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AZARBAIJAN I. GEOGRAPHY

Azarbaijan

i. Geography

I. The geographic concept of Azarbaijan.

A. The name of the country is derived from that of the Achaemenian satrap of Media Atropates (Strabo 11.523) who was retained by Alexander in the government of western Media and preserved it under his successors, thus founding a principality which maintained itself in a state of independence or at least semi-independence until the second century B.C., and was only definitively reunited with the Persian empire under the Sasanian king of kings Šāpūr I along with Armenia (cf. Markwart, *Ērānšahr*, pp. 111-12). From the name of this man comes the Greek forms (Atropatene, Atropatios Mēdia [Strabo, loc. cit.], Tropatene [Ptolemy 6.2], the Armenian form Atrpatakan (Movsēs Xorenacʿi, cf. Markwart, *Ērānšahr*, pp. 108-14), the Middle Persian form Āturpātakān (cf. Schwarz, *Iran*, p. 960), the New Persian forms Āḏarbāyjān and Āḏarbāygān. The medieval Arab geographers were already giving it different meanings, deriving it from the personal name Āḏarbāḏor forging popular etymologies, like “fire temple” or “guardian of the fire” (from *āḏar*, “fire” and *bāykān*, “guardian,” Yāqūt, I, p. 172).

B. From antiquity until the time of the Arab conquest the name of this country, an independent principality or province first under the Sasanians, then of the caliphate, was thus perceived as that of a political circumscription whose

frontiers were always changing as a result of political occurrences. However, the heart of the area was always the mountainous country to the east of lake Urmia (Reżāʾīya). The ancient summer capital was located there at Ganzaca (Ganzak) (Strabo, loc. cit.), the present-day Taḵt-e Solaymān. At the time of the Arab conquest, the (summer) capital was located at Ardabīl. In the third century B.C., Atropatene had probably extended toward the north to the Pontic regions Phasia and Colchis (Markwart, op. cit., p. 108) but normally its boundaries were limited by the basin of the Araxes. In the Middle Ages, Masʿūdī (*Morūj* I, p. 100.18) indicates that Azarbaijan extended to the north of the river. To the northeast, the soil basins of Moḡān (the plain to the south of the Araxes) were included in Azarbaijan by Masʿūdī and by Ebn Ḵordāḏbeh, but were excluded by other geographers. Varṭān on the Araxes was the farthest locality attached to Azarbaijan to the northeast, according to Ebn al-Faqīh (p. 286). In the third century of our era, the western frontier bordering Armenia was moved by the union of the cantons of “Persian Armenia” with Azarbaijan to the west of the lake (Markwart, op. cit., pp. 109-10) and was subsequently localized in the mountainous countries between the two lakes Urmia and Van. To the south Azarbaijan extended at one period to Sīsar, present day Sanandaj. Subsequently, its main eastern boundary was situated at the bed of the Safīd-rūd, which separated it from the province of Jebāl and then at the mountain chain of the western Alborz which separated it from the humid, forested regions of Gīlān.

Thus, at the time of the early Arab geographers, Azarbaijan consisted essentially of a northwestern fragment of the high interior Iranian plateau within limits that did not differ much from the frontiers of present-day Iran and that, in any case, from the side of the lowlands of the Transcaucasia, scarcely exceeded the bed of the Araxes. The imprecise and sometimes contradictory information given by Yāqūt in the beginning of the 7th/13th century, occasionally extends Azarbaijan to the west to Erzinjan (Arzanjān). On the other hand in certain passages, he annexes to it, in addition to the steppes of Moḡān, all of the province of Arrān, bringing the frontier of the country up to Kor, indicating, however, that from this period the conception of Azarbaijan tended to be extended to the north and that its meaning was being rapidly transformed.

C. The Turkicization of Azarbaijan: an ethnic region. This country of crude mountain peoples, still poorly acculturated to the rest of the Iranian world (even if it is an exaggeration for Moqaddasī to affirm [p. 375.2] that in Sabalān

seventy different dialects were spoken), underwent, as a result of the Turkish invasions, a profound ethno-linguistic transformation. The essential cause for this was the geographical situation of Azarbaijan, where the Turkish tribes newly arrived from Central Asia assembled for the holy war on the western frontiers of the Islamic domain. They had traveled the route of the steppes, overrun by the nomads and opposed by the Christians of the humid, wooded lowlands of Christian Georgia in western Transcaucasia and of the empire of Trebizond in the Pontic forest. Azarbaijan at the end of the major migration route of the nomad tribesmen—along the dry southern watershed of the Alborz to the south of the Caspian forest—was an area where the newcomers could collect and become dominant.

But the process was long and complex. Although isolated Turkish groups had doubtlessly appeared in Transcaucasia repeatedly from the beginning of the seventh century A.D., it was only in the 5th/11th and 6th/12th centuries that the first massive settlements occurred. This happened in particular in the semi-arid steppes of eastern Transcaucasia, north of present-day Azarbaijan, in the provinces of Arrān and of Moḡān, but outside the state of the Kesranids of Šervān, which remained relatively untouched. The Turkicization of these northern centers was rapid. Even before the Mongol invasion, the Turkmen "swarmed like ants" in Arrān and Moḡān (Nasavī, *Sīrat al-Solṭān Jalāl-al-dīn*, ed. Houdas, Paris, 1891, p. 225). Moḡān (Mūqān), still known as the name of a city by the first Arab geographers (Ebn al-Faqīh, p. 285; Eṣṭaḵrī, p. 182; Ebn Ḥawqal, p. 239; cf. Schwartz, *Iran*, pp. 1089-94), was in the beginning of the 7th/13th century according to Yāqūt (IV, p. 686) only a region where the villages alternated with pasturage and populated exclusively by Turkmen. In the second half of the thirteenth century, according to Qazvīnī (*Kosmographie*, ed. Wüstenfeld, Göttingen, 1848, II, p. 379.8) it was no more than a winter passage for Turkman nomads. In this period Turkmen were found to the west of Lake Urmia and some groups were found in the area of Kurdistan in the region of Šahrazūr, but, generally, there were few throughout the south of Azarbaijan, where the effect of the accumulation along the frontier did not have any effect.

