RABIES BULLETIN EUROPE

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Contents

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1. INTRODUCTION

This BULLETIN describes the **reported rabies cases in Europe** for the **First Quarter 2000**, subsequently referred to as ***"This Quarter"***.

In SECTION 2 a **summary of the rabies situation of the first quarter 2000** is given.

SECTION 3 (3.1-3.38) reflects the **situation for individual countries**. Unfortunately, not all countries report regularly yet. However, their contribution is expected.

In the **Miscellaneous** SECTION (4) under 4.1 an article refers to rabies in Europe regarding epidemiological cycles and the impact of oral vaccination of foxes over the last 20 years. 4.2 is an OIE information on an update of zoonoses recently published with a special emphasis in the article on bat lyssavirus infections. 4.3 gives some notes on the Internet version of this RABIES BULLETIN EUROPE.

The **rabies case data** are tabulated for the **First Quarter 2000**. The arrangement of countries follows practical considerations, not alphabetical ones.

SECTION 6 lists the **official contributors** to the BULLETIN.

The **geographical distribution** of rabies cases in Europe of the **First Quarter 2000** is shown on maps of the Russian Federation, Turkey and Europe in the ANNEX.

2. SUMMARY OF RABIES IN EUROPE

During ***"This Quarter"***, **2206 rabies cases** were reported **in Europe**. Of these 1722 were in wild animals and 481 in domestic animals and 3 in humans.

Of the **1722 cases in wild animals**, 1524 (69.1% of total) were foxes, 1 other fox species, 2 jackals, 3 wolves, 130 raccoon dogs, 2 wild cats, 4 badgers, 7 stone martens, 14 pine martens, 8 polecats, 8 roe deer, 1 red deer, 1 bat, 11 other wild animals, 6 unspecified animals.

Of the **481 domestic animals**, 239 were dogs, 140 cats, 7 horses, 1 donkey, 1 pig, 76 bovines, 16 sheep, 1 goat.

There were **3 human cases** reported from the Russian Federation.

The above data are presented in TABLES 5.1 and 5.2 of the SECTION 5 and in the TABLES of the individual countries.

For the countries with **fox-mediated rabies** there is usually an increase of rabies cases expected during the first quarter of a year when compared to the last quarter of the previous year; the reason being the increased contact rate in the mating season of the fox. However, this pattern is interfered with due to oral vaccination. Therefore, ***"This Quarter"*** is a mixture of countries following the above pattern, practising oral vaccination successfully or experiencing set-backs.

Generally, the tendency continues: the western countries practising oral vaccination longest have the most improved rabies situation. Overall, there was an increase of cases in Europe by 309 compared to the previous quarter and an increase by 5 cases compared to the first quarter 1999.

Turkey, the country in Europe following the obvious pattern of **dog-meditated rabies** and not showing clear seasonality recorded 114 cases during ***"This Quarter"*** compared to 90 in the previous one.

However, there are data of the south of the Russian Federation, in the European part, indicating other areas of dog-mediated rabies (see article

4.1 of this issue of the RABIES BULLETIN EUROPE).

There was 1 **bat rabies case** in France. Because of the distinct epidemiological features of this disease, the cases are marked in a different colour in the map of the ANNEX.

Rabies-free countries in Europe were: Albania, Finland, Greece, Iceland, Ireland, Italy, Macedonia, Norway, Portugal, Sweden, Switzerland, the United Kingdom of Britain and Northern Ireland.

There were **no cases** in Belgium, Denmark, Luxembourg, the Netherlands and Spain, but the last indigenously acquired case (terrestrial or bat) was less than two years ago.

The status of the countries with data supplied irregularly cannot be judged.

3. RABIES IN INDIVIDUAL COUNTRIES

3.1 Albania ALB

by Kristaq Berxholi

The country remained **rabies-free.**

Surveillance:

A total of 30 animals, 24 foxes, 1 badger, 1 wolf, 4 bats (3 *Rhinolophus ferrumequinum*, 1 *Rhinolophus hipposideros*) were examined for rabies during ***"This Quarter"*** with negative results.

3.2 Austria AUT

by Helmut Schnabl

Out of 8214 animal samples examined for rabies during ***"This Quarter"***, 1 fox was diagnosed positive. The case occurred in the district of Oberpullendorf in the federal province of Burgenland close to the state border of Hungary.

