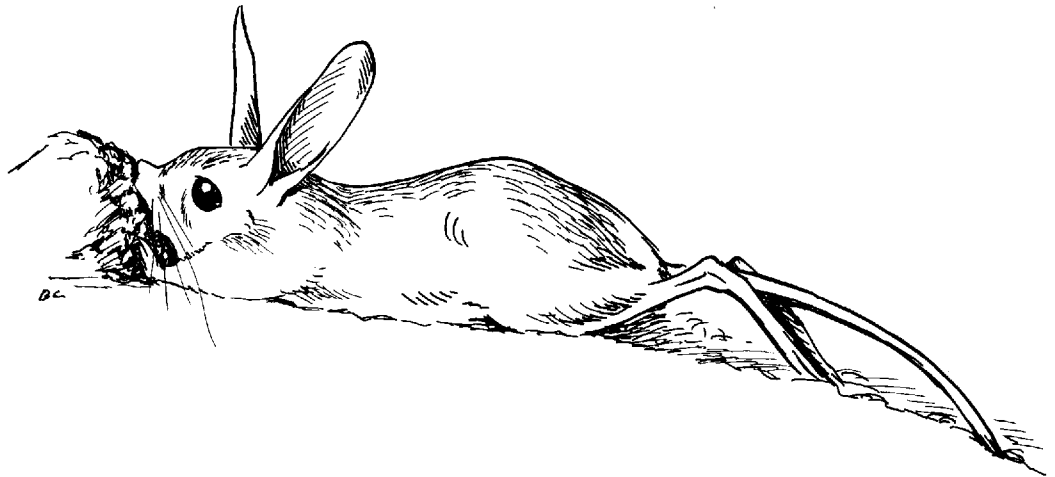


# THE OPEN COUNTRY



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## IN MEMORIAM: THE GREAT JERBOA OF THE MOSCOW PROVINCE

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Some colleagues liked our venture, the others took it with a smile, or even with a grain of salt: Why look for jerboas in the Moscow Province? Why go after these creatures of steppe and desert into the forest zone?

Perhaps it was indeed a strange undertaking, but only partly so. As the saying goes, every why has a wherefore, and our case was no exception. We knew that in the early 20th century the great jerboa (*Allactaga major*) was reported from some areas near Moscow. It was found south of the Oka River, and occasionally in the northern, left-bank, part of its basin as well, in the former Kolomna District (Ognev 1948). But there was no information about the sites it used to inhabit in those areas — which don't seem to bear any resemblance to steppe landscapes. Moreover, from the mid-20th century on, the scientific literature has reported no fresh data on its existence in the Moscow Province.

Our own search for the great jerboa “in the woods” has started nearly 20 years ago, when we took part in an expedition launched by the Nature Protection Corps of Moscow State University's Biological Department to survey the fauna of southern Moscow Province. In February of 1981, we took a series of interviews with the residents of its four southern districts (*viz.*, those of Lukhovitsy, Kashira, Zарaisk, and Serebryannye Prudy — all named after their main cities), and gathered that the jerboas were indeed known and met in those quarters. In the summer of that year, one of us (O. S.) obtained a firsthand evidence, having discovered their burrows in the vicinity of the city of Zарaisk. In those days, the great jerboas were, if not common, then at least quite well-known members of the local fauna.

Fourteen years later we decided that it would be interesting to learn more about their life in the Moscow Province — namely, to find out what habitats do they prefer, what do they eat, what are their numbers, and what can be done to ensure their well-being in the area. So we formed a small team, and started our quest.

The quest for jerboas? Not exactly; to begin with, we had to find some way of funding our expeditions. Since we had nothing yet to publish, the grant-making foundations dedicated to science writ large dismissed us squarely, on the basis of their “no application without publications” policy. We turned to low-profile benefactors, and found them more sympathetic, but still too prudent to get involved. Eventually, however, we were lucky to seek out those who gave us both their confidence and support — namely, the ISAR (two of our expeditions were supported by its USAID-funded program “Seeds of Democracy”) and the Commission on Rare and Endangered Animals, Plants, Fungi, and Lichens of the Moscow Province; and it is fair to say that the results of our “whimsical” undertaking are theirs as well as ours. And then, there were expeditions, and new interviews, and sleepless nights on the road, and morning wanderings along the dusty roadsides in search of the footprints. And finally, the matter came to a number of publications: in scientific journals, in local newspapers, and in popular magazines...

