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KARAJ RIVER

KARAJ RIVER (Rud-e Karaj), the second major permanent river of the central Iranian plateau after the Zāyandarud (see ISFAHAN i–ii). The river runs 245 km, with an average slope of 0.8 percent, average annual discharge of 499 mcm (million cubic meters), and precipitation of 625 mm; the basin area is 2,800 km^2. It flows from the central Alborz through the city of Karaj and the irrigated plain of Šahriār to the salt lake (Daryāča-ye namak) in the Kavir-e Masila east of Qom (Jaʿfari, pp. 388-89). In 1961, a large concrete dam (see AMIR KABIR DAM) was built on the river for the water supply of Tehran and for electricity and irrigation.

The upper valley of the river was called “Laura” (i.e., Lawra: *Historical Gazetteer of Iran* I, pp. 417-18) by many travelers who visited the central Alborz during the Qajar era, but this name is no longer in use. The main tributary of the Karaj River runs in the valley of Dizin (Welāyat-rud and Vāranga-rud, running from the height of Qolla-ye Now, 3,490 m); it joins in Gačsar the affluent coming from Kandovān. Other tributaries are the Saydak Rud coming from Kuh-e Kahār (4,108 m) on the right side of the river at Sirā, and on the left bank, the river of Morud and the river Šahrestānak running from east to west on the north side of the Towčāl (3,957 m). Below the Karaj dam, the tributaries are very small, seasonal rivers (Ḵor and Kondor; Wezārat-e Defāʿ, 2004, s.v. “Karaj-rud”). Due to the large amounts of rainfall (annually 981 mm at Kandovān), a large proportion of the precipitation falls as snow in the autumn and winter months. The water is held in the uplands in deep snowfields until spring and early summer (see barf). In the upper valley, the

minimum discharge is not in summer but in December and January, and the maximum is in April and May (Jaʿfari, pp. 388-89).

The upper Karaj valley (Asārā *dehestān*) is inhabited by a Caspian (*gilaki*) population, living in villages famous for their apple orchards (Morud, Šahrestānak) and pastoral activities (cf. Borjian, p. 291; Hourcade, pp. 229-40; Hourcade and Tual, p. 22). Until the middle of the 20th century, this part of the valley above 2,000 m was heavily frequented in the summertime along caravan roads improved under Nāṣer-al-Din Shah by the Austrian general Albert Gasteiger (known as Gasteiger Khan; see also Pohanka), through the pass of Kandovān and Hezāršām. For the people coming from Tehran, this passage was the most direct route to reach Čālus on the Caspian sea or the royal hunting resorts of Kalārdašt (see kalārestāq and kalārdašt; see also de Planhol, 1963, pp. 37 ff.). In 1880 Nāṣer-al-Din Shah built the palace of Šahrestānak in this busy upper valley, with its convenient direct access to Tehran. Since the lower part of the valley above Karaj is a narrow gorge without any safe road, travelers going from Tehran to the Caspian sea preferred to use the pass of Emāmzāda Dāʾud above Kan. An alternative way was the valley of Jājrud and the pass of Āhār to Šahrestanak. The upper Karaj valley became a very popular summer resort (*yeylāq*) for the people of Tehran after the opening in 1938 of the motorway from the city of Karaj to Čālus through the path and tunnel of Kandovān. A modern hotel was built in Gačsar under Reza Shah; the Dizin ski resort opened in 1970.

In the gorge a few kilometers above Karaj, the Amir Kabir multipurpose, concrete-arch reservoir dam, was built in 1961, according to the new development policy of the Second Development Plan of Iran (1955-62; see BARNĀMA-RIZI). One of the largest dams in the Middle East at that time, it measures 180 m in height and 390 m in length, with a reservoir lake 14 km long that has a capacity of 205 million m^3. Because of overgrazing and deforestation attendant on the development of Tehran, the plant cover of this high mountain area is very sparse, increasing the danger of snow avalanche in winter and soil erosion in spring. A large program of land management was implemented in the 1970s to prevent erosion and accumulation of alluvium in the reservoir lake (Hedjazi and Sabeti; Dedual). The production of the electric plant (75,000 kw) was designed for use in Tehran and the new (1960s) industrial complex in Karaj. The water, originally for irrigation purposes, was in fact used for the water supply of Tehran, where a piped water system was started in 1950 (Baldwin, p. 82; Beaumont, pp. 418-31). Before being

