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USSR SCIENTIFIC EXPEDITIONS IN MAIN TURKMEN CANAL ZONE

STUDY RODENTS IN CANAL AREA -- Ashkhabad, Turkmenskaya Iskra, 9 Jan 52

The Zooparasitological Expedition of the Academy of Sciences Turkmen SSR has collected data concerning the basic types of fauna found in the area through which the southwestern portion of the Main Turkmen Canal is to run. It has catalogued the main pests which are harmful to the pasture vegetation and bushy growth of the area, and has studies their ways of life.

The expedition identified 34 species of vertebrates (mammals), about one half of which are pests harmful to pasture vegetation and woody growth and which would, therefore, also be a threat to livestock raising in the area. In areas with sandy, clayey soils, the most numerous rodents are jerboas, susliks, and gerbils. According to Bol'shaya Sovetskaya Entsiklopediya, 1940, vol 45, p 251, "almost all gerbils ... have an important epidemiological significance as carriers of plague."

The damage done to pasture vegetation and bushy growth by these pests varies with the season of the year. The rodent population is most dense in places where pasture vegetation is found, and observations made by the expedition show that it injures about 30-35 percent of the pasture vegetation during the spring season. The rodents eat the green, succulent shoots of the vegetation, in the process partially unearthing the bulbs and roots of plants. With the advent of hot weather, these plants are scorched; then, the rodents uproot new plants still containing food value and moisture. In their natural habitat, the rodents drink no water, deriving their moisture requirements from plants.

The rodents are particularly harmful to pastures in summer, when no moisture falls and the plants dry up above the surface of the ground. Then, they begin to feed entirely on the roots and shoots of saxaul and other forms of bushy growth. Where the rodent population is very numerous, it damages 60-75 percent of the bushes.

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The rodents have completely adapted themselves to desert life and climate. For example, the gerbils collect all food plants from around their village and store them for the winter. It has been observed that at times they even cure these plants by placing them in their burrows or by scattering them in the shade. In this way, vitamins are preserved in the roots. In dry years, the rodents often preserve their food stocks in specially prepared places.

Members of the expedition, under the leadership of M. M. Tikhomirov, Candidate of Medical Sciences, and Radchenko, senior zoologist, are now exterminating the rodents from the route of the canal and its vicinity.

The number of rodents and other pests varies widely in different areas of the canal zone and also in the western foothills of the Kopet-Dag Mountains, because of varying soil and vegetation conditions. In the valleys of the Atrek, Sumbar, and Chandyr rivers are found some desert forms of pests which are usually found only in cultivated areas. These include, above all, lamellate-toothed rats (*Nesokia*), meadow mice, and porcupines.

Of these, the most serious pest is the lamellate-toothed rat, which injures grassy vegetation and woody growth by eating their roots. Because of its burrowing habits, it is also a serious menace to irrigation systems and to planted crops, especially alfalfa. In alfalfa fields, the rat eats the roots of the plants, causing the growth above the ground to dry up. Frequently, 50-60 percent of a field is affected by the activity of these rats.

The harmful activity of rodents is illustrated by a situation existing at the Institute of Subtropical Plants at Kizyl-Atrek, where cacti have been planted on the slopes of sand dunes. Gerbils construct enormous burrows under the cactus plants; 3,000-4,000 burrows may be found per hectare. While the gerbils do not eat the cacti, their undermining of the plants cuts the plants off from moisture in the soil so that they die during a dry spell. The gerbils injure planted trees in the same manner.

Field mice are agricultural crop pests in the valley of the Sumbar River. Establishing themselves at the edges of fields, the mice injure barley, corn, and, to some extent, cotton and other crop stands. The field mice are very voracious; in years when they invade fields en masse they destroy enormous areas by cutting the grain stems at the base and then dragging them to their burrows. In favorable years, the mice multiply prolifically; beginning at an age of 3-4 months, they produce litters of 8-12 young throughout the year.

Porcupines are not numerous in the canal zone except in the Kopet-Dag Mountains and their foothills.

Wolves are numerous in the canal zone. In Turkmenistan, wolves do more damage to livestock than all other pests. Measures to exterminate them must be undertaken.

Numerous insect pests harmful to bushy growth have been identified in the canal zone. These include scale insects (Coccidae), fig moths, and elm-leaf beetles.

The survey made by the expedition indicates that there is need for organizing a number of stationary zoological expeditions in the area south of the canal zone. One of these could be stationed in the Sumbar River valley, another at the Subtropical Station of the Plant Culture Institute in Kara-Kala.

On the basis of this preliminary investigation, the kolkhoz and sovkhos workers in the Sumbar River valley should be advised to carry out deep plowing of virgin fields so as to destroy the rodent villages. Many rodents can be

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destroyed in their burrows by drowning, through timely irrigation practices. Rodent-extermination work should be carried out simultaneously over large areas by plant-protection workers, so as to prevent migration to planted fields.