At the time of the Mongol invasion, most of the first arrivals had passed on to Anatolia, but new groups of Turks or Turkicized Mongols are to be noted in numbers in southern Azarbaijan, in the regions of Marāḡa, Ḵoy, around Lake Urmia, as well as in the Jebāl in the regions of Qazvīn and Zanjān. In addition, after the death of Abū Saʿīd, the Turks who had moved to Anatolia began to

return to Iran (Jalāyerī and Čūpānlū). This movement continued under the Qara Qoyunlū and the Āq Qoyunlū, and the linguistic Turkicization had by then certainly progressed to an advanced degree. But the decisive period no doubt occurred in the Safavid period with the adoption of Shiʿism as the state religion of Iran, while the Ottoman state remained faithful to Sunnism. Soon Shiʿite propaganda among the tribes located outside of the urban centers of orthodoxy, prompted the Anatolian nomad tribes to return to Iran. This migration began in 1500 when Shah Esmāʿīl assembled the Qezelbāš tribes in the region of Erzincan. The attraction made itself felt as far as the region of Antalya, whence came the Tekelū, who were to play an important role in Iran, in mass along with 15,000 camels. Nomads undoubtedly constituted the majority of the movement, though it also affected semi-nomads and even peasants. At the end of the 11th/16th century, Shah ʿAbbās I's organization of the great confederation of the Šāhseven precipitated the massive entry of Turks into Azarbaijan, and the area became definitively Turkish in this period, with the exception of some isolated Tati-speaking communities. From the time of Shah ʿAbbās to that of Nāder Shah, many Azeris were moved eastward into Khorasan to guard the frontier against the Uzbeks. But this did not influence significantly the definitive settlement of the Turkish nomads. During this period the Azeri language came to be spoken as far east as Abhar, near Qazvīn (Chardin, *Voyages…en Perse*, ed. Langlès, Paris, 1830, IV, pp. 179-80; the observations date from 1665-77). At the time of Evlīā Čelebī, who traveled in Azarbaijan in 1645, Turkish, largely predominant in Tabrīz among the lower classes (*Seyâhatnāmesī*, ed. Z. Danişman, 15 vols., Istanbul, 1969-71, esp. III, p. 247), was spoken in Qazvīn along with Persian. The delimitation of the languages on the Iranian plateau has on the whole remained the same until the present time. Elsewhere, however, the progress of Azeri Turkish has continued until the present. In the course of the last two generations the entire southern part of Iranian Ṭāleš, the coastal fringe of the Caspian, has adopted Turkish as the common language of commerce and in some places it has become the mother tongue of the majority of the population. This was a consequence both of a return of Azeris to northern Azarbaijan after the Russian revolution and of a large present-day migration of Turks of the high leeward slope of the Alborz who have settled on the shore plain (M. Bazin, "Le Tâlech et les Tâlech: Ethnie et région dans le Nord-Ouest de l'Iran," *Bulletin de l'Association de géographes français*, no. 417-418, May-June, 1974, pp. 161-70). The area of the Azeri language in Iran, even omitting the numerous Azeri minorities scattered in various provinces (especially Khorasan) and other Turkish-speaking minorities of Iran (Turkmen, Ḵalač, Qašqāʾī), thus goes well

beyond the political boundaries of the provinces of Western Azarbaijan (center: Urmia [Reżāʾīya]) and Eastern Azarbaijan (center: Tabrīz). (Their respective populations, according to a 1976 census, were 1,408,875 and 3,194,543 inhabitants.) The linguistic area comprises, along with most of the province of Zanjān (579,000) important portions of the central province (to the west of, and around, Qazvīn) and even of the province of Gīlān. The Azeri-speaking population in northwest Iran today probably exceeds 6 million persons. This human geographical area defines most exactly the geographical concept of Azarbaijan today.

In the region of the Soviet Socialist Republic of Azarbaijan, the same process of linguistic and cultural assimilation has taken place. The total population of Soviet Azarbaijan (86,600 km^2), which includes the autonomous Republic of Nakhichevan (which separates Soviet Azarbaijan from Soviet Armenia) and the autonomous oblast of Upper Karabakh, counted, in 1979, 6,028,000 inhabitants (of which 3,195,000 [53 percent] were urban) as compared to 3,700,000 (1,770,000 urban population) in 1959 and 2,340,000 (570,000 urban) in 1913. In this total, the proportion of Azeris, which was 67.5 percent in 1959, rose to 73.82 percent in 1970 and 78.1 per cent in 1979; this increase reflects the now almost complete assimilation of the Iranian-speaking populations of northern Ṭāleš. In the Armenian minority (9.42 percent in 1970 from 12 percent in 1959) and various Caucasian minorities the same assimilation is in progress. At the same time, in Soviet Azarbaijan the proportion of the population of Russian nationality decreased from 13.6 percent in 1959 to 10 percent in 1970 and 7.9 percent in 1979. In addition, more than 750,000 Azeris are settled outside Soviet Azarbaijan itself. The total number of Azeris in the Soviet Union rose to 4,380,000 in 1970 and 5,477,000 in 1979 (numerically, the seventh largest nationality). Their relative weight (but not their importance) is considerably less than that of the Azeris in Iran. (For the statistics see Y. V. Bromleĭ et al., *Processus ethniques en U.R.S.S.*, Moscow, 1982, passim, more up to date than the Russian edition of 1975.)

Thus the Azeri people, being the result of a blending process in which the Turanian elements are few (Schoch, *Beiträge*), is the product of a multi-secular cultural Turkicization that is still actively pursued. Although split in two by a recent and artificial boundary, the Azeri ethnic group remains vigorous, and exceeds on all sides the territorial limits accorded to it. Nevertheless, both in Iran and the U.S.S.R., the political-administrative entities that today bear the name Azarbaijan constitute the nuclei of this ethnic region.