3.3 Belgium BEL

by L. Hallet

No case of rabies was diagnosed during ***"This Quarter"***.

Surveillance

A total of 264 samples were examined with negative results: 148 foxes, 83 bovines, 6 cats, 7 dogs, 10 small ruminants, 1 goose, 1 horse, 4 badgers, 1 roe deer, 1 wild boar, 1 stone marten, 1 hare.

3.4 Bosnia and Hercegovina BIH

by Ramiz Velic

During ***"This Quarter"***, 9 rabies cases in foxes were diagnosed in Bosnia and Hercegovina. They occurred in the northern half of the country.

3.5 Bulgaria BUL

by L. Lavchev

During ***"This Quarter"***, 6 rabies cases were reported from the province of Pleven. The animal species affected by the disease is not known.

3.6 Belarus BYE

by A.M. Axenov

During ***"This Quarter"***, 55 animal rabies cases were reported in 4 of 6 administrative regions. Affected were 35 foxes, 1 raccoon dog , 9 dogs and 10 cats.

3.7 Croatia CRO

by Sanja Šeparović

Out of 5343 animals (5058 wild and 285 domestic ones) investigated for rabies during ***"This Quarter"***, a total

of 452 were diagnosed rabid in 88 municipalities (19 out of 21 counties) of the country. That represents an increase of 166 cases (58%) compared with the same period in 1999, and a decrease of 21 cases compared to the previous quarter.

The rabies cases occurred in 433 wild animals (415 foxes, 6 martens, 2 roe deer, 10 other wild animals) and 19 domestic animals (6 dogs, 5 cats, 8 sheep).

3.8 Czech Republic CZH

by Oldrich Matouch

During ***"This Quarter"***, 43 rabies cases were registered in the Czech Republic, as many as in the previous quarter and 29 less than in the first quarter of 1999. 42 cases were reported in wild animals and 1 case in a domestic dog. Of the wild animals 39 cases were noticed in foxes and 3 cases in roe-deer.

The cases were most frequent in the region of North Bohemia (20 cases) followed by Central Bohemia (13), South Moravia (9) and South Bohemia (1).

3.9 Denmark DEN

by Preben Willeberg

No case of rabies was diagnosed during ***"This Quarter"***.

3.10 Germany, Federal Republic DEU

by Winfried W. Müller and Hartmut Schlüter

During ***"This Quarter"***, 49 rabies cases in 5 federal states were reported, 33 cases more than in the previous quarter and 21 cases more than in the first quarter 1999. A marked increase of cases occurred in the foci of the federal states of Hessen (from 2 to 15) and Bayern (from 4 to 20).

3.11 Estonia EST

by Matti Nautras

A total of 14 rabies cases were reported during ***"This Quarter"***, for the months of January and February.

Animal species affected were: 11 foxes, 2 raccoon dogs, 1 domestic dog.

The cases occurred in 8 out of 15 districts.

3.12 Finland FIN

by Nina Sarén

The country remained **rabies-free.**

Surveillance:

A total of 119 animals were examined for rabies by immunofluorescence test on brain tissue during ***"This Quarter"***, all with negative results. Of the animals 73 were foxes, 30 raccoon dogs, 4 badgers, 3 pine martens, 3 dogs, 3 cats, 3 bovines.

3.13 France FRA

by Michel F.A. Aubert

There was 1 case of bat rabies reported during ***"This Quarter"*** in the community of Prémilhat, département de l'Allier. It was specified as an *Eptesicus serotinus.*

Surveillance:

791 samples were examined for rabies during ***"This Quarter"*** with negative results.

3.14 Federal Republic of Yugoslavia FRY

by Živko Davidović

A total of 63 rabies cases (53 foxes, 4 dogs, 4 cats, 2 horses) were registered during ***"This Quarter"*** in the Federal Republic of Yugoslavia.

Except for the 3 cases in Crna Gora all other cases were in the northern half of the country.

