



BĀMIĀN I. THE BĀMIĀN BASIN

i. The Bāmiān Basin

The town of Bāmiān owes its rise to the presence of a tectonic depression, the Bāmiān basin, in the central highlands of Afghanistan and to the facilities for communication which this provides. The basin, 50 km long and at the most 15 km wide, has a roughly west-east trend and is flanked on the north by the Kūh-e Sang-e Časpān (4,400 m), the westernmost extension of the Hindu Kush, on the south by the Kūh-e Bābā (5,135 m). It is one of a number of intramontane basins aligned along a major tectonic fracture (the Herat fault). The Ġūrband basin to the east and Yakāōlang basin to the west are continuations of the same depression.

Sedimentation of the Bāmiān basin began early in the Cenozoic era (mid-Eocene “Dokani formation” of lacustrine limestones, on average 50 m thick). The basin was derived from the post-Cretaceous erosion surface to which belong the highest parts of central Afghanistan. In the main, the basin is filled with Oligocene sediments (“Zohāk formation” of sandstones and conglomerates 1,000 m thick, followed by the fluvio-eolian “Buddhas formation” 70 m thick and the concomitant “Qaḷ’aja formation” of volcanic and sedimentary material) and with Miocene sediments stripped from the adjacent mountain ranges (“Ġolġola formation” of fluvio-paludal conglomerates and limestones). Compression in the Ponto-Pliocene period has left traces, mainly in the east of the basin, in the form of extrusions of the pre-Cenozoic basement marked off by “piano-key” faults. The whole basin was later reshaped, in the Quaternary era, into a series of levels carved in the Cenozoic formations. The



highest levels are piedmont glacis formed by erosion during climatic oscillations which facilitated lateral “planation.” The lowest levels are solely alluvial terraces of climatic origin formed in phases of ice-cap expansion in the surrounding mountains.

The Bāmīān basin is thus a morphologically and structurally complex unit. Its altitude ranges from 2,500 m to 3,000 m. The alluvial bottom (called the Tagāō) is no more than a narrow strip with a length of some 20 km and a width which varies between 1 km and 2 km. Since the upthrust of the Kūh-e Bābā was greater and probably took longer than that of the Hindu Kush, while the line of greatest subsidence gradually shifted northward, the basin is remarkably unsymmetrical in its morphology and structure, having a long slope on the south side and a much shorter slope on the north (Hindu Kush) side. The present river system is similarly unsymmetrical, with longer and more copious streams on the south side because the north-facing slope of the Kūh-e Bābā is better watered than the south-facing slope of the Hindu Kush.

As for the climate, the bottom of the basin appears (from observations taken over three years only) to have a régime of the continental high-altitude type, with severe winters (January average -5.6°C , July average 17.4°C) and semi-arid characteristics (annual average precipitation, 148 mm; maximum in one year, 194 mm, minimum 88 mm; rainiest season, spring). Dry farming is pursued on the mountain sides but is not feasible in the bottom of the basin, where irrigation is essential for plant and crop growth (wheat, alfalfa, potatoes, also some apricot and apple orchards, poplar and willow plantations, etc.).

The rise of a town in this harsh environment was not due to agricultural prosperity but resulted from the value of the communication facilities. Bāmīān is a key point for control of the roads and passes through the Afghan mountains linking Bactria to the Kabul basin and northwestern India. To the east, the Šebar pass (2,985 m) gives easy access to the Ġūrbānd troughs which lead to the Panjšīr valley and the northern part of the Kabul basin. To the north, the Bāmīān basin is drained by the Sorḳāb (upper course of the Kondūz river), but its narrow gorges do not provide easy passage. The traditional and always busiest road takes a more easterly route through valleys of transverse tributaries of the Sorḳāb and then over the Āq Rebāṭ, Dandānšekān, and Qara Kotal passes (3,100, 2,700, and 2,850 m), after which the old road follows the upper valley of the Balk river while the modern road follows the Ḳolm river by way of Haybak (in Samangān province). The traditional Šebar pass road was



made fit for automobiles in the 1920s and continued to be the busiest route over the Hindu Kush until the construction of the Sālang tunnel in 1964 shifted the traffic to a route usable in winter. Bāmīān's position midway between Bactria and Peshawar at the approach to the most difficult passes and the resultant opportunities to purvey provisions and accommodation for caravans explain why it became a particularly important stopping place and a chosen site for monumental religious sanctuaries. In recent times several other routes beside the ancient highway have come into use, making Bāmīān a regional road hub. To the southeast, a shorter route to Kabul is provided by a new road over the Hājīgak and Onay passes (3,700 m and 3,350 m), with a steep descent between them into the upper Helmand (Hīrmand) valley (traditionally avoided by caravans). To the west, a road of purely local importance gives access to the Yakāōlang basin, whence there is a link to the motorable direct road through the central mountains and the upper Harīrūd valley to Herat.

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