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the profound U-shaped valleys of the main fiords and rivers, and their more V-shaped tributaries. A typical example of such a valley is that of the Cheakamous—which is nearly 4000 feet deep on the west side of the Garibaldi area, and after uniting with the Squamish forms the fiord of Howe Sound. These deep valleys have evidence of two distinct stages of formation, an earlier V-shaped gorge, in the lower part of which a U-shaped valley has at a later time been excavated. The resulting profile is as shown in the accompanying diagram. (Fig. 1). In some cases a large outer U-shaped valley seems to contain a distinct inner valley of comparatively shallow depth.[•]



The date at which these greater canyons were cut has been fixed by Willis and Smith[†] as probably interglacial for the Cascade region of Central Washington, or possibly pre-glacial. The lines of drainage which they represent are said by LeRoy[‡] to have been determined in early Cretaceous or late Jurassic time, but whether this be true or not it is evident that the valleys as they now exist are much later than the Miocene (or at all events post-Eocene) lavas, since the mature erosion of the Black Tusk Meadow stage (Entiat or Methow) was developed after the lavas and before the cutting of the main valleys. From evidence collected near Vancouver, however, it appears that both the periods of glaciation of which we have distinct evidence in the region were later than the excavation of mese valleys, that is, there have been two extensions of the glacial ice, with an intervening recession, since the valleys reached their present depth. There is no evidence known to the writer of any earlier ice advances in the region unless some glacial sections to be seen at Departure Bay are to be considered conclusive § It would seem more probable that such very large valleys represented

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This stage probably correlates with the Twisp and Chelan stages of Willis and Smith.
†Op. Cit.

^{10.} E. Le Roy, Geol. Surv. Can. No. 996.

Burwash, Contributions to Canadian Biology, 1906-1910, p. 301, published by the Department of Marine and Fisheries, Ottawa.