3.15 Greece GRE

The country remained **rabies-free.**

3.16 Hungary HUN

by Bálint Kerekes

During ***"This Quarter"***, 178 rabies cases in animals were reported. Of these, 154 were foxes (86.5 % of total), 1 in a wild cat and 23 in domestic animals (4 dogs, 13 cats, 3 bovines, 3 horses).

Only 2 cases were located west of the river Danube, 176 east of it

3.17 Iceland ICE

The country remained **rabies-free.**

3.18 Ireland IRE

The country remained **rabies-free.**

3.19 Italy ITA

by Santino Prosperi

The country remained **rabies-free.**

3.20 Lithuania LTU

by K. Lukauskas and A. Dranseika

During ***"This Quarter"***, 159 rabies cases in animals were registered. Of these 124 were in wild animals (70 foxes, 44 raccoon dogs, 5 pine martens, 5 polecats) and 35 in domestic animals (12 dogs, 15 cats, 8 bovines).

The most affected district was Alytaus with 17 cases, followed by Kedainiai, Prienai, Lazdijai and Jurbarkas with 15, 13, 10 and 10 cases respectively.

During ***"This Quarter"***, more than 55,000 dogs, 3000 cats and 2500 bovines were vaccinated against rabies.

There were no human rabies registered during ***"This Quarter"***.

3.21 Luxembourg LUX

by Arthur Besch

During ***"This Quarter"***, no rabies case was reported in the Grand Duchy of Luxembourg. The last case was recorded during the first quarter 1999.

As previously mentioned, end of March 2000 an oral vaccination of foxes was carried out. 44,000 RABORAL vaccine baits were distributed by helicopter evenly throughout the country.

The next campaigns for this year are planned end of May and end of September.

Surveillance:

10 animals (8 foxes, 1 roe deer, 1 badger) were examined for rabies with negative results.

3.22 Latvia LVA

by J. Rimeicans and E. Jegers

113 rabies cases were registered during ***"This Quarter"*** in 24 districts. 87 cases were diagnosed in wild animals (77% of total). 45 of the cases in wild animals were foxes, 38 raccoon dogs, 2 badgers, 1 wolf and 1 polecat. Of 26 rabies cases in domestic animals 12 were cats, 11 dogs and 3 bovines. The most affected districts were Kuldīgas with 13 cases and Bauskas with 11 cases.

3.23 Moldova MLD

by Vasile Bahau

Out of 27 animal samples examined for rabies during ***"This Quarter"***, 7 (4 foxes, 2 dogs, 1 bovine) were diagnosed positive.

The cases were scattered throughout the country.

3.24 Netherlands NET

by Gerard Visser

There was no case of rabies diagnosed during ***"This Quarter"***.

Surveillance:

12 animals (3 cats, 1 rat and 8 bats) were examined for rabies with negative results.

3.25 Norway NOR

by Eivind Liven

The country remained **rabies-free.**

3.26 Poland POL

by Andrzej Komorowski

A total of 466 animal rabies cases were registered in Poland during ***"This Quarter"***. 427 in wild and 39 in domestic animals.

Due to good results in oral vaccination, there are only few cases in the western half of the country, the remaining cases in the eastern half are partly densely distributed.

3.27 Portugal POR

The country remained **rabies-free.**

3.28 Romania ROM

by Mircea Chertes

A total of 24 cases of rabies (11 foxes, 1 other wild animal, 7 dogs, 2 cats, 3 bovines) were reported in Romania during ***"This Quarter"***, 9 cases more than in the previous quarter and 5 cases more than in the first quarter 1999.

The cases were scattered throughout the country.

3.29 Russia RUS European part only

by V.A.Vedernikov, V.A.Sedov, I.V. Baldina, A.M.Gulyukin, E.G.Troizkaya, B.L.Cherkasskiy, V.J. Ladnyi, V.V.Seliverstov, Dr. V.N. Abramov, and S.A. Kolomizev

During ***"This Quarter"***, 295 rabies cases in animals were reported.

Of the total number of cases 162 were in domestic animals - 67 dogs, 48 cats, 40 bovines, 2 horses, 4 sheep, 1 pig.

Of 133 wild animals rabies was diagnosed in 126 foxes, 3 raccoon dogs, 1 korsak (Vulpes corsak L.), 1 jackal, 2 pine martens.