II. Physical geography.

Stretching from the extreme east of the Caucasus to the north to the northern confines of the Zagros to the south, Azarbaijan includes natural environments of great contrasts. Between the high mountain blocks, where sufficient rain permits rain-fed agriculture, lie low basins, where arid climatic conditions prevail and where the agriculture depends on irrigation.

A. Morphological unities, sharply defined in Soviet Azarbaijan, are much less clear in Iranian Azarbaijan.

1. To the north, Soviet Azarbaijan extends to the southeastern extremity of the chain of the Caucasus, the marginal border of the Russian platform, resulting from an Eocene folding supplemented by vertical movements at the end of the Tertiary period. A vast and complex anticlinorium running northwest to southeast, with a Jurassic-Cretaceous sedimentary osseous frame, cut by longitudinal faults, constitute its axis, with high summits chiseled by the Quaternary glaciation (Bābā-Jūzī, 4,480 m, on the frontier of Daghestan; Bābā-dāḡ, 3,632 m). Overthrusts and imbricate structures appear on the southern slopes. The southeastern termination of the Caucasus, in the hills of Gobystan (400 m) and the peninsula of Apsheron are marked by structures of short domes with which are associated mud volcanoes and diapirs (piercement folds) with petroleum beds.

2. The plain of the Kura (Kor) and the Araxes (Aras), the eastern extremity of the Transcaucasian trench, is an alluvial basin that was filled primarily in the Quaternary, in a regular slope from west to east, divided by large watercourses: the steppe of Šervān to the north of the Kura; the steppe of Karabakh and the steppe of Milskaja between the Kura and Araxes; the steppe of Moḡān to the south of the Araxes, the last partially extending into Iranian territory.

3. The lesser Caucasus, running in the general direction of northwest to southeast like the Caucasus, has a more complicated structure than the latter. The Cretaceous and Jurassic sediments are mixed with numerous secondary and tertiary granite batholiths and ultrabasic intrusions (gabbroes, perioditites) that are aligned along the chains of the Shachdag (Ginaldag, 3,367 m; Gyamyshdag, 3,724 m) and of Karabakh (Dalidag, 3,616 m). The whole system culminates in the Sang-e Sūr mountains (Mt. Kopydzhikh, 3,916 m), with material that is essentially Eocene (volcanic-sedimentary facies); their

southwest slopes define the autonomous region of Nakhichevan (Naḵjavān), beyond the Soviet Socialist Republic of Armenia. Vast Neocene volcanic overflows crown the edifice.

4. The chains of the Ṭāleš, reaching heights of 2,400 m, constitute the Iranian-Soviet border. They extend from northwest to southeast, south of the Araxes, in the direction of the Caspian sea, delimiting the triangular plain of Lankarān (Soviet Talysh) situated between the sea and the mountains. The predominance of Eocene volcanic-sedimentary material relates them to the lesser Caucasus and the Alborz, of which they are the northwestern termination.

5. To the south of the frontier, the mountain blocks of Iranian Azarbaijan are characterized by volcanic constructions, the result of considerable eruptions which took place in the Neocene and Quaternary epochs, in conjunction with the fracturing of the northwest sector of the high Iranian plateau. This activity occurred along the “volcanic cicatrix” that follows the internal ridge of the Zagros and marks its contact with the central Iranian plateau. The large andesitic cones of Sabalān (4,740 m) to the west of Ardabīl, and of Sahand (3,710 m) between Tabrīz and Marāḡa, bear the marks of the Quaternary glacier; Sabalān now also bears minor glaciers (its permanent snows lie above ca. 4.400 to 4,500 m). They dominate the lower plateaus, untouched by the glaciers, of the Kūh-e Bozqūš (3,305 m) between Sarāb and Mīāna, and Kīāmakī-dāḡ, to the north east of Marand.

6. Beneath these recent volcanic eruptions, the substratum presents a complex structure. There are folded volcanic-sedimentary Eocene layers to the northeast and to the east, in the prolongation of the chains of the Alborz and Ṭāleš: Qarāḡa-dāḡ or Qara-dāḡ to the northwest of Ahar (2,880 m), and the hills of Kūh-e Ṣalawāt to the north of Sabalān, continued by Neocene hills limited by the east-west anticline of the Ḳorūžlū-dāḡ (700m), which dominates the Moḡān steppe to the south.

In the northwest, west, and south are exposed older elements of consolidation wherein are mixed fragments of an infra-Cambrian base and sedimentary Paleozoic and Mesozoic series associated with ultrabasic intrusions folded at the end of the Cretaceous and before the Eocene. These form the osseous frame of the massifs that, to the west of Lake Urmia, constitute the Turko-Iranian border (Kūh-e Zakī, 3,100 m.) and to the north, separate the basin of the Araxes (Kūh-e Mesow, 3,155 m). This is the northwestern extremity of the

large tectonic unity of central Iran which here is limited between the orogens of the Alborz and the Zagros, raised and divided by numerous fractures.

7. The tectonic division of the northwest of the Iranian plateau, is further marked by the existence, between the raised masses, of sunken depressions with Neocene and Quarternary filling (gypsum and saline formations, conglomerates, still sharply corrugated), which contain the principal centers of urban life. These are the basin of Ardabīl (1,350 m), between Sabalān and the chains of Ṭāleš; the depression of Qara-sū and Ahar (1,300-1,000 m) which runs in an east-west direction, to the north of Sabalān; the basin of Sarāb (1,700-1,900 m) parallel to that of Qara-sū, to the north of Sabalān; and especially the heart of Azarbaijan: the vast basin of Lake Urmia (1,275 m—with more than thirty-five islands), which is broken up by small volcanic reliefs: Kūh-e Čoboqlū (2,175 m) in the peninsula of Šāhī on the eastern shore; Mount Bezow (1,947 m) and Mount Zanbīl (1,610 m), both isolated on the plain to the northwest of Lake Urmia.

B. Climate. Azarbaijan presents a varied range of climatic conditions, being situated at the limits of the subtropical zone and of the temperate zone, and both connected to the Eurasian continental mass and subject to the influence of the Near Eastern bodies of water. However, its fundamental characteristic is aridity. The cyclonic depressions arriving from the west, having dropped their moisture for the most part on the slopes of the Colchian watershed of the Transcaucasia, reach this area almost entirely without water.

