Chapter VIII: The Anti-plague System of Tajikistan

1. History of the Tajik Anti-plague System

By the early 1950s, Soviet epidemiologists performing a retroactive study determined that a plague epidemic that struck the villages of Marzich and Anzob in the Aini district of Tajikistan in 1898 rather than having been imported actually was of local origin. This determination was further supported by the fact that landscape and ecological conditions of the Pamir Mountains are conducive for natural circulation of plague among hosts and vectors. The Soviet MOH resolved to study the possibility of the existence of natural plague foci on the territory of Tajikistan. For this purpose, the Tajik AP Station was established in Tajikistan's capital Dushanbe in 1955.[159]

Throughout the Soviet period, the Tajik AP station was subordinate to the Soviet MOH, while the Scientific-Research AP Institute of Central Asia in Almaty, Kazakhstan (now A.M. Aikimbayev Kazakh Center for Quarantine and Zoonotic Diseases) oversaw its epidemiological activities and provided methodological guidance. In the 1980s, there were 90 employees at the Tajik AP station, including 13 physicians, 7 zoologists, 2 parasitologists, while the rest were represented by the auxiliary personnel (laboratory technicians, disinfectors, sanitary workers, drivers, guards, and the like). The Tajik AP station dispatched between four and six epidemiological teams annually to carry out epizootic monitoring. In terms of organizational structure, the Tajik AP station was comprised of laboratories for plague and cholera, a zoological department, and a vivarium. It had armed guards with direct phone lines to a local police unit. The guards protected the Tajik AP station's compound on a 24-hour schedule. The Tajik AP station was relatively well financed by the Soviet MOH according to historical annual budget figures. In 1970, the budget was 209,700 rubles (the Soviet ruble then was roughly equivalent to the U.S. dollar). In 1973, the budget was 261,300 rubles, and in 1986, it was 375,000 rubles.[160]

As a result of purposeful and systematic studies, Tajik AP scientists discovered the Gissar Mountainous natural plague focus in 1970. The first strain of *Y. pestis* was isolated in Tajikistan in 1970 as well. It was found that the strains of *Y. pestis* isolated in the Gissar focus had slightly different characteristics than strains found elsewhere, so Tajik AP specialists named them *Y. pestis Gissarica*. The main natural plague host in the Gissar focus is the juniper vole (*Microtus juldaschi*). The Tajik AP service also discovered and mapped potential plague foci, where plague epizootics occurred periodically in the rodent reservoirs but no strains of *Y. pestis* were isolated. The regions identified were in the Jirhital district (on the border with Kyrgyzstan), Kusmangir region adjacent to the Karadum Desert (on the border with Afghanistan), and Istravshon district (on the border with Uzbekistan).[161]

After the Soviet Union's dissolution, Tajikistan suffered a severe economic downturn. As the Tajik AP system came under the jurisdiction of the cash-strapped Tajik MOH, it was deprived of almost all funding. But the breaking point occurred when the Tajik Civil War (1992-1997) broke out. The Tajik AP station happened to be located along one of the many frontlines between the Islamic militants from the United Tajik Opposition (UTO) and the pro-government secular armed forces of the Tajik military. There were frequent incursions of UTO militants onto the premises of the Tajik AP station, invariably accompanied by looting and destruction of property. The UTO

militants were, however, not interested in laboratory equipment or pathogens. Instead they expropriated vehicles and stole refrigerators, air conditioning units, gas heaters, and auto parts. Soon after the outset of hostilities in 1992, the Tajik AP station's workers decided to destroy the station's cell culture collection in order to prevent the pathogens it contained from falling into the wrong hands. This was done by opening the vials containing the pathogens and submerging them in a large bucket containing Lysol disinfectant liquid. Documentation of the destruction was sent to the Tajik MOH and copies were stored at the Tajik AP station.

In 1992, Tajik militants overpowered the station's guards and then physically abused the then Tajik AP station's director, Dr. Kazimir Derlyadko. He fled to Russia soon afterwards, as did the majority of the Slavic (Russian and Ukrainian) staff members. As the non-Tajik staff members constituted the core of the Tajik AP station's expertise, this loss of staff largely destroyed the functionality of the Tajik AP station; only a small and primitive cholera laboratory continued to operate.[162]

2. Public Health Activities of Tajikistan's Anti-plague System

When the CNS staff visited the Tajik AP station in May 2003, it had the opportunity to interview a veteran AP worker, and the last remaining member of the Soviet-era core staff of the Tajik AP station, Dr. V.S. Maiboroda. According to Dr. Maiboroda, during the Tajik Civil War the deterioration of security situation outside Dushanbe made it impossible to carry out regular epidemiological monitoring of natural plague foci or undertake other field investigations. When in 1997 the Tajik AP station dispatched an epidemiological team for one month, the team members encountered different groups of militants, who expropriated the team's camping gear and gasoline. In 2000 and 2002, under his personal initiative, Dr. Maiboroda, accompanied by two assistants traveled to the Gissar focus to conduct at least a partial epizootic reconnaissance by determining the approximate population of rodents. The duration of these missions was limited to ten days.[163]

In May 2003, the only functional unit of the Tajik AP station was the cholera laboratory. Cholera is a substantial problem in Tajik areas adjoining Afghanistan, where there are large numbers of refugees. The cholera laboratory sporadically carried out bacteriological tests of water samples for the presence of the strains of *V. cholerae*. The Tajik MOH provides meager funds for this water monitoring.

The Tajik AP station's annual budget in 2003 was 10,582 Tajik somoni (TJS), which was roughly equivalent to $3,425. Of this, more than half was used to pay the salaries of 63 employees. As is practiced elsewhere in the former Soviet republics, the administration of the Tajik AP station deliberately inflated the station's staff level with "dead souls" in order to receive more state funds. Thus, while officially the station had 63 employees, in actuality there were 35 (and many of these were hardly ever seen). The monthly salaries were extremely low; for example, the station's director's salary was 34 TJS ($12) per month, while a physician with 13 years of professional experience received 19.8 TJS (less than $7). With these low salaries, it was close to impossible for the station to attract qualified cadres. In order to offer additional incentives, Dr. Maiboroda promised the new hires (who were mostly from rural provinces) living quarters on the station's compound. However, after working for about a year many quit, but continued to occupy the quarters they had been provided without fear of being evicted. Some of the

former employees even managed to illegally privatize their accommodations. As a result, squatters appropriated many of the station's living quarters.[164]

3. International Activities that Involve Tajikistan's Anti-plague System

Although certain national and international aid organizations are active in Tajikistan, including the USAID and the CDC, the Tajik AP system was not benefiting from this assistance as of late 2004.

4. Analysis of the Tajik Anti-plague System's Weaknesses and Proliferation Potential

The Tajik AP system in 2003 had only one function, to perform minimal cholera surveillance. It is deficient in all aspects; leadership, human resources, facilities, equipment, and supplies. In view of these vast problems, a detailed analysis of the system is pointless.

The existence of the Gissar natural plague focus should prompt the Tajik government to attempt to revive the Tajik AP station and system. From this point of view, the appointment of a young former SES physician in April 2003 as the director of the station served as the promising sign. However, he faces enormous challenges, the chief one among them was the chronic shortage of funds coupled with the apparent indifference of Tajik MOH officials.[165]

As far as our investigation could determine, no Tajik institution or scientist was involved in the offensive Soviet BW program. Therefore, there is no proliferation threat of biological weapons know-how from Tajikistan. The Tajik AP station, having destroyed its culture collection, poses no threat with regard to potential proliferation of pathogens. Its equipment has been thoroughly looted, so there is no threat from availability of dual-use equipment.