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DĀM PEZEŠKĪ II. IN ISLAMIC PERSIA
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ii. In Islamic Persia

Traditional veterinary science in Persia. The ancient Persian traditions of *dām-pezeškī* (Ar. *bayṭara*) and human medicine were carried over to the Islamic period. Most of the early writing about veterinary matters is to be found in books on hippology (*faras-nāma*) and falconry (*bāz-nāma*), but a few more comprehensive works were also compiled, and useful discussions of animal diseases and their treatment were sometimes included in books on general human medicine (see below). Writings of Abū ʿObayda Maʿmar b. Moṭannā Bājarvānī (d. ca. 213/827), a Persian *mawlā* of Taym, namely his *Ketāb al-ebel* (on camels) and *Ketāb al-ḵayl* (on horses) are among the earliest works on animal physiology and veterinary science compiled by a Persian after the Arab conquest (Ebn al-Nadīm, ed. Flügel, p. 59; Ebn Ḵallekān, ed. ʿAbbās, V, p. 239). *Ketāb al-ḵayl* (ed. Hyderabad, Deccan, 1403/1982) contains passages about diseases of horses (pp. 41, 46, 121). The first work written on the subject in Arabic was *Ketāb al-forūsīya wa'l-bayṭara* by Ebn Aḵī Ḥezām, who is said to have served, during his long career, as stablemaster for both the caliphs al-Moʿtaṣem (218-27/833-42) and al-Moʿtażed (279-89/892-902; Brockelmann, *GAL*, S. I, pp. 432-33; Sezgin, *GAS* III, p. 375). The oldest Arabic work dealing solely with general veterinary medicine, however, seems to have been the translation (*Ketāb al-bayṭara*), probably by Ḥonayn b. Esḥāq (d. 260/874), of a treatise on hippiatrics by the 4th-century Greek writer Theomnestos,

preserved in the Köprülü library in Istanbul (ms. no. 959; Sezgin, *GAS* III, pp. 353-54). In the same library is an Arabic manuscript on veterinary medicine (*Ketāb al-bayṭara fī ṣefat al-dawābb men al-ḵayl wa'l-ebel wa ḡayrehā*) translated from Persian in the 9th century (Köprülü Kütüphanesi I, p. 488-89, ms. no. 959; cf. de Slane, p. 506). The existence of this manuscript not only shows that veterinary science had been a subject of interest to Persians but also attests to the continued vigor of the tradition in the Islamic period. According to Ebn al-Nadīm (ed. Flügel, p. 85), Ebn Qotayba Dīnavarī (d. 276/889) was the author of a book on horses (*Ketāb al-faras*) in forty-six chapters, a book on camels (*Ketāb al-ebel*) in sixteen chapters, and a book on beasts of prey and other wild animals (*Ketāb al-sebāʿ wa'l-woḥūš*) in seventeen chapters.

The 9th-century physician ʿAlī b. Rabban Ṭabarī described in the fourth discourse of his *Ferdaws al-ḥekma* (pp. 421-27) the functions of parts of the bodies of various animals—camels, bulls, asses, elephants, and lions—and discussed animal diseases and their appropriate treatments. In the 10th century Moḥammad b. Aḥmad Ḵʷārazmī devoted a paragraph to the teeth of animals as indicators of their age (pp. 12-13). His contemporary Senān b. Ṯābet b. Qorra deserves mention as another observer of animals and their diseases (Ebn Abī Oṣaybeʿa, I, p. 221). In the 12th century Sayyed Esmāʿīl Jorjānī discussed veterinary topics in his medical encyclopedia, *Ḏaḵīra-ye ḵʷārazmšāhī*, in which he included studies of rabies in dogs, wolves, jackals, foxes, and weasels (pp. 638-40). Faḵr-al-Dīn Rāzī (543-606/1149-1209) also allotted space in his *Jāmeʿ al-ʿolūm* to veterinary subjects, including nine diseases of riding animals and the behavior and diseases of falcons (pp. 140-41, 143-45).

Persian research on animal diseases, as in other fields of medicine, won a high reputation in distant countries. Ebn ʿAwāmm of Seville is thought to have based the chapter on animal diseases in his *Ketāb al-felāḥa* on information about Persian stockbreeding and veterinary practice (Senet, pp. 51-54). In India Faḵr-e Modabber (12th century) included in his *Ādāb al-ḥarb wa'l-šajāʿa* descriptions of such animal diseases as cataracts, coughing, chest pain, night blindness, fever, and worms (in horses), with recommendations for treatment (pp. 221, 227, 228-29).