Most affected were the Kursk Region with 31 cases. Twer Region with 26 cases, Penza Region with 18 cases, Moscow Region with 17 cases, Stavropol Territorium with 17 cases, Oryol Region with 16 cases, Rep. Of Chuvashiya with 16 cases, Kaliningrad Region with 13 cases.

There were 3 human cases reported - in the Moscow Region, Twer Region and in the Volgograd Region.

3.30 Spain SPA

by Carlos Abellan Garcia

During ***"This Quarter"***, the mainland and islands of Spain remained rabies-free in terrestrial animals.

There were no cases in bats and no cases in terrestrial animals in the Spanish territory of North Africa.

3.31 Slovak Republic SVK

by Jozef Sokol and Bohuslav Lovas

A total of 135 rabies cases in animals was reported in the Slovak Republic during ***"This Quarter"***. Of these were 117 (86.6%) in wild animals (114 foxes, 1 wild cat, 1 pine marten, 1 stone marten) and 18 (13.4%) in domestic animals (5 dogs, 11 cats, 1 bovine and 1 goat).

3.32 Slovenia SVN

by Zoran Kovač

With no cases during the first quarter 1999 and 2 cases in the previous quarter the country could not withstand all the infectious pressure coming for some time from the Croatian border: there were 19 cases during ***"This Quarter"***. Affected animals were: 18 foxes and 1 dog.

3.33 Sweden SWE

The country remained **rabies-free.**

3.34 Switzerland SWI

by Uli Müller

The country remained **rabies-free.**

Surveillance:

During ***"This Quarter"***, 107 animals were examined for rabies with negative results: 92 foxes, 2 mustelids, 4 other wild animals, 3 bats, 1 dog, 2 cats, 1 bovine, 1 sheep, 1 other domestic animal. The 3 bats (in brackets the community where the sample was taken) were speci-

fied as *Pipistrellus nathusii* (Luzern), *Pipistrellus pipistrellus* (Collonge-Bellerive), *Myotis daubentoni* (Thônex).

3.35 Turkey TUR

by Hüseyin Sungur

During *"This Quarter"*, 114 rabies cases in animals were reported in Turkey. The disease occurred in 99 dogs, 7 bovines, 2 sheep and 1 donkey; and in 3 foxes, 1 jackal and 1 wolf.

Provinces with a high incidence were Istanbul, Bursa and Izmir with 28, 20 and 15 cases respectively. All other infected provinces recorded less than 10 cases.

3.36 Macedonia TYM

The country remained **rabies-free**.

3.37 Ukraine UKR

No data.

3.38 United Kingdom UNK

by Fred Landeg

The country remained **rabies-free.**

4. MISCELLANEOUS ARTICLES

4.1 Rabies in Europe - Epidemiological Cycles and the Impact of Oral Vaccination of Foxes

by W.W. Müller
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General

Since half a century the type of rabies that has occurred in continental Europe has been maintained essentially in **red foxes**, in contrast to the type that prevailed at the start of the last century, which was maintained in dogs. This difference in hosts is important. Even though both viruses are of serotype 1, the fox virus is of low infectivity for dogs, and vice versa. When one of these two species becomes infected with the heterologous virus it sheds little virus. Thus the transfer of fox rabies virus from an infected country to a rabies free country in Europe would not readily occur through dogs.

The current strategy for controlling rabies in continental Europe is therefore to protect domestic animals by parenteral vaccination and to reduce the wildlife reservoir of the virus by oral vaccination of foxes, the latter being the main effort.

With the above strategy terrestrial rabies could soon disappear from Europe except for Turkey, where rabies is maintained in **dogs**. Here an increasing population of stray dogs hamper the common control efforts - parenteral vaccination of domestic animals and reduction of stray dogs.

The **arctic fox** is a host for another distinct rabies virus, and markers of this virus have been recognised in outbreaks among non-arctic animals, including the red fox and domestic animals.

Over the last 15 years **bats** as carriers of rabies are of increasing importance. Though we diagnose more animals and learn about the distribution, knowledge of how the disease is spread and other details of epidemiology is scanty. However, the virus first assumed to originate from Africa and grouped serotype 4 is now separated in two genotypes, European Bat Lyssavirus (EBL) 1 and 2.