“So you have found them, haven't you?” — the reader may think at this point; but the answer is no. We haven't found the jerboas. But we don't think our work has been a failure either, since we have learned a lot — both about these animals and about their human neighbors in central European Russia.

## A FEW WORDS ABOUT THE METHOD OF STUDY

Studying rare animals is a difficult task. It is very seldom that one can meet them in nature, especially since most expeditions are necessarily limited in time. As far as the great jerboa is concerned, the matter is also complicated by the fact that it is a nocturnal animal with large individual ranges and low population density. While the probability of meeting the jerboas at daytime is next to zero, they are unlikely to be encountered even in the night hours, and their burrows are extremely hard to find. All in all, we found just one method of study to be effective, and that was to take interviews with the local people. It was clear that they must have much greater chances of meeting these animals than we ourselves might hope for, just by virtue of constantly being around. Most likely to notice them are those people who often have to drive at night: when caught unawares and blinded by headlights, jerboas tend to run for some time in front of the car or bike before they regain self-control and slip off into the dark.

One crucial thing about this kind of survey was to make sure that the people who claimed to have seen the jerboas were not mistaken about their identity. Keeping this in mind, we made it a rule to check all such claims by asking the respondents to describe the animal they referred to in some detail. The point is, one rarely succeeds in taking a good look at this elusive creature. A typical encounter with the jerboa goes like this: all of a sudden, you catch a glimpse of something small and curious, which makes a few chaotic leaps in front of your car and disappears in the dark. Hardly have you realized that the thing is alive when it's already gone. That's why any stories about jerboas sitting still, walking leisurely, or standing upright are not about these animals. However, the great jerboa has one feature allowing for it to be identified without mistake: its long tail ends with a "bow" (a black tassel with a white tip), which is difficult *not* to notice. If a person

did notice it, then the animal in question was most likely the great jerboa.

All things considered, we decided to take as trustworthy only those reports which met the following conditions: the respondent saw the animal personally; the animal was jumping; it had a long tail with the black-and-white tassel; and the encounter took place in the dusk or at night. Furthermore, we concluded each inquiry with one more check, showing the respondent a series of pictures featuring different animals: a hamster, a ground squirrel, a red squirrel, a mouse, a hare, and a jerboa. It was important that he or she had no difficulty in selecting the right picture. This scrupulous procedure helped us distill the most reliable reports out of all jerboa stories we were presented with.

## INTERVIEWS

"Hello, we are a biological expedition from Moscow. We came here to study the animals of your area. Could you help us? Why you? Because you were named to us as a person well familiar with nature..." Some five hundred times we uttered these or similar words to strike a conversation, and most of our new acquaintances accorded us a ready welcome.

In July of 1995, we interviewed 257 persons in 29 localities within the Zaraisk District; in July of 1996, we made another series with 193 new persons in 26 localities, expanding into three other districts of the Moscow Province (those of Lukhovitsy, Kashira, and Serebryanye Prudy), and into the neighboring areas of Ryazan and Tula provinces (the districts of Zakharovo and Venev, respectively).

Our main goal was to study the distribution of the great jerboa, but we also tried to use a unique opportunity of talking to so many people to learn more about themselves. After all, they were the closest neighbors of the animals we were interested in.

The psychologist Elena Fedorovitch provided us with the following model questionnaire:

1. Have you ever met a jerboa? Or did you hear about this animal from any of your friends or neighbors? If yes, who was the person that told you about it? When did that happen and what was the story? What do you think are the most curious features of this animal?

2. What other wild animals are living near your place? Maybe there was some odd or funny incident connected with them in your life, which you would like to discuss?

3. Would you like the scientists to try restoring the jerboa population in your area? If not, why so?

4. Do you think it's worth at all to spend money for the well-being of wild animals?

Usually our first questions about jerboas were making people smile, and they willingly entered into discussion. Some of them were surprised that we were interested in such apparently "useless" animals — occasionally so greatly as to start wondering: "Why, are you even being paid for this kind of job?" In this sense, the villagers were hardly different from our skeptical colleagues and the prudent grant-makers.



