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The Rhône glacier in the Pleistocene.

The paper describes the Upper Quaternary of the region formerly covered by the Great Glacier of the Rhône, i.e. the Canton of Vaud and some fringe areas, with the exception of Savoy, which was studied by Arn (1984).

Two glaciation periods were involved, Riss and Würm, the latter more extensively. The Pliocene and the Lower Quaternary were periods of substratum erosion, due to the scouring action of the glaciers. This substratum was subsequently covered by the Rissian and Würmian glaciers.

The Würm Period has been divided into two main phases: the earlier (glacial invasion), which ends around 20í000 BP, and the subsequent recessional stage (retreat and melting of the Great Glacier).

The former is characterized, aside from the ground moraine, by layers of sand and gravel dating from 50í000 to 30í000 BP, which fill channels formed during the Riss or the Lower Würm Period.

The second, recessional stage, involves periods of stagnation, of which the most important, although difficult to date, is that of Montosset (Arn 1984) and the former Serine (Badoux 1988). Then the speed of deglaciation increases, the glacier retreats from the area of Lyon and the Lemanic basin and withdraws behind the hills of Sierre. The north-eastern front, which had reached the moraine ramparts of Wangen, east of Solothurn, gives way to the «Great Lake of Solothurn» (Favre 1883), reduced by alluviation to the present lakes of Bienne, Neuchâtel and Morat.

Between 11í000 and 10í000 BP (Egesen Phase), a sudden cooling of the climate caused the local glaciers to reappear in the region of the Jura and the Rhône Valley. This episode was short-lived. It marked the beginning of the Holocene, a period not studied in this paper.

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