Regulations related to veterinary practice, as set forth by a very strict *moḥtaseb* (controller of the market), Ebn al-Oḵūwa, must have been enforced, at least for a time, in the eastern territories of the caliphate. They required that

a veterinarian be expert on no fewer than 320 diseases of riding animals, including quinsy, headache, rabies, stomach disorders, and eye and ear ailments, as well as on the proper treatments for each. If a veterinarian made a mistake resulting in the death of an animal or a fracture of any of its bones, he had to pay compensation (pp. 150-51).

As noted above, books about horses and falcons are the main source of information about medieval Persian veterinary practice (for a partial list of mss., see Monzawī, I, pp. 405-96). In an anonymous *faras-nāma* written in Persian prose, probably dating from before the Mongol invasion, the author discussed such equine eye diseases as cataracts, amaurosis, night blindness, and pterygium (*nāḵona*), then described in detail the symptoms of glanders (*ḵonām*) and cutaneous glanders (*sorāja); he also wrote about plague (rinderpest) in cattle and horses, inflammation of the udders and teats, diphtheria, asphyxia, rabies, infectious fevers, and other diseases (Do faras-nāma, pp. 22, 80, 82-83, 98-99 and index). The 14th-century author Moḥammad Āmolī devoted part of the fourth chapter of his Nafāʾes al-fonūn to veterinary medicine (ṭebb al-dawābb), writing about some common diseases of horses and game birds (pp. 345-50).*

In the Il-khanid period (654-136/1256-1336) veterinary work appears to have been a vocation distinct from medicine, as is clear from a story about a veterinarian in Saʿdī's *Golestān* (ed. ʿA. Qarīb, Tehran, 1363 Š./1984, p. 173). Šams-al-Dīn Moḥammad Donayserī, in a compendium of scientific knowledge from this period, described curative properties of parts of the bodies of certain animals, some animal diseases, and appropriate remedies (pp. 215-46).

Works on veterinary science continued to be written under the Safavids (907-1145/1501-1732). According to Ḥasan Rūmlū (ed. Navāʾī, p. 454), Moṣleḥ-al-Dīn Moḥammad Lārī (d. 980/1571) wrote a treatise on veterinary science. Another noted scholar of the period, Mollā Moḥsen Fayż Kāšānī, wrote *Waṣf al-ḵayl* (Šīrāzī, p. 83), a description of horses. In the reign of Shah Ṭahmāsb (930-84/1524-76) equine diseases like pterygium and quittor (*šoqāq*) were mentioned in a *faras-nāma* composed in verse by a certain Ṣafī (*Do faras-nāma*, pp. 143-44). In the reign of Shah ʿAbbās I (996-1038/1588-1629) Moḥammad-Taqī Tabrīzī translated into Persian Damīrī's *Ḥayāt al-ḥayawān* under the title *Ḵawāṣṣ al-ḥayawān* (Wāseṭī, p. 101). At the behest of Shah ʿAbbās II (1052-77/1642-66), Neẓām al-Dīn Aḥmad wrote *Meżmār-e dāneš*, in three chapters and a conclusion; it was devoted to the training of horses and symptoms and cures of equine diseases (fols. 41b-89a). D. N. Marshall (*Mughals

in India, p. 184) mentions a *faras-nāma* written by Moḥammad-ʿAlī Ḥazīn in Isfahan in about 1127/1715; the author prepared an abridged version of the book during his later stay in India.