Precipitation depends primarily on the relief of the mountains and the altitude. The high chains of the eastern Caucasus probably receive nearly a meter of precipitation a year, and the lesser Caucasus, the chains of the Turco-Iranian frontier to the west of lake Urmia, and the summits of Qarāja-dāḡ, Sabalān, and Sahand, more than 600 mm. But the low plains of the Kura and the Araxes, which are deeply wedged into the mountainous mass, receive in total a mere 2-300 mm, and the annual total is even less than 200 mm over the rivers of the Caspian to the south of the peninsula of Apsheron (Aliat-Pristan, on the coast south of Baku, 189 mm) as well as in a section in the heart of the Iranian steppe of Moḡān on the windward side of the Qarāja-dāḡ (Mošīrān, 156 mm at an altitude of 667 m). The figures are scarcely higher for the more elevated, Iranian part of the Araxes basin (Ḵoy, 277 mm at 1139 m of altitude). The southern basins of Iranian Azarbaijan, even more elevated, receive slightly more rainfall (Ardabīl, 356 mm at an altitude of 1,350 m; Mīāna, 359 mm at an altitude of 1,057 m), but precipitation also sinks to less than 300 mm

in the greater area of the basin of Lake Urmia (Mīāndoāb, 262 mm), although the city of Urmia itself receives 405 mm (Tabrīz, 312 mm) as does the basin of Sarāb (286 mm at Sarāb itself). The first slopes of the volcanic reliefs are barely more favored (Līqvān at an altitude of 2,000 m on the northern watershed of Sahand, 362 mm). Only the Soviet coast of Ṭāleš enjoys an exceptionally high rainfall because there the orographic effect (the discharge of the rainy winds from the east, filled with moisture gathered in the course of their passage over the Caspian, as well as when the cyclonic depressions pass along the coast on the slopes of the Ṭāleš chain) are added to the intense activity of the cyclones over the southern bank of the Caspian and yield considerable precipitation (Lankarān, 1,250 mm.)

The periods of rainfall are characterized generally by two high points, one in the spring (May, or less often, April) connected with the convectional rains that develop in the barometrically low point preceding the establishment of the hot and dry flow of summer. The second is in autumn or the beginning of winter (most often in October) which is connected with the cyclonic rains from the west. Their highest frequency occurs with the onset of the winter thermal anti-cyclone. The spring maximum is the higher of the two in most areas, including Iranian Azarbaijan, which is more closely connected to the continental land mass, while the autumnal rains dominate slightly in the eastern part of the Transcaucasian basin, on the northeast watershed of the Caucasus and in Soviet Ṭāleš, where the influence of the Caspian on the genesis of autumnal cyclones is apparent.

As regards temperatures, the moderating influence of the Caspian is significantly felt in the summer. Thus, Ardabīl at an altitude of 1,350 m has an average temperature of 20.9° in August in comparison with 24.8° in Tabrīz, which is situated at almost the same altitude (1,362 m), but which is more closely connected with the interior land, and 24° in July in Urmia (1,329 m). On the Caspian shore, at an altitude of 21 m, Baku registers only 25.5° in July, and Lankarān 26° in August, as opposed to 28.9° in July in Kyurdamir (442 m altitude, located in the Kura plain). The mean temperature of the hottest months remains below 27° almost everywhere in the Kura and Araxes plains. In winter the difference is less apparent, both in the high basin of Iranian Azarbaijan (Ardabīl has minus 20° in January, as compared with minus 2° in Urmia and minus 2.7° in Tabrīz) and in the Kura and Araxes plains where Baku registers 3.6° in January (and Lankarān 3.3°) as compared with 1.3° at Kyurdamir, a contrast that represents only the difference in altitude. On the

Caspian coastal regions, the absolute extremes do not drop below minus 15° while they remain around minus 25° in the interior of the plain.

C. Hydrology. The two great rivers of Azarbaijan are the Kura, which flows along the axis of the Transcaucasian ditch (length 1,515 km; watershed basin 188,000 km^2) and its tributary on the right bank, the Araxes (length 1,072 km; watershed basin 102,000 km^2) which in its long course constitutes first the Turco-Soviet border, then the Irano-Soviet border. Both rivers originate in the highlands of eastern Anatolia and, partially supplied by Caucasian tributaries, for the most part escape the effects of the aridity of the regions downstream. The Kura's mean discharge is 397 m^3 per second at Mingechaur and 586 m^3 per second at Ṣabīrābād after the Araxes has joined it (the mean discharge of the latter is 222 m^3 per second at Karadonlu shortly after its entry into Soviet territory). Both water courses reach their maximum level in May, as a result of the melting of snow in the highlands and secondarily as a result of the spring rains, and they reach their minimum level in August-September; however, in summer the high waters of the Kura (month of second-highest level June) surpass those of the Araxes (month of second-highest level April). This is due to the fact that most of the Kura's water comes from the western and central Caucasus and its glaciers. Moreover, the Kura reaches a secondary peak in November as a result of the autumnal rains and then declines to a secondary low in January-February due to glacial water retention, while the Araxes has a simple "two-time" regime.

The water courses of Iranian Azarbaijan are much more modest. The Safīd-rūd (Qezel Üzen), the principal water course of the northwestern part of the Iranian plateau, only skirts the edges of its southeastern borders. Most of the region belongs to the endoreic basin of Lake Urmia (51,000 km^2), a shallow body of water (16 m at the maximum level, generally 6 to 8 m) and very saline; various analyses have estimated the salinity to range from 18.8 to 29.1 percent. Its surface, which is extremely variable, can range from 4,750 to 6,100 km^2 between periods of high and low water and this closely reflects the annual variations of rainfall. Thus the lake underwent a maximum regression in 1962 and had extremely high levels in 1909-14 and 1969. The principal water courses that supply it are the Zarrīna-rūd to the south (watershed basin 7,890 km^2; mean discharge 50 m^3 per second) and the Ājī-čāy (Talḵa-rūd) to the east (watershed basin 8,100 km^2; mean discharge 13 m^3 per second). Both reach their peak in May-April while the low is in August (Ājī-čāy) or in September (Zarrīna-rūd, which is farther south and influenced by the summer aridity of

the Zagros Mediterranean-type climate).