#### WHAT HAVE WE LEARNED FROM THE PEOPLE

1. The first interview section pursued the main goal of our expeditions: to obtain reliable information about the habitats of the great jerboa. Only forty-two of all our respondents ever happened to see this animal in nature, and each of them was over 40 years old. Most of those people were professional drivers and operators of agricultural machines, who had to spend much time on the country roads in the night-time, and they, too, were hunters more often than not. As a rule, those drivers who were not interested in hunting were not good at noticing jerboas either. And the rest of our respondents — namely, those who never saw jerboas themselves — often didn't even know what sort of animals they were. Almost no one among the interviewed women and children ever saw them, and no person from our sample of vacationers.<sup>1</sup>

Most encounters took place in the 1980s. We were told about six jerboa settlements dating back to those years (one of which we knew from our previous studies). But there was also a number of more recent encounters, dating from the mid-1990s. Seven cases took place in the Moscow Province (five in the District of Zairisk and two in the District of Serebryanye Prudy), six cases occurred in the Ryazan Province (all in the District of Zakharovo), and three more in the nearby districts of the Tula Province (see map on p. 35).

One of the recent episodes took place near the dirt airfield "Makeevo" in the District of Zairisk, a site where the jerboas had been frequently met in the earlier years as well. In that particular case, the encounter was as real as it could be: the man who told us about it had happened to catch the animal. The incident took place in the daytime. We shall never know what made the jerboa leave its burrow at such

<sup>1</sup> We use this term to refer to the citizens of Moscow, temporarily connected to the places where we took our interviews, thanks to having their cottages situated there (which they use mostly for summer vacations). As opposed to them, the term "locals" is applied to the permanent residents of the areas in question, whether they be villagers or townspeople.

an hour, but it certainly was an ill-timed departure: the poor thing got blinded by the sunlight and proved very easy to catch. The man put the captive in the glove compartment of his car for a while, for he wanted to bring it home for his children to see it. But he had first to drop by his office in the city of Zaraisk, and it was only there, after a one-hour drive from the airfield, that he remembered having left some important papers in the glove compartment where he had put the animal. Meanwhile, the jerboa had been working with his papers diligently — but certainly in its own sort of way, and the terrified jailer found no better solution than to release the wrecker on the spot. Unfortunately, the place was not suitable for the jerboas to settle in.

Another recent episode that stuck in our minds took place in 1995, when we were interviewing the residents of a village near the city of Zaraisk. We visited it to check upon the local jerboa settlement whose existence had been known to us since our first expedition fourteen years before. In those earlier days, almost all the villagers, children and adults alike, had been familiar with the jerboas and had no hesitation in showing us to their dwelling-place. A lot of changes had occurred since then. The hill where the jerboas had used to live was now occupied with summer cottages built by city folks, and the animals were gone. But the most striking thing was the complete ignorance of the jerboas on the part of contemporary villagers: as they now told us, they had never so much as heard about such animals. It is hard to believe that the village population could have changed entirely in so short a time. Do we have to admit that human memory can really be so short?

Be that as it may, the first group of our questions helped us perceive the respondents' attitudes toward the jerboas. Generally speaking, the people who had ever seen these animals used to like them. Just one townsman in his early twenties seemed to feel otherwise, in-

quiring with a note of caution: "They must be pilfering grain, right?" But this case was the only exception; more often the jerboas were spoken of favorably, in contrast to "those vermin sousliks."

2. The principal aim of the second section was to know what animals people could name "off the cuff," without previous thought. Thus we hoped to make out what stood for the world of "wild animals" in their immediate experience, and to understand their attitudes toward it. Based on the answers, we divided the interviewed people into the following three groups.

The first group (including less than a half of the locals) consisted of those who named no less than five wild animals (usually 5 or 6 species). As a rule (in 90% of their answers), they recalled primarily the game animals: hare, fox, roe deer, and wild boar. Those who used to hunt themselves often came up with a longer list (7 or 8 species), frequently naming beaver, muskrat, badger, and souslik in addition to the aforementioned animals. The hunters used to make informed comments on the current state and recent dynamics of the local animal populations (e. g., "X has become less numerous, because too many people hunt for it these days"; "Y numbers have increased, because the farms now use less fertilizers"; "Z has almost gone extinct, because much land has been given out to vacationers for building their cottages"; etc.).