In fact during the 16th and 17th centuries numerous books on veterinary subjects were written in the Persian language in India. Notable among them is a *faras-nāma* with the title *Toḥfat al-ṣadr*, by Ṣadr-al-Dīn Moḥammad Khan b. Zabardast Khan in the reign of Awrangzēb (1068-118/1657-1707); its sixteenth chapter is devoted to a wide range of equine ailments, for example, the growth of superfluous teeth preventing insertion of the bit and the swallowing of food. The author recommended extraction and application of pitch (*zeft*) and asafetida (*ḥeltīt*) boiled in olive oil to make the wound heal quickly (p. 32). To cure inflammations and green-colored swollen veins under the tongue, he recommended phlebotomy (p. 32). For listlessness and lethargy in horses he found it useful to feed them barley meal mixed with Chinese rhubarb and *dūḡ*, and he was confident that equine eye diseases like pterygium (*ẓofra*) and cataracts could be cured by the same therapies applied to similar human diseases (p. 33). Another, similar work is a *farās-nama* translated from an old Sanskrit work, *Śālihotra*, into Persian by Abu'l-Ḥosayn Hāšemī during the reign of Moẓaffar Shah of Gujarat (968-80/1561-73; see Barafrūḵta, no. 1321 Š./1942, pp. 2779-80). It deals first with equine diseases of particular parts of the body, beginning with the head, eyes, and mouth (pp. 58-62), then with fevers, catarrh (pp. 65-67), and so on. Apparently an earlier Persian translation of the same work had been made by ʿAbd-Allāh b. Ṣafī at the request of the Bahmanid Aḥmad Shah I (825-39/1422-36; Monzawī, I, p. 449). Also noteworthy are *Aʿmār al-ḥayawānāt* by Moṣṭafā-Ḥasan Kassāb; the anonymous *Faras al-fawāʾed*, in verse with illustrations; an illustrated *Fīl-nāma*, about elephants, by an unknown author and artist (*Fehrest-e kotob-ḵāna-ye Āṣafīya* [Hyderabad, Deccan] III, p. 420); and manuscripts with the titles *Dām-pezeškī* and *Ḵayl-nāma* by unknown authors (Monzawī, I, pp. 433, 448).

From the Qajar period there are more reports about infectious animal diseases then common. Kalāntar Żarrābī (p. 201) mentioned an epidemic of hematuria (*ḵūn-šāš*), a symptom of anthrax, among both animals and humans. Najm-al-Molk, in his account of his travels in Ḵūzestān described infectious diseases that afflicted dogs and human beings and methods used to treat them (p. 137). Both Mīrzā Ebrāhīm (pp. 209, 213) and J. E. Polak (II, p. 98; tr. p. 333) noted that rinderpest was widespread and often destroyed all the cattle in a district. Contemporary Persian veterinarians were well informed about diseases of

particular organs in animals, for example, the eyes, nose, digestive system, and genitalia, and also about wounds of all kinds, as well as sores on the foot, leg, and skin. The methods of treatment were traditional, including drugs concocted from mineral, vegetable, and animal substances and ancient surgical procedures. From this period, aside from *faras-nāma*s and *bāz-nāma*s, chapters on veterinary medicine were included in general medical and pharmacological texts (e.g., ʿAlī b. Rabban, pp. 421-28; Jorjānī, pp. 280-83, 638-40; Heravī, p. 166). Among the techniques then in use were cauterization, phlebotomy, excision of bone tumors, eye surgery, disinfection of the uterus, and stomach surgery for relief of dropsy (*estesqā'*).

Modern veterinary science in Persia. The crown prince ʿAbbās Mīrzā was the first Persian official to attempt to import modern veterinary knowledge into the country. He arranged with the French military mission from Napoleon, led by General Claude Gardane, for the appointment of several French veterinary officers to work in Persia, but with the failure of the French mission this plan came to nothing (Trézel, tr., p. 84). In 1267/1850, during the reign of Nāṣer-al-Dīn Shah (1264-1313/1848-96), two British veterinarians arrived in Persia, but no record of their activities has been found. In the time of his successor, Moẓaffar-al-Dīn Shah (1313-24/1896-1907), a French veterinarian with the surname Carré was engaged to work in the royal stables, and for a time he also taught veterinary science at the Moẓaffarī college of agriculture (Madrasa-ye falāḥat-e moẓaffarī). Under Moḥammad-ʿAlī Shah (1324-27/1907-09) two Russian veterinary officers were employed in the Cossack Brigade, and it was they who organized the first formal courses in veterinary science in Persia (Barafrūḵta, 1322 Š./1943, pp. 3765-68). In 1332/1914 two veterinarians and an expert farrier from Sweden came to Persia and opened the first veterinary school, offering a two-year course; apparently four of these courses were completed, but in 1343/1924 the school was closed. During the same period the veterinary services of the army were placed on a firm footing (Barafrūḵta, 1324 Š./1945, pp. 3767-68), and most of the graduates of the veterinary school found work with the army. In a manual of regulations for internal services (*Neẓām-nāma-ye ḵadamāt-e dāḵelī*) issued by the Ministry of war (Wezārat-e ḥarb) in 1303 Š./1924 veterinarians were repeatedly described as "special personnel of the military" (*fard-e neẓāmī-e ḵārej az ṣaff; pp. 16, 19, 20, 33); each had a number of apprentices (šāgerd), whose duties were to inspect the horses daily and to report to him on their condition (pp. 40, 65, 180).*