D. Plant cover and ecological regions. In theory the mountainous massifs in their natural state produce woody vegetation. In the southern chains of Iranian Azarbaijan, forests of oaks with deciduous leaves (*Quercus Brantii*, *Quercus Libani*, *Quercus infectoria*, *Quercus iberica*) are mixed with junipers (*Juniperus excelsa*, *Juniperus oxycedrus*) at an altitude from 1,600-700 to 2,200 m. These trees are well-adapted to aridity and cold winters. In Karabakh and the lesser Caucasus, this forest indicates greater humidity and becomes more complex, containing oaks (*Quercus macranthera*, *Quercus castaneifolia*, *Quercus iberica*, *Quercus araxina*), yoke-elms (*Carpinus orientalis*, *Carpinus betulus*), and maples at altitudes from 1,500 to 2,300 m, while beech trees (*Fagus orientalis*) are found at a higher level. The lower level, with oaks, elms, and maples, in their natural state probably covered both the Qarāja-dāḡ and the eastern and northern slopes of Sabalān. In the Caucasus, the beech tree forests are found along the whole axis of the mountain chain, above the level of oaks (*Quercus robur*, *Quercus longipes*). Lastly, the chains of Soviet Ṭāleš present a particularly rich forest in which the chestnut-leafed oak (*Quercus castaneifolia*) predominates. This species is associated with the yoke elms and also with various endemic species (*Gleditschia caspica*) which already hint at the botanic complexity of the Hyrcanian forest (the southern region of the Caspian).

The present reality differs from the theory, however. Only the best watered chains (Caucasus, Lesser Caucasus, Ṭāleš) still possess appreciable stretches of forests. Soviet Karabakh has already been deforested, and throughout Iranian Azarbaijan the forests have been reduced to miniscule relics or isolated trees which barely allow us to reconstruct the original plant covering. The steppe, which is native to the low plains of the Transcaucasia and in the high basin of Iranian Azarbaijan below the forest line, has been greatly extended as a consequence of man’s activity.

This strong deforestation of the Iranian mountains represents the thousand year-old settlement of dense agricultural civilizations in the mountain valleys above the forbidding plains. Like the semi-desert steppes of the Kura and Araxes, the high, closed, semi-arid basins of Iranian Azarbaijan are not in fact suited for cultivation of grains dependent on rain. In fact, the combination of summer aridity and winter frost that curtails the growing season and makes useless a certain percentage of the rainfalls makes such cultivation impossible. The boundary of non-irrigated culture is located, therefore, in the proximity of

isohyets of 300 to 500 mm of rain per year. Sedentary life is hardly possible below these figures except in scattered places in conjunction with irrigation. This situation influences the whole human geography of the area.

III. Human and economic geography.

A. The nomads and their sedentarization. Azarbaijan combines plains devoted to a large extent to the winter migration of tribes and mountains suited to shelter a dense agricultural population, but also offers attractive summer pasturages at an altitude above the forest line. For the Turco-Mongol nomads this was ideal and Azarbaijan has remained until the present time, in its Iranian section at least, a nomadic area.

The Šāhsevan have always constituted the primary ethnic group in eastern Azarbaijan, and studies in connection with the development of irrigation in the Moḡān steppe, give a rather precise idea of their contemporary evolution and present situation. From 1886 when the Russian government closed its frontiers to their migrations, thus depriving perhaps as many as three-fifths of them of their winter pasturage in the low plain of the Araxes, sedentarization, already spontaneously begun in the nineteenth century, began to progress rapidly. At the same time the migration routes were definitively fixed in a general north-south direction, between the section of the Moḡān steppe that remained Iranian (winter quarters) and the main summer pasturages of Sabalān and Kūh-e Bozqūš and a smaller summer pasturage in the Bāḡrow-dāḡ to the southeast of Ardabīl. A second essential phase was initiated by the policy of control and enforced settlement carried out by Reżā Shah in the 1930s, which resulted in the creation of numerous villages, particularly in the winter quarters, but also along the migration routes in the high country. However, a large group of the Šāhsevan resumed their group migrations from the last years of the reign of Reżā Shah. In 1965, the most realistic evaluations still counted about one hundred thousand pure nomads dwelling both summer and winter in felt tents in the shape of a semi-cupola (*alāčūq*), grouped in *oba* of two to twelve tents both in the summer pasturages (*yeylāq*) and in the winter pasturages (*qešlāq*). Data collected in areas now being converted to agriculture by irrigation (see below) suggest that approximately 800,000 sheep and goats must spend the winter in the 4,000 km^2 of the steppe winter quarters of Moḡān. To this figure must be added the animals of transport, like camels and horses. At the present, the Šāhsevan are an inextricable mixture of pure nomads, living year-round in felt tents, of semi-nomads inhabiting village houses and spending only summers under tents in

the mountains, and of sedentary peoples who entrust their herds to the care of a small number of migrating shepherds. The length of time spent in the *yeylāq*s of the mountains is inversely proportional to the importance of cultivation in the winter quarters and of the existence of permanent villages. For the pure nomad, the sojourn lasts from between five to seven months (including the time of the migration, three to four weeks in each direction) generally in the time period extending from May to the end of October. It can be considerably shorter for the shepherds and for the semi-nomads. But the cultural and economic unity of the group, in spite of these innumerable variables, remain very clear. It is marked especially by the adoption of a calendar of pairing and parturition of the sheep, beginning with the lambing toward the end of autumn; this custom is the opposite of that practiced almost universally among the natives of the Middle East but by placing the period of lactation in winter, when the Šāhsevan are in the plain, it permits massive sale of milk products (especially white cheese) to Tabrīz and Tehran. The problems of collection and transport in the mountains would make this practice impossible in summer. Thus the Šāhsevan constitute a type of nomad closely integrated with the economy of the sedentary populations.