The second group (comprising a little more than a half of the locals, with no hunters among them, and the smaller part of the vacationers) consisted of those who had a list of three or four animals to recall. They usually referred to the occasional animals they had happened to see in the near past (e. g., "Not long ago a roe deer dropped into our village"; "Saw two swans killed by Moscow folks"; "Just recently a fox broke upon me, face to face, and I am telling you it was not scared at all"; and so forth).

The third group included those of our respondents who could only name two species or less. It encompassed: (a) all the village women; (b) the “non-hunting fraction” of the local townspeople; and (c) the major part of the vacationers. Parenthetically, in 75% of their answers the vacationers mentioned hare (considered locally as a major garden pest).

3. The third section in our interviews was meant to estimate the potential efficiency of initiatives aimed at restoring the local jerboa population. It turned out that virtually all of our respondents, irrespective of their social status, were generally sympathetic to this animal. Yet, the question of whether its well-being was worth special efforts betrayed a more complicated picture.

With 95% of those who had ever seen the jerboas (about 10% of all respondents), the answer was positive, especially if their encounters with these animals dated back to their childhood. In most cases (80%), the reasons for their restoration were framed in utilitarian terms: the jerboas were spoken of as “harmless,” “interfering not with anyone,” and “not involved in stealing grain.” The rest 20% seemed to have no particular reasons; perhaps they simply felt inclined to agree with the very idea: “Well, why not?”

A number of positive answers revealed a degree of enthusiasm which we hardly could expect: “Restore the jerboas, you say? Yes, I’d like them to appear again, everything should come back now!”; or “Let everything live!”; or “Nature is our future!” Such enthusiastic responses were probably provoked by some signs of revivification people started noticing lately in their natural surroundings: for example, the return of the crayfish (following the dissolution of bankrupt factories and the resulting decrease in the amount of industrial wastes discharged into rivers); an increase in the numbers of sousliks (owing to the lack of funds for their extermination); and a more frequent appearance of other wild animals in some agri-

cultural areas (thanks to the increased cost of mineral fertilizers, which forced the local farmers to apply them much more sparingly than they had used to in the former decades). At the same time, some emotional reactions revealed another extreme: “There’s nothing under control now — all land has been given out, all animals have been killed, and there is no more anything to protect.”

Now most of the people who had never seen jerboas (90% of our respondents) reacted to the prospects of their restoration either evasively (“That’s all the same to us, we don’t know them” — the kind of answer given by a 70-percent portion of that group), or negatively (20%). In explaining their reasons, the members of the latter fraction indicated the alleged damages associated with these animals (e. g., “they will be stealing grain”), and some of them referred to their own advanced age (“There’s no need for me in this, I’m too old now”; or “This should have been done earlier, and now it is already too late.”).

It is interesting to note that none of the vacationers appeared to be interested in the restoration of the jerboa population in the area. In 70% of our interviews with them, they reacted to the idea either with a vague “I have no opinion on that matter” (uttered with a note of caution) or with an equally elusive “Well, perhaps it would be worth trying” (which was probably just an automatic reaction to the interview process). In 20% of the interviews, the vacationers answered in the negative: “No; the jerboas are not worth spending money.” (Let us remind you that none of the vacationers we talked to had ever seen these animals or heard anything about them before.)

4. The fourth, and final, section revealed the same tendencies as the third one. The overwhelming majority of the locals, especially the villagers, agreed to the necessity of spending money for conservation purposes. Even most of the local townspeople (85%) supported this idea. As for the vacationers, most of them

seemed to think otherwise: 20% reacted in the negative, and 60% didn't have any definite viewpoint ("Well, I really don't know" was their most common answer). Even those 20% who were sympathetic expressed their opinion in passing, providing no clear reasons in its support.