Viruses, Vectors and Epidemiological Cycles

With the advance of laboratory technology viruses could be more and more distinguished. Today we talk of rabies and rabies-related viruses, serotypes and genotypes. They all are of the group of Rhabdoviridae as genus Lyssavirus.

According to a molecular classification we are distinguishing at this time between 7 genotypes: 1 - Classical rabies virus, 2 - Lagos bat virus, 3 - Mokola virus, 4 - Duvenhage virus, 5 - European bat lyssavirus 1 (EBL 1), 6 - European bat lyssavirus 2 (EBL 2), 7 - Australian bat lyssavirus (ABL). Strains of certain genotypes can still be split up into antigenic variants.

The term "vector" or "host species" refers to a species of animal mainly responsible for maintaining an epizootiological cycle of disease in a particular geographic region at a particular time. Without this species rabies would disappear, since other animal species, including man, are simply victims of "spill-over" from the principal cycle.

For the vector or host species one can say that usually a certain time had passed with the virus adapting to it. The vector is highly susceptible to the virus and it has a capacity for the transmission of the virus - for rabies mainly through bites. For this method of transmission it is also necessary to have a certain amount of virus in the saliva. The above mentioned spill-over species react according to their own different susceptibility to the virus and according to their rate of contact with the vector.

Four host species can clearly be distinguished in Europe as maintaining their own cycles: the red fox (*Vulpes vulpes*), the dog (*Canis familiaris*), the arctic fox (*Alopex lagopus*) and the serotine bat (*Eptesicus serotinus*). The data of the following statements and tables are taken from the RABIES BULLETIN EUROPE (1977-1999).

The Red Fox

The vulpine rabies outbreak in Central Europe is thought to have started in 1939-1940 at the Polish/Russian border and advanced westwards stopping in eastern France around 1982.

In an article of the BULLETIN issue 2/80 Selimov et al. describe next to the above outbreak, an outbreak in the delta of the river Volga in the Astrakhan region which involved raccoon dogs, foxes and wolves and which extended into the east, north and west. Thus, wildlife rabies has been recorded since the 1940's. The authors write that the Ukraine was probably affected by both of the outbreaks above.

The pattern which developed for fox rabies shall be demonstrated by the following data of 1982 in Europe. The countries Turkey and the former Soviet Union have been left out (see next heading).

Rabies Cases Europe (minus Turkey and Soviet Union):

Total Cases	20 687 = 100 %
Red Fox	15 487 = 74.9%
Other wild animals	1 691 = 8.2%
Domestic animals	3 409 = 16.5%

The vector species fox represents the greatest share in the epizootic. The spill-over species, wild and domestic, are affected according to their contact rate; farm animals (if they are not vaccinated) which share the same habitat with the fox more than dogs which might also be protected by vaccination. Additionally, it has to be considered that there is an immense unknown figure in regard to the wild animals.

Due to the distribution of animals in an

epizootic, there might be the idea that certain species could take on the function of the vector, as in the case with the raccoon dog (*Nyctereutes procyonoides*) in Eastern Europe.

TABLE 4.1.1 shows that in certain countries with raccoon dog rabies, foxes are still more affected than raccoon dogs. However, rarely, in certain areas with good habitats for the raccoon dog, rabies cases in raccoon dogs have exceeded cases in foxes (see article on Raccoon Dog Rabies in Poland, RBE issue 4/84, pp. 15-17). Until further knowledge is available though, it must be assumed that the raccoon dog depends like all other species, wild or domestic, on the fox as vector species. The animal simply resembles the fox in its qualities regarding susceptibility to the virus on one hand and method of transmission on the other hand.

An outbreak of rabies in Finland in 1988 and 1989 cannot be used as an example for the raccoon dog as a vector species since the outbreak had not much time to develop. It could be stopped using oral vaccination. During this outbreak, without a known source, there were the following animals affected: 48 raccoon dogs, 12 red foxes, 2 badgers, 1 bovine, 1 dog, 2 cats. The virus causing the outbreak was determined to be the strain.

The Dog

The reporting in this BULLETIN always singles out the country Turkey as the only obvious dog-mediated rabies country. The pattern is: there is rarely any wild animal involved in rabies, the dog is the species mostly affected (see TABLE 4.1.2).