A new and final phase of sedentarization has been initiated since 1951 in connection with the development of the areas irrigated by the Araxes dams (see below). In 1968, 1,452 families, either from the true nomads or from semi-nomads already partially sedentarized, were installed on 11,787 ha in 15 new villages, with cultivable lots ranging from 3 to 12 ha. The movement has been continued following the construction of the large dam Aṣlāndūz (see below), although it is not possible to give a precisely balanced figure. But the evolution toward sedentarization seems irreversible and the proportion of sedentary peoples who are content to have their flocks moved with the shepherds is increasing constantly.

Other large nomad groups still exist in Iranian Azarbaijan, especially in the Qarāja-dāḡ and on the heights of the Sahand, where their summer pasturages are mixed with those of the sedentary villages and of the semi-nomads who are much more numerous. They have not yet been the object of an in-depth study.

Today in Soviet Azarbaijan, nomadism, properly speaking, has almost entirely disappeared. However, important pastural migrations still take place that indicate the attraction of the pasturage of the low steppe basins of the Kura and the Araxes. Thus, in winter many mountain villages send their flocks with

shepherds to the plains, which also accommodate an equal number of transhumant flocks coming from the neighboring countries of Georgia and Armenia, where the cold-season pasturages are very inadequate.

B. The types of mountain life. If exception is made of a small number of irrigated centers that have resisted the generalized nomadization of the plains, the most stable seats of sedentary life are situated in the better watered mountainous areas. In these areas, the toponymy has remained largely Iranian in the villages located at higher altitudes, underlining the continuity of occupation with the soil. In fact, most of the characteristics of human geography are connected to the ancient autochthonous agricultural tradition: Valley floors converted into terraces irrigated by small derivation dams and kept in continuous cultivation by a rotating system in which especially grazing crops (alfalfa, clover) along with cereals are continued for several years, providing fodder for a large number of cattle, which, in winter, are kept in stables that are partly or wholly underground (e.g., in the areas of soft volcanic tufts). Traditionally, only short summer migrations were undertaken to the lower neighboring slopes so that the higher summits remained open to the nomads. Excepting the ethno-linguistic transformation, cultural traits of nomadic background, such as the use of black tents as summer dwellings are rare.

The expansion of most of the mountain areas, resulting from the development of the areas of rain-fed cultivation surrounding the irrigated areas of the valleys, appears to have reached its limits forty to fifty years ago. As a result the present demographic pressure has led especially to the development of pastoral life and the exploitation of the complementary seasonal resources offered by the superposed zones of elevation. The people of the large village of Sahand, which, fifty years ago, was mainly agricultural and limited pastoral migrations to the immediate neighborhoods, have considerably increased the number of rented livestock and now practice summer migrations of much longer duration, which involved them in more elevated areas of the mountain. The last nomads have gradually been driven from these areas and at the same time currents of inverse spring transhumance leading the flocks to the plain of Tabrīz have appeared. Formerly self-contained high-country villages rather than real mountain villages, they are now turning to advantage the totality of their natural environment in complex rhythms. About thirty-five years ago labor began to migrate towards the centers of Tehran or the Caspian. At first this occurred at the end of spring when provisions would grow scarce, but

gradually they became year-round.

C. Agriculture on the plain and the large-scale irrigation works. The agricultural activity of the high basins of Azarbaijan, like the plains of the Kura and the Araxes, has traditionally been considerably less than that of the mountain valleys, and has been limited to precise sites of the irrigated oases of the piedmont, or the cones of volcanic overflow that are fed by small local water courses rather than by large rivers, once not utilized at all, or by *qanāt*s, which are rare throughout Azarbaijan. These irrigated grounds are almost never dense enough to give the impression of continuous cultivation, with outer areas of rain-fed agriculture adjoining each other. The most remarkable example is that of the western border of the basin of Lake Urmia (and to a smaller extent the borders to the north and to the south, the plain of Tabrīz to the east being almost barren with the exception of the large oasis of the city itself located at the mouth of Ājī-čāy). Here the numerous small water courses have furnished the basis for the existence of a unique area that has continually remained thoroughly humanized, and marked by a strong cultural individuality. Certain distinctive agricultural techniques (especially use of rural wagons that are rare throughout the rest of Iran) bring it closer to the high Armenian or Anatolian lands. On the other hand, it has also sheltered, for a long period of time, a Christian minority, the Assyro-Chaldeans, who speak a Syriac language. At the beginning of World War I, it numbered some 40,000 to 50,000 adherents. It was almost completely wiped out or dispersed by the war, but has been partially reconstituted by people who have returned and, around 1950, the number stabilized at approximately 15,000 people. At that time it remained an essentially rural population settled to the west of Lake Urmia. Later it was deeply affected by emigration to the cities (Urmia itself, but especially Tehran) and abroad (especially the United States and Australia) and today probably numbers only 5,000 people in Azarbaijan, half of them in the city of Urmia.

The contemporary demographic pressure in the semi-steppe plains has led to extensive development of pluvial agriculture, at least in areas where the relatively mild winters permit it to profit maximally from the rainfalls by prolonging the growing season. Thus, from the 1920s we have witnessed the multiplication or sizeable increase of villages that subsist almost exclusively on rain-fed agriculture, both in the northeast of Iranian Azarbaijan (the basin of the Qara-sū to the north of Sabalān) and in the high basins that are relatively well watered (south of the plain of Ardabīl). But essentially the