By contrast, all the locals who thought that nature protection was worth spending money were also willing to comment on the deplorable state of wildlife near their homes. In fact, 90% of the locals not only listed what they viewed as the major causes of its deterioration (the most oft-recurring themes were poaching, the poisonous effects of mineral fertilizers, and the massive transfer of land plots to private hands for building summer cottages), but also suggested certain measures for improving the situation, and even expressed their willingness to take part in conservation activities (e. g., to check upon poaching and pollution).

Most responses given by the locals betrayed their general dislike for the vacationers. Indeed, sixty percent of the locals considered the vacationers' ways of dealing with nature as one of the main causes of wildlife deterioration in their arcas: "There are so few animals now because these folks from Moscow are too fond of shooting and have built their villas everywhere they could."

Before we conclude this part, it must be noted that we often felt uncomfortable when asking the local people what they thought about spending money for wildlife protection: in many villages (if not in all of them) they had not been getting their wages for half a year or even longer.

Let us briefly sum up the results of our interviews. The great jerboa displayed a sporadic distribution in the areas which we visited; altogether, the reports of the local people enabled us to distinguish 16 separate sites where this animal had been observed. At the same time, both these sites and the species itself were known to just a minor fraction of

the locals, most of whom were hunters. The locals in general were either sympathetic or indifferent to the jerboas. Hardly anyone was particularly interested in these animals, thanks to their reputation as neither "useful" nor "harmful." However, the more one knew about them, the more one came to like them. On the whole, many local people were willing to support initiatives aimed at restoring their settlements, just as they agreed that nature protection in general should receive substantial funding (from the state), despite the difficult financial situation many of them were personally faced with. The major part of the vacationers, on the other hand, exhibited a very different attitude toward their natural surroundings. The "local interests" of that group were usually confined to their individual land plots, and most of them neither knew nor cared much about the "alien" areas beyond their private borders.

#### WHAT HAVE WE LEARNED FROM THE PLACES

Next was the most important part of our work: we had to explore the sites where our respondents had encountered the jerboas, and to try to see the animals with our own eyes. Having visited all the 16 localities where they had been noticed, we realized that most of the reported encounters had been purely accidental: 11 sites in question proved unsuitable for the jerboas, featuring only plowed fields and forest belts. But the rest five deserved a closer look: one in the Moscow Province, three in the Ryazan Province, and one more in the Tula Province.

It should be noted here that our survey of these places coincided with the fruitage of wild strawberry (*Fragaria viridis*), and its abundance in three of the five inspected sites arrested our attention immediately. But this plant is remarkable not only for its fragrant berries: it largely determines the specific look of northern steppe meadows. The point is, its low-growing

broad leaves suppress other plants, which results in a relatively short grass cover. Such habitats must suit the jerboas pretty well, since they are incapable of hopping amidst the tall grasses.

Half-jokingly, we concluded that the jerboas of central European Russia must be the fans of strawberry fields; but further explorations proved this "discovery" to be only partly true. The snag we ran against were the two remaining sites which had nothing in common with sweet-smelling, fruit-bearing meadows: both of them were reported to be associated with the country airfields. These settlements were mentioned to us by a number of people, including the drivers who had used to carry cargo to and from the planes, the airport personnel, and the passengers. Many of them had happened to walk along the dirt runways in the night-time, and these people claimed to have encountered the jerboas now and again, and even to have spotted their burrows.

We explored these sites. Both were now retired from air service: one of them (the aforementioned airfield "Makeevo") was plowed to grow crops, and another was simply abandoned and became a wasteland overgrown with wormwood. Frankly speaking, our imagination was not strong enough to visualize their former landscape: what kind of cover had existed there, with the jerboas hopping freely in the midst of it; where had they built their burrows? Fascinated as we were with these questions, we also had to admit that their newly acquired features must have made these sites unsuitable for the jerboas. Yet, the animal that showed a taste for paperwork was caught exactly at one of these sites, at the time when the retired airfield already took its present appearance. Further on, in 1999 we were told of a new encounter with the great