The Pasteur institute of Iran was established in 1300 Š./1921 with the help of

the Institut Pasteur of Paris; Joseph Mesnard was appointed its first director. It included departments of human, animal, vegetable, and industrial bacteriology. The department of animal bacteriology produced an antianthrax vaccine, which was distributed to the veterinarians then working in the country (Mesnard, p. 7). In 1304 Š./1925 this department, together with the Department for combating pests of animals (Šoʿba-ye dafʿ-e āfāt-e ḥaywānī) in the Ministry of public welfare, agriculture and commerce (Wezārat-e fawāʾed-e ʿāmma wa falāḥat wa tejārat), was moved to Ḥeṣārak near Karaj. In addition to the antianthrax vaccine, it began to produce a vaccine against rinderpest, which had spread at an alarming pace in the 1920s, mainly in the Caspian region. Later the Ḥeṣārak laboratory was closed, then reopened as the Rāzī institute (Moʾassasa-ye Rāzī) in 1310 Š./1931. Its reactivation was owing to the efforts of Dr. ʿAbd-Allāh Ḥāmedī and a newly appointed French colleague, Dr. Louis Delpy. The Rāzi institute, later renamed Moʾassasa-ye vāksan wa serom-sāzī-e Rāzī (Rāzī institute for vaccines and serology), has continued to produce vaccine and serums for human and animal use until the present day.

In 1927 the International Health Office issued a resolution stressing the need to establish regular veterinary services in all countries. After some delay, in 1312 Š./1933 the Persian government responded by establishing a veterinary section (Edāra-ye koll-e dām-pezeškī) in the Ministry of agriculture (Barafrūḵta, 1326 Š./1947, p. 190).

Ḥāmedī can be considered the founder of the modern veterinary profession in Persia. In 1302 Š./1923, in the course of his medical studies, he had worked under Mesnard in the department of animal bacteriology at the Pasteur institute; later he was transferred to the department for combating pests of animals, where he was engaged in the production of the antirinderpest serum. In 1305 Š./1926 the government sent him to France, where he obtained a doctorate in veterinary medicine and received practical training at the Institut Pasteur. He returned to Persia in 1310 Š./1931 and was entrusted with the task of organizing the Rāzī institute. In 1315 Š./1936 he established a large number of veterinary offices throughout the country.

The idea of founding a faculty of veterinary medicine had come up in 1306 Š./1927, but nothing was done until 1311 Š./1932, when Moṣṭafāqolī Khan Ṣamṣām-al-Molk Bayāt was head of the Department of agriculture (Edāra-ye koll-e falāḥat). In that year a veterinary college (Madrasa-ye ʿālī-ye bayṭārī) was opened under the supervision of the department. It was at first located in the Bāḡ-e delgošā in the western section of Tehran, but for the school year

1312 Š./1933-34 it was moved to the nearby Bāḡ-e Sardār Moḥtašam and in 1313 Š./1934 to Karaj. Delpy, then head of the Rāzī institute, and Dr. Vechten, who was director of the Veterinary institute (Moʾassasa-ye dām-parvarī), taught at this college for several years (Maḥbūbī Ardakānī, p. 367). The veterinary college was attached to the College of agriculture in 1314 Š./1935 (Maḥbūbī, *Moʾassasāt* I, p. 408; Behnām, p. 148) and returned to Tehran in 1318 Š./1939. In 1319 Š./1940 responsibility for its scientific and technical performance passed to the University of Tehran, but control of its financial and administrative affairs remained in the hands of the Department of agriculture. In October 1945 it was formally incorporated into the university (Maḥbūbī Ardakānī, p. 368). In 1315 Š./1936 Ḥāmedī, by then director of the Veterinary department (Edāra-ye dām-pezeškī) of the Ministry of agriculture, was appointed dean of the veterinary college, and in the same year he launched its journal, *Nāma-ye dām-pezeškī*, which is still published (ʿAṭāʾī, pp. 20-29, 281-82).

The functioning of the veterinary college, the civil and military veterinary departments, the Rāzī institute, and similar bodies in the provinces made it possible to control infectious diseases of animals in Persia. Since the 1930s Persian veterinarians have continued this work and have conducted basic research. During the 1970s veterinary faculties were established at the universities of Shiraz, Ahvāz, and Urmia.

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