transported from the dam to the city by two pipelines, the water of Karaj (Āb-e Karaj) had been carried to Tehran by a ditch constructed by Hājji Mirzā Āqāsi in 1862, from Bilaqān (elev. 1,400 m) to the northern suburbs of the Qajar capital (Habibi and Hourcade, p. E33). This canal was soon abandoned, but it was reopened in 1927-30 (length 52 km, with 20 km of tunnel) with a capacity of 1.3 m^3/sec., equal to all the *qanāt*s (see KĀRIZ) of Tehran (de Planhol, 1968, pp. 409-67).

The middle Karaj River and valley begins at the city of Karaj, where the river is divided into several branches on an alluvial fan and is used for irrigation. The main stream of the Karaj River runs southeastward in the plain of Šahriār. No water remains in the main stream after urban and agricultural use, and the huge project of 1960 for irrigating 25,000 ha of farmland was never completed because of the inadequate water left for agricultural purposes. As a result of this project, several old *qanāt* dried up due to overconsumption; and the more modern farms resorted to deep wells with motorized pumps. Due to low agricultural productivity, many small landholders who had received fields in the Land Reform of 1963 sold their land to new urban migrants.

The lower Karaj River valley begins below Eslāmšahr and Ḥasanābād, where the water only floods occasionally in spring. Small hamlets are settled along the dry river up to Najafābād. Below this village the Karaj River valley heads southward to the Kavir, after having joined the Jājrud, and Rud-e Šur (Jaʿfari, pp. 388-89).

BIBLIOGRAPHY

George Baldwin, *Planning and Development in Iran*, Baltimore, 1962.

Peter Beaumont, “Water Resource Development in Iran,” *The Geographical Journal* 140/3, 1974, pp. 418-31.

Idem, “ĀB iii. hydrology and water resources of the iranian plateau,” in *EIr*. I, 1982, pp. 28-39.

Habib Borjian. “Mazandaran: Language and People,” *Iran and the Caucasus*

8/2, 2004, pp. 289-321.

Eduard Dedual, “Zur Geologie des mittleren und unteren Karaj-Tales Zentral-Elburz (Iran), 1967,” Universität Diss., Zürich, 1967.

L. S. Fortescue, “The Western Elburz and Persian Azarbaijan,” *The Geographical Journal* 63/4, 1924, pp. 301-15.

M. Habibi and B. Hourcade, *Atlas of Tehran Metropolis* I, Tehran, 2005.

B. Hourcade “Migrations de travail et migrations de loisir dans l’Elbourz de Téhéran,” *Revue de géographie de Lyon* 3, 1978, pp. 229-43.

B. Hourcade and A. Tual, *Documents pour l’étude de la répartition de quelques traits culturels dans la région de Téhéran, 1’Alborz central*, Paris, 1979.

R. Hedjazi and H. Sabeti, *Guide to Natural Vegetation of Elburz (Karaj-Tchalus Profile)*, Karaj, 1961.

ʿAbbās Jaʿfari, “Rud-e Karaj,” in *Gitāšenāsi-e Irān II: Rudhā va rud-nāmahā-ye Irān*, Tehran, 1997, pp. 388-89.

X. de Planhol “En pays caspien, Kalārdasht et Takht-e Soleymān,” in *Recherches sur la géographie humaine de l’Iran septentrional*, Paris, 1963, pp. 37 ff.

Idem, “Geography of Settlement,” in *Camb. Hist. Iran* I, Cambridge, 1968, pp. 409-67.

R. Pohanka, *Der Khan aus Tirol: Albert Joseph Gasteiger Freiherr von Ravenstein und Kobach, Diplomat, Ingenieur und Forschungsreisender am persischen Hof, 1823-1890*, Wien, 1988.

L. H. Wells, “From Teheran towards the Caspian,” *The Geographical Journal*, 8/5, 1896, pp. 501-16.

Wezārat-e Defāʿ, *Fahrang-e joḡrāfiāʾi-e rudḵānahā-ye kešvar; Ḥawḍa-ye ābriz-e Iran-e markazi*, Tehran, 2004.