Looking at a summary of the data from the Russian Federation, we get a pattern which neither resembles fox- nor dog-mediated rabies (see TABLE 4.1.2). If one looks closely into the large areas of the regions, republics or territories of the European part of the Russian Federation though, one might distinguish three groupings: tendency toward dog rabies, clear fox rabies and a mixed pattern of both.

TABLE 4.1.2 gives examples of the groups with data from 1998 and 1999. The first five areas in the TABLE (Astrakhan and Volgograd Regions, Republic of Kalmykiya, Krasnodor and Stavropol Territories) follow the dog rabies pattern, all located in the south of the country. It is interesting to note that Selimov et al. report that in the 1940's in the Astrakhan Region a wildlife rabies focus existed (see above). Three examples for fox rabies are regions located in the centre of the European Part of the Russian Federation. Of five examples with the mixed pattern 3 regions border the Ukraine, 2 border Kazakhstan.

Considering that the animal distribution in an epizootic which depends on the population size of different species of a certain habitat (biotope), of the hunting habits (if samples are forwarded into the laboratory for examination) and how far the virus of an area is adapted to a host - there is the other possibility that two different cycles (in our case fox and dog cycles) mix, i.e. they exist on the same territory.

The Arctic Fox

Unfortunately, there are few figures available to support the statement that the arctic fox is a vector according to our definition. The only data at hand are the following:

Arctic Fox Rabies in Europe 1977 - 1999
Norway - Island of Svalbard

1980	13	Arctic Foxes
	3	Reindeer
	1	Seal
1981	1	Arctic Fox
1987	1	Reindeer
	2	Arctic Foxes
1990	1	Arctic Fox
1992	1	Arctic Fox

Selimov et al. cited that there are foci of arctic rabies in the Tundra in the north of the country however, without data.

TABLE 4.1.1 Countries with Raccoon Dog Rabies in Europe 1990 - 1998

Country	Total Cases	Fox %	Raccoon Dog %
Estonia	1351	46	16
Lithuania	999	32	9
Latvia	1945	46	12
Poland	19 614	70	7
Russian Federation	11 451	35	0.7
Isolated Cases in the Czech Republic (2) and Germany (9)			

TABLE 4.1.2 Dog Rabies in Europe - Turkey and Russian Federation (European part) 1998 and 1999

	Total Cases 1998 and 1999	% Domestic animals	% Dog	% Fox
TURKEY	337	99.7	84.6	0.3
RUSSIA	4331	62.7	20.3	33.9
Astrakhan Region	143	90.2	24.5	2.1
Volgograd Region	179	87.2	16.8	8.9
Rep.of Kalmykiya	62	95.2	21.0	1.6
Krasnodar Territ.	45	86.7	71.1	13.3
Stavropol Territ.	135	88.9	30.4	10.4
Novgorod Region	47	10.6	10.6	78.7
Twer Region	74	16.2	12.2	66.2
Tambov Region	29	31.0	10.3	69.0
Belgorod Region	230	69.6	13.5	29.1
Voronezh Region	141	75.2	17.0	24.1
Kursk Region	469	59.9	15.4	38.4
Orenburg Region	401	69.8	29.9	27.2
Rep.ofBashkorto-stan	654	59.5	20.5	35.9

TABLE 4.1.3: Serotine Bat Rabies - Bat Rabies Cases - Europe 1977-1987

Species	DEN	DEU	NET	POL	SPA	TOTAL
E. serotinus	160	14	83	1		258
M. daubentoni	2	1				3
M. dasycneme	1		3			4
P. pipistrellus		2				2
P. nathusii		1				1
Species unknown		7			2	9

The Serotine Bat

There are about 25 to 30 insectivorous bat species in Europe. Only a few species have been diagnosed rabid. As in the beginning of the reporting to the RBE the species was usually supplied. They are shown in TABLE 4.1.3 for the years 1977 to 1987. There is an obvious majority of serotine bats affected. Of the known species from 1987 to 1999 (there is a total of 597 rabid bats from 1977-1999) they were all named as serotine bats thus, we can safely say: this is a bat with vector quality.

How far the other rabid bat species are connected to the serotine bat species or if other species can maintain own cycles is not known.

