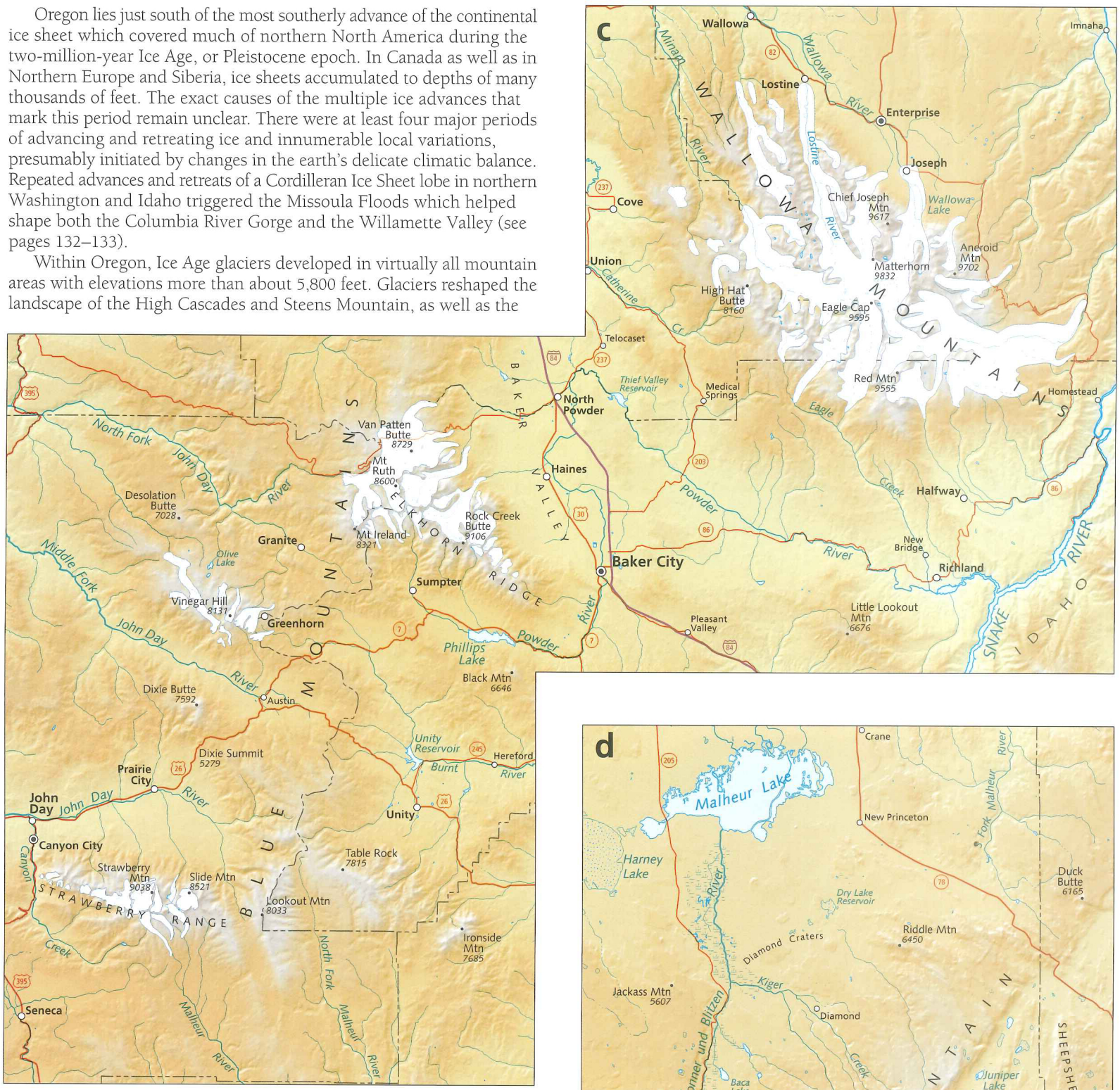
Oregon lies just south of the most southerly advance of the continental ice sheet which covered much of northern North America during the two-million-year Ice Age, or Pleistocene epoch. In Canada as well as in Northern Europe and Siberia, ice sheets accumulated to depths of many thousands of feet. The exact causes of the multiple ice advances that mark this period remain unclear. There were at least four major periods of advancing and retreating ice and innumerable local variations, presumably initiated by changes in the earth's delicate climatic balance. Repeated advances and retreats of a Cordilleran Ice Sheet lobe in northern Washington and Idaho triggered the Missoula Floods which helped shape both the Columbia River Gorge and the Willamette Valley (see pages 132–133).

Within Oregon, Ice Age glaciers developed in virtually all mountain areas with elevations more than about 5,800 feet. Glaciers reshaped the landscape of the High Cascades and Steens Mountain, as well as the



Wallowa, Elkhorn, Strawberry and Greenhorn Mountains. The many deep valleys descending from the Cascade crest (see pages 120–121) are evidence of the land-shaping power of moving ice. Distinctive U-shaped glacial valleys are illustrated on page 129 (Steens Mountain) and 124–125 (Mount Hood and the Columbia Gorge). Wallowa Lake, a classic moraine feature, is shown on page 247. In the Northern Willamette Valley, fan-shaped deposits of glacial debris radiate into the valley from the western edge of the Cascades, displacing the Willamette River to its current westerly path. In the past 12,000 years glaciers have disappeared from all but the highest elevations in Oregon; remnants persist on Mount Hood and the Three Sisters.