contemporary development has been connected with the large-scale irrigation works. The earliest and most spectacular of these projects were carried out in Soviet Azarbaijan. In 1860-63, the Tsarist government devoted itself to establishing a unified plan for irrigating the eastern Transcaucasian steppe after the model of the large irrigation systems of antiquity (Giaur-Arch), doubtlessly going back to Sasanian times, whose remains can still be seen in the Karabakh steppe. The Marian canal in the Karajasy steppe dates from this period. In the course of the following decades, derivative canals, supplied by the high waters of the Kura, were restored or newly excavated, to partially irrigate the steppes of Šervān, Moḡān, and Karabakh. In 1914, the Romanov canal permitted the exploitation of 176,000 ha in the Moḡān steppe, which was also irrigated (to the amount of 77,000 ha in 1913) by three canals leading off from the Araxes. After an abatement of work between the two wars, the high point of the development of eastern Transcaucasia was the construction of the major dam of Mingechaur, completed in 1953 in the mid-sector of the plain (reservoir of 16 km^3 ; lake of 625 km^3; hydro-electric power plant with a generating capacity of 360,000 kw). Two main canals lead off from it; the canal of Verkhne-Karabakh on the right bank (possible discharge 110 m^3 per second) and the canal Verkhne-Šervān on the left bank (discharge 175 m^3 per second), each of which encompass a perimeter of approximately 100,000 ha. Similarly, the other parts of the Transcaucasia benefit from a variety of irrigation schemes: Small local barrages and canals along all the minor water courses descending from the greater and lesser Caucasus, permit the development of the cones filled with volcanic overflow on the piedmont; the canal of Samur-Divichi which distributes the waters of the Samur over all the northeastern watershed of the Caucasus along the Caspian; the water-lifting machines that mark the course of the Kura and assure the irrigation of a long stretch of river bank; wells that furnish water in the peninsula of Apsheron; artesian wells in the middle sector of the plain. This complex organization, uniting all the partial possibilities, now ensures the almost complete use of the waters of eastern Transcaucasia.

In Iranian Azarbaijan irrigation schemes did not start until much later. From 1951 two small canals were constructed on the Araxes, 25 km downstream from the Qara-sū. They have made possible the irrigation respectively of 4,000 and 18,000 ha of the Moḡān steppe (discharge 4 and 17 m^3 per second) and the settlement of the Šāhsevan (see above). In 1963, the conclusion of a Perso-Soviet agreement on the integrated use of the waters of the Araxes opened up much broader perspectives: A dam serving as a regulating reservoir (capacity

1.35 km^3; lake of 145 km^2) was completed in 1971 close to the Iranian city of Qezel Qešlāq, not far from the Soviet city of Naḵjavān. The Aṣlāndūz dam was completed in 1972, at the confluence of the Qara-sū shortly after the Araxes enters the lowlands of Moḡān; from this dam, two canals of identical capacity lead off to the Iranian side and the Soviet side (80 m^3 per second). The perimeter irrigated on the Iranian bank would thus approach a total of 56,000 ha, to which we can add 6,000 ha irrigated by pumps. The newly claimed lands are developed essentially in the form of 42 large cooperative unities of exploitation (1,000 ha each); each unity harbors 50 families of colonists. Here is also the most important hydro-electric installation of northwest Iran with 42,000 kw of generating capacity (150 million kwh). Other projects are in the process of realization around lake Urmia, and ensure an integral regulation of the entire basin. There is a reservoir of 0.6km^3 on the Zarrīna-rūd, with two canals of 28 m^3 per second for the irrigation of Mīāndoāb plain to the southeast of the lake (perimeter of 85,000 ha); a reservoir on the Mahābād river (Mahābād-čāy) for the irrigation of 21,000 ha in the plain of Mahābād to the south of the lake; a reservoir on the Zolū river (Zolā-čāy) for the irrigation of the plain of Šāhpūr to the northwest (32,000 ha); and finally a series of three reservoir dams providing for the irrigation of 80,000 ha in the plain of Urmia to the west of the lake.

D. Agricultural production. Up to now, the high basins of Iranian Azarbaijan have remained largely devoted to growing cereals (wheat and barley), up to approximately 2,500 m. Lentils are the food-crop raised at the highest altitude: 2,500 m on the southeastern watershed of Sabalān. Industrial crops always have to be irrigated; they are represented in particular by sugar beets, which are processed locally; tobacco in the plain of Urmia; grape vine for wine and raisins up to 1,500 m (the stems are buried during the winter to protect them from the cold); fruit trees, especially apricot and almond, which require scarcely any irrigation. Potatoes, which would suit the climate of these high cold lands, are hardly grown at all. The newly irrigated areas around lake Urmia will be devoted in particular to fruits and legumes, along with cereals and fodder. In the northeast of the country, the agricultural crops vary as the altitude diminishes. Rice appears below 1,200 m in the Qara-sū basin. Vineyards and melons in open fields become more important. Cotton production is not profitable above 250 m of altitude and is chiefly limited to the Moḡān steppe, although it is to be found occasionally in higher areas (the Mīāndoāb plain.)

The climate and abundant water resources explain why agriculture is much more industrialized and commercialized in the Transcaucasia, where cotton occupies 20 percent of the cultivated area. Other crops include grapes, fruits (apricots, peaches, walnuts, citrus fruits), tea (20,000 ha), olives (especially in the Apsheron peninsula), and silk in the hills bordering the Greater and Lesser Caucasus.

E. Cities and industrialization. The high lands of Iranian Azarbaijan have produced a flourishing urban life. Each basin has at least one important urban center: Around the Urmia lake, they become more numerous, controlling access to the plain and command various alluvial plains with irrigated agriculture. Most of the cities, in spite of an often glorious past, are today rural markets with an essentially regional function. Ardabīl (147,000 inhabitants in 1976; q.v.), ensconced in its oasis where fruit trees characteristic of the moderate cold climate predominate (pears and apples). Here was the cradle of the Safavids and it still preserves in its layout a circular boulevard which traces the wall that the French general Gardanne had built in the beginning of the nineteenth century. At this time the city was an important caravan stop between eastern and central Transcaucasia and Tehran and Isfahan. The closing of the Russian borders, following the annexation of the Transcaucasia by the Tsarist Russia, left it with a purely local role. Urmia, more important today because of its population (163,000), never had any long-distance relations. Ḵoy (population 70,000), to the north of the lake, remains somewhat outside the important international route from Turkey to Iran. Tabrīz is currently in rapid decline as the center of a network of communications and roads, the fact which explains its previous prosperity. It developed in the long corridor of Ājī-čāy, between Sahand to the south and the Qarāja-dāḡ to the north, not far from the northern point of Lake Urmia where the principal southeast-northwest route is intersected by a north-south route paralleling the eastern bank of the lake and leading to the valley of the Araxes and to Transcaucasia. It was finally fixed at the farthest point where the river valley is still contained between two firm shores before spreading out into the bottom of the marshy basin near the confluence of the Maydān-rūd, flowing down from Sahand, whose waters irrigate the gardens of the city. Tabrīz was the capital of Iran in the Mongol period, then again at the beginning of the Safavid period, before the wars with the Ottomans forced them to look for a less exposed site for the capital, and was still very prosperous in the seventeenth century when it must have counted 150,000 inhabitants. However, the city had only 15,000 in the beginning of the nineteenth century