PREPARE FOR CONSTRUCTION OF MAIN TURKMEN CANAL -- Ashkhabad, Turkmen'skaya Iskra,
29 Jan 52

The Turkmen Expedition of Giprovodkhopok (State Institute for Planning of Cotton Irrigation), Ministry of Cotton Growing USSR, was organized in October 1951. Its assigned tasks were to prospect for nonmetallic minerals, survey and plan road routes, and survey and plan auxiliary enterprises for Turkmenvodstroy (Turkmen Irrigation Construction Organization), which is to carry out construction of the Main Turkmen Canal's irrigation systems.

The expedition was composed of hydrogeological, hydrotechnical, topographical-geodetic, construction-architectural, and transport groups.

In the short time since its organization, the expedition has done much work. The Dzhumurtau and Kubatau mountains have been prospected for quantity and quality of nonmetallic minerals to be obtained there. Large supplies of limestone, granite, and porphyry were found. Chalk and gypsum were discovered in the Ak-Kilen region.

Investigation has shown that the limestone deposits in the Dzhumurtau are of very high quality and can be used for the production of lime. A lime plant is to be built there for that purpose. A quarry is to be opened for production of rock and a crushing plant for production of crushed rock. A plant for producing foam-silicate (penosilikatnyy) blocks is also to be built there. Ordinarily, a special grinder is needed in the production of these blocks, a cost-increasing factor. Here, in the Dzhumurtau, there is an inexhaustible supply of sand, so fine that it can be used in its natural form for production of foam-silicate blocks.

In the Kubatau Mountains, vast deposits of granitic gravel were found. This gravel is suitable for construction of concrete and reinforced-concrete installations, since it requires little preliminary processing.

A plan was worked out for supplying the city of Tashauz with water. Preliminary studies proved that water supply by means of artesian wells was not possible because water suitable for drinking lay too far below the surface. It was decided to apply the open reservoir method for supplying the city with water and to use one of the old beds of the Amu-Dar'ya for this purpose.

The transport group surveyed road routes between Tashauz and Kalinin and planned an approach route for the industrial zone of Turkmenvodstroy and sites for housing projects for the construction organization to be located in Kunya-Urgench and Khodzheyli. Construction of the first dwellings for the builders of the Turkmen Canal irrigation systems has already begun.

In 1952, it is planned to survey an industrial zone for Turkmenvodstroy in Tashauz. The zone is to be composed of a machine repair plant, wood-processing combine, auto park for 300 trucks, auto repair plant, plant for making reinforced concrete, refrigerator plant, and an oxygen station.

In addition to the housing projects in Kunya-Urgench and Khodzheyli, a project for Turkmenvodstroy workers is to be built in Nukus. There, it is planned to build a wood-processing combine, plants for making concrete, machine repair shops, laboratories, auto parks, compressor stations, etc., for the construction administration.

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These 1952 basic survey tasks are to be completed during the first half of the year. Then the expedition will prepare for additional survey work in the southwestern portion of the Main Turkmen Canal zone.

SEEK WATER SOURCE FOR MAIN TURKMEN CANAL BUILDERS -- Yerevan, Kommunist, 18 Jan 52

Returned from the route of the Main Turkmen Canal, L. N. Smirnov, chief of the Turkmen SSR Geological Administration, told a Tass correspondent:

A particularly difficult task will be to supply the canal builders with fresh water, since the Kara-Kum Desert is a waterless expanse. Infrequent draw wells with limited supplies of drinking water, which are located in the western and central portions of the desert, will not be able to meet the demand. To meet this need, the first well was drilled near Kazandzhik in January. Results were good. More wells are being drilled there. New draw wells also will be created in areas where fresh-water draw wells already exist; at the same time, two deep wells will be drilled in these areas as an experiment. These deep, drilled wells are the first to be attempted in the desert.

SET UP WEATHER STATIONS IN MAIN TURKMEN CANAL ZONE -- Ashkhabad, Turkmenskaya Iskra, 20 Jan 52

B. Atevasov, chief of the Administration of the Hydrometeorological Service Turkmen SSR, states the following:

The Administration of the Hydrometeorological Service Turkmen SSR is expanding its operations, so as to provide observations necessary for planning and constructing the Main Turkmen Canal.

In 1950, one hydrometeorological station was organized on the route of the canal; two more were organized in 1951. More stations are to be established in the future.

One of the two stations organized in 1951 is located in the center of the Kara-Kum region, the other in the southern part of the canal zone along the Uzboy River. Three more stations are planned for the canal zone in 1952.

In 1952, special weather forecasts and storm warnings for 1-3 days in advance are being broadcast for the benefit of expeditions and working parties in the canal zone. They are being transmitted by Ashkhabad radio stations.

In 1952, special hydrometeorological bureaus will be organized in Takhia-Tash and Tashauz to serve the canal zone.

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