

LEPTOSPIRA SOREX-JALNA ANTIBODIES IN SHREWS IN BOHEMIA

The territory of Bohemia is one of the most investigated regions of Europe, as regards the occurrence of natural foci of leptospirosis, and leptospirosis has been studied since the fourties (for a survey see Z. Šebek and B. Rosický, Čs. epidem. mikrobiol. imunol. 23: 10—21, 1974). In spite of this, a serotype hitherto not reported from Bohemia, *sorex-jalna*, has been found during examination of 824 small terrestrial mammals from West Bohemia (Dourov Mountains) and 1366 mammals from South-West Bohemia (Šumava Mountains).

The mammals were trapped into spring traps of common type. Blood samples for serological examination for leptospirosis were taken at autopsy and put on strips of filter paper (Šebek Z., Zprávy z epidem. a mikrobiol. (ÚEM Praha) 6: 28—34, 1964).

The catches of animals and collection of blood samples were carried out by there workers of the Institute of Parasitology, Czechoslovak Academy of Sciences, under the heading of Dr. Z. Hodková, to whom our thanks are due. Serological examinations were performed by microagglutination-lysis test with 12 serotypes, commonly used in our Laboratory (Šebek Z., 1964 i.e.). For identification of serotype *sorex-jalna* we used the strain *Sorex Jalna*, for sera positive at basic solution of 1:100 also *L. sorex-jalna* D 148.

In the region of the Dourov Mountains, the serotype *sorex-jalna* was detected in 6 of the 9 localities investigated; of the total number of captured animals, 12 specimens (i.e. 1.5 %) were positive to this serotype. The highest percentage of positivity was observed in the main reservoir, *Sorex araneus* L. (6.1 % — 9 specimens). The positivity of other two species was lower: *Apodemus sylvaticus* L. 0.8% (1 specimen) and *Microtus arvalis* Pall. 0.9% (2 specimens). Of all animals positive to leptospirosis, 93.0% were positive to the serotype *grippotyphosa* and 8.4% to *sorex-jalna*; 2 animals were positive both to *grippotyphosa* and *sorex-jalna*.

Among the 1366 mammals captured in the Šumava Mountains, there were 225 specimens of *Sorex araneus*, 3 of them positive to *L. sorex-jalna*. Other species of shrews were negative.

Antibodies to *L. sorex-jalna* were detected only in two localities (Zhuří, Velký Babylon) of the Šumava Mountains. In the locality Zhuří, 2 out of the 86 *S. araneus* were positive (2.3%). Positive serological reaction was obtained only in the main reservoir of this serotype, *S. araneus*; 1.3% of the examined animals were positive. Also in the localities of the Šumava Mountains the serotype *grippotyphosa* prevailed (167 se-

rums, i.e. 12.2 % of all mammals examined, were positive).

In Slovakia, *L. sorex-jalna* was described by Kmety (Brat. lek. listy 35: 261—265, 1955) and later also by other authors (Mittermayer et al., Niektoré prírodnno-ohniskové nákaazy na východnom Slovensku. Košice, pp. 131—163, 1961; Pleško I., Nováková Z., Brat. lek. listy 48: 115—120, 1967). In Bohemia and Moravia this serotype was not detected, though a large number of *S. araneus*, the main reservoir of *sorex-jalna* have been examined at many places (Pokorný B. et al., Z. ges. Hyg. 10: 345—358, 1964, Pleško I. et al., Čs. epidem. mikrobiol. imunol. 7: 403—408, 1958, Vošta J., Čs. parazitol. 8: 403—414, 1961, Ašmera J., Čs. parazitol. 10: 13—22, 1963, Červová H., Čs. epidem. mikrobiol. imunol. 22: 126—134, 1973).

Although we were unable to complement the serological examinations of wild small terrestrial mammals from the Dourov and Šumava Mountains by cultivation tests and isolation of strains of the respective serotypes, we assume that the serological examinations are sufficient to confirm the existence of natural foci of leptospirosis, especially of the serotype *sorex-jalna*. This is evidenced by our many years experience in the research of natural reservoirs and foci of leptospirosis in various countries. The results of serological examinations are the more convincing the higher titers are detected. It is also of importance, whether these titers are found in animal species known as main natural reservoirs of a certain serotype of *Leptospira*. For example, in the Dourov Mountains, antibodies to serotype *sorex-jalna* were detected in one specimen of *S. araneus* in the titer of 1:12800 and in another one even in the titer of 1:25000. Also in the region of the Šumava Mountains the natural foci of serotype *sorex-jalna* seem to exist, as it is evidenced by antibody titers 1:200 and 1:3200 detected by us in the shrews. It is possible that this serotype occurs also in other regions of Bohemia. In adjoining regions of Austria, Šebek et al. (Sonderheft 1 der "Wissenschaftl. Arbeiten dem Burgenland". Landesmuseum Eisenstadt, Österreich, 98—104, 1973) reported antibodies to *L. sorex-jalna* to occur frequently in wild small terrestrial mammals, more frequently than antibodies to *L. grippotyphosa*.

On the basis of the above results it may be assumed that also human infections with serotype *sorex-jalna* may occur in Bohemia, though not frequently, due to the rare contact of man with the main reservoir of this serotype, *S. araneus*.

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