after a series of epidemics and earthquakes. At this time, with the progressive opening of Iran to the West, it was at the peak of its prosperity. It was the gateway of the country to the outside and an important stage for caravans going toward Trebizond and the Black Sea, which was henceforth open to European commerce, until the railroad that linked it to the Russian network at Jolfā and Tiflis was completed. The Russian revolution interrupted travel to the West across Soviet territory and almost totally destroyed this prosperity, and in the 1930s the construction of the Trans-Iranian Railway eventually made Iran turn back toward the Persian Gulf. It was connected with the Turkish railroad system in 1970, but the connection remains impractical and slow, and has not really changed the situation. With 598,000 inhabitants in 1976, Tabrīz ranks today as the fourth largest city in Iran, although it was still the second some fifteen years ago. Essentially it exists from its role as regional capital and from its numerous crafts (few industries of importance: especially carpet wearing, leather, wood, and food supplies) although many sections of its important bazaar have today fallen into disrepair, especially the southern parts, close to the bed of the Ājī-čāy.

Russian influence has deeply modified the urban network of the eastern Transcaucasia, assuring the predominance of Baku. This was only the second capital of the Šervāšāhs whose principal residence was Shemakha (Šemāḵī) on the first slopes of the Caucasus, in a better irrigated area with a gentler climate. Baku, a strategically located capital controlling the passage east to the Caucasus along the shores of the Caspian, competed on this route with other centers lying farther to the south (Darband) and remained a very modest city until the Russian conquest. The development of relations between Russia and Transcaucasia destined it to become the seat of Russian administration. A second element of its prosperity was furnished at the beginning of the nineteenth century by the extraction of oil, a process that sub-marine exploitations in the Caspian have prolonged until the present time despite the depletion of the first layers (the production is still 18 million tons in comparison with 22 in 1940). The agglomeration of Baku, with 1,300,000 inhabitants and 80 percent of the industry of Azarbaijan (the only other large industrial center is Kirovabad), represents the centralization of an already very urbanized region (the percentage of the total urban population reaches 50 percent) and its level of development and type of territorial organization today differ profoundly from that of Iranian Azarbaijan.

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5. Towns. M. J. Maškūr, *Tārīḵ-eTabrīz tā pāyān-e qarn-e nohom-e hejrī*, Tehran, 1352 Š./1973. S. Schafaghi, *Die Stadt Tabriz und ihr Hinterland*, Doctoral thesis, Cologne, 1965. G. Schweizer, “Tabriz (Nordwest-Iran) und der Tabrizer Basar,” *Erdkunde*, 1972, pp. 32-46.

III. Soviet Azarbaijan. The problems of documentation are of a very different nature from those of the Iranian sector. We shall mention here first general syntheses and comprehensive studies in Russian that provide a guide to more detailed works. The basic source for the geography of the country is the *Atlas Azerbaĭdzhanskoĭ Sovetskoĭ Sotsialisticheskoĭ Respubliki*, Akademiya Nauk Azerbaĭdzhanskoĭ, SSR, Institut Geografii, Baku and Moscow, 1963. The accompanying maps, commentaries, and very detailed descriptions constitute a complete analysis of the country. A more comprehensive and synthetic description of the natural environment can be found in general treatises or

manuals of physical geography of the USSR; for the regions in the Caucasus see for example, A. M. Alpat'ev et al., *Fizicheskaya geografiya SSSR*, Moscow, 1976, I, pp. 187-239 and F. I. Milkov and N. A. Gvozdetskiĭ, ibid., pp. 343-420. Some geomorphological monographic studies are collected in *Voprosy istorii razvitiya rel'efa i landshafty Azerbaĭdzhanskoĭ SSSR*, Akademiya Nauk Azerbaĭdzhanskoĭ SSR. Trudy Instituta Geografii 16, Baku, 1976. Among the works in Western languages, A. Büdel, *Transkaukasien, eine technische Geographie*, Petermanns Mitteilungen, Ergänzungsheft 189, Gotha, 1926, is still useful.

The works cited above are of a didactic character and rather abstract. For a concrete approach to the traditional styles of life and descriptions of the land, one should refer to the numerous itineraries and travelogues in Western languages, written at the end of the last century, among which we can mention in particular: J. Abercromby, *A Trip through Eastern Caucasus*, London, 1889. G. Radde, *Reisen an der persisch-russichen Grenze. Talysch und seine Bewohner*, Leipzig, 1886 (it also treats *pro parte* the Iranian section Ardabīl and the Sabalān). Idem, *Karabagh. Bericht über die im Sommer 1890 im russischen Karabagh von Dr . . . und Dr. Jean Valentin ausgeführte Reise*, Petermanns Mitteilungen, Ergänzungsheft no. 100, Gotha, 1890. Mme B. Chantre, *A travers l'Arménie russe*, Paris, 1893 (to a great extent concerned with Azarbaijan). M. Rikli, ed., *Natur- und Kulturbilder aus den Kaukasusländern und Hocharmenien*, Zurich, 1914. More recent and systematical is M. Bazin and C. Bromberger, *Gilân et Âzarbâyjân oriental, cartes et documents ethnographiques*, Paris, 1982 (Institut français d'iranologie de Téhéran, Bibliothèque iranienne 24).

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