What we can say is, there is evidence that the bat rabies virus can infect humans (1 case in the Ukraine - EBL 1, 1 case in Finland - EBL 2, both in 1985), and in 1998 3 sheep were found to be infected by the EBL 1 virus in Denmark.

The Impact of Oral Vaccination of Foxes against Rabies

Considering the development of rabies in general there has been the tremendous impact of oral vaccination of foxes against rabies in Europe. Here a fortunate development has taken place in the form of a vaccine virus for easy immunisation and a specific bait as a good carrier of the virus that could cause a large enough population of the vector species fox to be protected. This stops not only the rabies in foxes but also in the spill-over species. Just as concluded above, if the vector disappears (in this case - is protected) the disease diminishes.

The first country starting with the oral vaccination was Switzerland in 1978. In the 1980's most of the west-European countries followed and in the 1990's the east-European countries. The development of the distribution of cases can be seen in the different issues of this BULLETIN.

The improvement of rabies in Europe can be seen from the following data.

Total Rabies Cases Europe -
Annual Figures:

1977 ..... 16 821 cases
1984 ..... 23 625 cases
1989 ..... 24 377 cases
1994 ..... 8 820 cases
1999 ..... 6 591 cases

There is the following trend in Europe: rabies cases are continuously reduced resulting in an increasing number of west European countries becoming rabies-free. Lacking a source of infection no human cases occur except for imported ones. It will be the future task to keep the countries rabies free and concentrate more on bat rabies. For the latter no effective means of control has been developed yet.

While arctic rabies might be solved by parenteral vaccination, the dog rabies will remain a prominent problem where large stray populations occur.

4.2 OIE Information - An Update on Zoonoses

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An update on Zoonoses

The Office International des Epizooties, OIE, Paris, has recently released an update on zoonoses in an issue of the OIE Scientific and Technical Review, Volume 19, No. 1, April 2000.

Twenty-two papers provide information on the latest developments in the field of zoonoses, including events involving vCJD, Hendra and Nipah virus infections and West Nile viral encephalitis.

This book is an important and timely document as it summarizes many scientific papers, which make it a valuable text book.

New research results are being described in depth. Subjects like globalisation of trade, the expansion of animal production and global warming as factors which can disrupt the existing balance and thus, increase risk are being considered. Allowance is being made for both veterinary as well as public health suggestions. They are commented in the light of the latest research.

The book can be obtained from OIE, 12 rue de Prony, 75017 Paris, France, for 45 US Dollars.

Bat Lyssavirus Infections

For the person who is especially interested in rabies there is a paper by K.A. McColl, N. Tordo and A. Aguilar Setién (Rev. Sci. tech. Off. int. Epiz., 2000, 19 (1), 177-196) with reference to rabies and rabies-related viruses in bats.

We learn that of the presently known 7 different lyssavirus genotypes only one (genotype 3) does not involve bats and, here, these animals as carriers have yet to be excluded.

The major problems like rabies caused by haematophagous bats in Central and Latin America, by insectivorous bats in North America and in Europe and by frugivorous bats in Australia are described in detail.

Bat families are reported with the genera in which lyssaviruses infections have been detected.

The very comprehensive paper has the following headings: Introduction, Importance for animal and public health, Aetiology, Epidemiology, Pathogenesis, Diagnosis and surveillance, Prophylaxis and treatment, and Perspectives.

There has been greater attention to the subject of bat lyssavirus infections recently; of 130 references cited the majority derive from the last 10 years therefore, the authors conclude, that in the early years of the new millennium many of the bat lyssaviruses may likely emerge from relative obscurity.

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4.3 INFORMATION -

Notes of the Editors on the Internet Version of this RABIES BULLETIN EUROPE (RBE)

- Acceptance. The analyses of the use of the RBE in the INTERNET is encouraging. The server recorded 3378 short visits in July. Altogether 1379 pages of the RBE were looked at by the viewers.

- We intend increasing the acceptance by announcing the online version to possible interested professional addresses and getting the search engines involved.

- The following improvements are intended:
  - addresses of the list of contributors will be presented more detailed so that the readers of the RBE wishing more information can establish direct contact,
  - there might be differences of the hard copy and Internet version in-as-much as certain presentations when possible can be presented in colour in the INTERNET version however as black and white in the hard copy,
  - mistakes discovered late in the hard copy can easily be corrected in the INTERNET version.

