    | —                                                       | Nil                                     |                         |

**The Canadian Shield.**—The rocks of the Shield are mainly of Precambrian age. They form a continental mass which in Precambrian time extended out in all directions beyond the present limits of the Shield. Many times during the succeeding Palæozoic and Mesozoic Eras the Shield was at least partly flooded by seas which advanced over it and later retreated. The sediments that accumulated in these seas were largely swept away by later erosion.

From the beginning of the Cambrian period to the present, the Shield has been a stable mass. During this time it has been elevated and depressed but has not been affected by mountain-building deformation. Its earlier or Precambrian history, however, was very complex and included periods of volcanism, sedimentation, folding, mountain-building and igneous intrusion, and also long intervals of quiescence in which erosion was the active process.

Precambrian time has been divided into two eras, Archæan or early Precambrian and Proterozoic or late Precambrian. As geological mapping has progressed in different areas in the Shield it has seemed that the Archæan was divisible into two or more large units. It has been impossible however to correlate the oldest unit in any one place with the oldest in a different area. Lack of fossils in the Precambrian has made correlation between separate areas most uncertain and relationships between formations in any large area can be established only where rock outcrops are numerous. In the Rainy Lake District, Ontario, the oldest rocks recognized are altered sedimentary types (Couchiching series). In most other