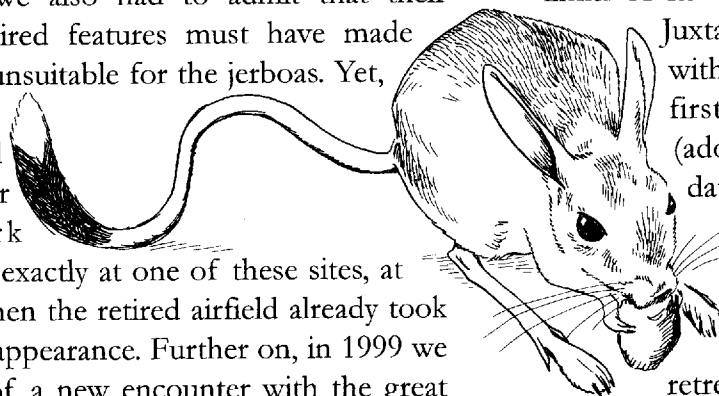
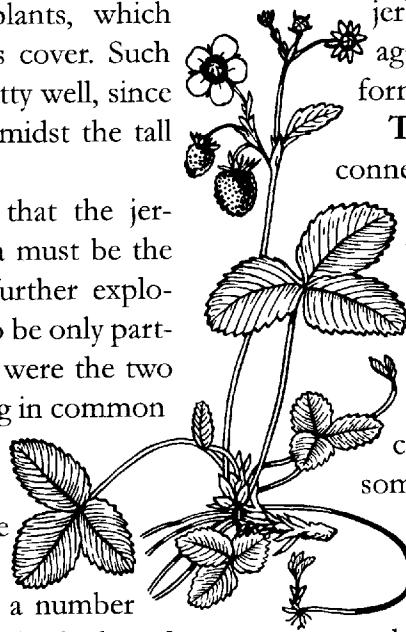
jerboa in the Tula Province, and again it took place in the area of a former country airfield.

Tentatively, we assumed that the connection between the jerboas and dirt airfields had a secondary character: it was just practical to establish them on elevated and unplowed plots with steppe-meadow cover, which may have been already colonized by the jerboas. In that case, the economic interests proved somewhat consistent with the continuance of local steppe-meadow communities.

Anyway, in order to prove our speculations about jerboa habitats, we had to obtain a first-hand evidence. With this end in view, we made the night routes to inspect each site that seemed appropriate. Driving by the country roads at tortoise speed, we covered over 300 kilometers, looking for the little hopping balls with fluttering tails. The other nights we took serpentine walks, carefully traversing one meadow after another, and at sunrise we moved to dirt roads, hoping to find at least the footprints of these elusive creatures. Alas! We had no such luck...

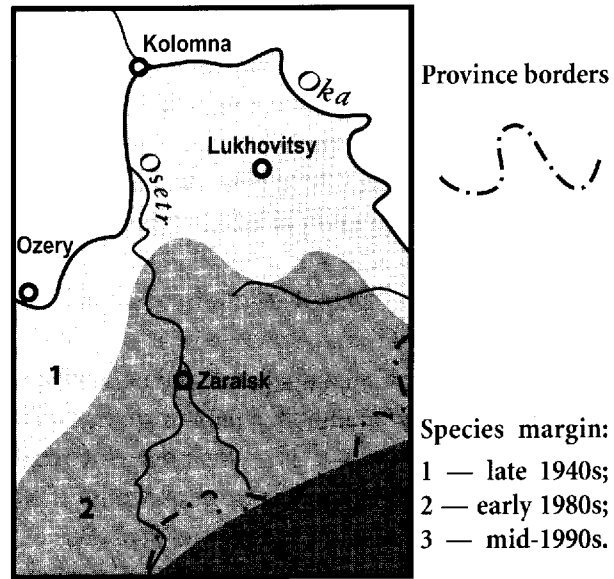
#### DRAWING THE MAP AND CONCLUSIONS

Placed on a map of central European Russia, the jerboa sites indicated by our respondents enabled us to outline the northern limits of its range dating to 1981 and 1996. Juxtaposed with one another, and with the species' distribution in the first half of the 20th century (adopted from Ognev 1948), our data made it clear that the great jerboa was continuously retreating to the south. During the fifty-year period prior to the early 1980s, the retreat must have been fairly slow,





## NORTHERN MARGIN OF THE GREAT JERBOA IN THE MOSCOW PROVINCE AND ADJOINING AREAS



amounting to a dozen or so kilometers overall. In the next fifteen years, however, it had become much faster: from 1981 to 1996, the species' northern margin had retreated southward for some 30 to 40 kilometers more.

The observed dynamics has forced us to make a sad conclusion: by now, there have remained no constant jerboa settlements in the Moscow Province. (The few recent cases when the animals were noticed within its borders occurred in areas unsuitable for the species; we take them as accidental incursions.) The present-day northernmost settlements are located (1) near the village of Kaiman' in the Ryazan Province and (2) near the village of Shishlovo in the Tula Province. In both cases, they are found on gentle ravine slopes with steppe-meadow cover, used as sheep pastures.

Ironically, the recent retreat of the great jerboa from its northernmost habitats in central European Russia is due to the same kind of power which must have provided for its initial appearance in this area: namely, to the whims of human ingenuity. Once dominated by deciduous broad-leaved woods, this part of Russia is believed to have developed extensive open areas as a result of clear-cutting for the cultivation of crops (widely practiced by the

local Slav tribes as early as 1,500 years ago). After the soil of the cleared tracts had been sucked dry, some of them were abandoned altogether and came to develop second-growth forests (dominated by small-leaved trees), while others were turned into hayfields and pastures. Haying and grazing facilitated the development of meadow communities, whose conditions must have been similar enough to those that occurred in the core range of the great jerboa to provide for its eventual expansion into the otherwise hostile forest zone.

However, further development trends in central European Russia proved unfavorable for its meadows, especially in the 20th century, when their large portions were plowed and turned into cropland. (Other major causes of their demise included erosion and limestone extraction.) The recent collapse of the Soviet centrally-planned economy intensified their degradation to a great extent. The decrease in livestock numbers provoked a haphazard replacement of the former pastureland by the newly-plowed fields. High maintenance costs killed off most of local aviation, and nearly all the dirt airfields previously inhabited by the jerboas have by now been plowed away, too. In addition to that, many steppe-meadow plots

on gentle-sloped hills were recently allotted for cottage building. As far as the Moscow Province is concerned, the few patches of steppe meadows that have remained there are far removed from one another; worse yet, none of them seems to be as extensive as to support a viable settlement of the great jerboa.

#### EPILOGUE

“So you haven’t found them, have you?” — the reader might grumble, realizing that our story is about to close. No, we haven’t found them. And we know there is no sense in looking for them “in the woods” anymore. In 1996, we petitioned the State Committee for Environmental Protection for listing the species in the Red Book of the Moscow Province, and its subsequent edition came to feature the great jerboa in the first category, as a species threatened with extinction in the nearest future (see Zubakin and Tikhomirov 1998). This initiative should probably be extended to all the other provinces of central European Russia embracing the northern margin of its range. In the Moscow Province, however, the great jerboa is no more in danger of going extinct: it is already gone, and the next editions of our Red Book will have to place the species in the null category...

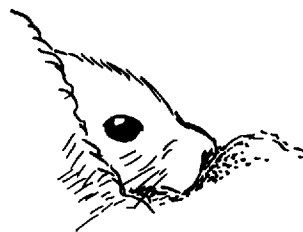
This sounds like a pretty sad end, but in fact no end is ultimately sad while the species is still

in existence. Let us hope that history may take another turn: chances are that marginal croplands will be retired from use again, and chances are that these lands will slowly restore a cover similar to steppe meadows of the ages “past and gone.” Let us hope that a couple of stray jerboas from the south may once run across such habitat and find it suitable enough to stay and start a new population. Or maybe hope is not enough, and they will need our help as well? To keep what little has remained of northern steppe meadows may not seem to matter much in the world that we take as our own; but it may be making a world of difference, as far as jerboa matters are concerned.

#### References

- OGNEV, S. I. 1948. *Zveri SSSR i prilozhashchikh stran* [Animals of the USSR and Adjoining Countries]. Vol. 7. Moscow and Leningrad: The USSR Academy of Sciences Press.
- ZUBAKIN, V. A., AND V. N. TIKHOMIROV, EDs. 1988. *Krasnaya kniga Moskovskoi oblasti* [Red Book of the Moscow Province]. Moscow: Argus.

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Note: Jerboa drawings by Vladimir Smirin.