- **Mistakes being found in issue 4/99** and to be corrected in the INTERNET version:
  1. On page 10, text Slovak Republic it says in brackets 55 foxes and should say 88. The figure in the table is correct.
  2. The single map of Croatia in the INTERNET version shows the situation of issue 1/99 not issue 4/99.

- There might be a delay of presenting this issue (1/2000) on the INTERNET as our administration has problems in sorting out financial arrangements.

- You had no chance to access via the www.rabnet.who.int address as announced it in our previous issue of the RBE. This mistake has been corrected. There is now a link from the homepage of the WHO to the RABNET server via Rabies Bulletin Europe.

- Once more the opportunity is taken to ask the contributors to the RBE to improve their supply of data and information:
  - to provide explanatory text to accompany the data,
  - present the distribution of data on administrative maps,
  - refer to control efforts (parenteral and oral vaccination),
  - mention human rabies in the country,
  - name bats involved in rabies with their scientific name,
  - present surveillance data with negative results.

TABLE 5.1

EUR EUROPE **1/2000** RABIES CASES 1. 1.00 - 31. 3.00

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
ALB ALBANIA *							0						0		0
AUT AUSTRIA							0	1	-	-	-	-	1		1
BEL BELGIUM *							0						0		0
BIH BOSNA I HERCEGOWIN							0	9	-	-	-	-	9		9
BUL BULGARIA							0	-	-	-	-	6	6		6
BYE BELARUS	9	10	-	-	-	-	19	35	-	-	-	1	36		55
CRO CROATIA	6	5	-	-	8	-	19	415	-	6	2	10	433		452
CZH CZECH REPUBLIC	1	-	-	-	-	-	1	39	-	-	3	-	42		43
DEN DENMARK *							0						0		0
DEU FED.REP.OF GERMANY	-	-	1	-	2	-	3	45	1	-	-	-	46		49
EST ESTONIA 1)	1	-	-	-	-	-	1	11	-	-	-	2	13		14
FIN FINLAND *							0						0		0
FRA FRANCE							0	-	-	-	-	1	1		1
FRY FED.REP.OF YUGOSLA	4	4	-	2	-	-	10	53	-	-	-	-	53		63
GRE GREECE *							0						0		0
HUN HUNGARY	4	13	3	3	-	-	23	154	-	-	-	1	155		178
ICE ICELAND *							0						0		0
IRE IRELAND *							0						0		0
ITA ITALY *							0						0		0
LTU LITHUANIA	12	15	8	-	-	-	35	70	-	10	-	44	124		159
LUX LUXEMBOURG *							0						0		0
LVA LATVIA	11	12	3	-	-	-	26	45	2	1	-	39	87		113
MLD MOLDOVA	2	-	1	-	-	-	3	4	-	-	-	-	4		7
NET NETHERLANDS *							0						0		0
NOR NORWAY *							0						0		0
POL POLAND	10	20	9	-	-	-	39	371	1	8	4	43	427		466
POR PORTUGAL *							0						0		0
ROM ROMANIA	7	2	3	-	-	-	12	11	-	-	-	1	12		24
RUS RUSSIAN FEDERATION	67	48	40	2	4	1	162	126	-	2	-	5	133	3	298
SPA SPAIN *							0						0		0
SVK SLOVAK REPUBLIC	5	11	1	-	1	-	18	114	-	2	-	1	117		135
SVN SLOVENIA	1	-	-	-	-	-	1	18	-	-	-	-	18		19
SWE SWEDEN *							0						0		0
SWI SWITZERLAND + LIEC*							0						0		0
TUR TURKEY	99	-	7	-	2	1	109	3	-	-	-	2	5		114
TYM MAKEDONIJA *							0						0		0
UKR UKRAINE **							0						0		0
UNK UNITED KINGDOM *							0						0		0
TOTAL	239	140	76	7	17	2	481	1524	4	29	9	156	1722	3	2206
PER CENT	10.8	6.3	3.4	0.3	0.8	0.1	21.8	69.1	0.2	1.3	0.4	7.1	78.1	0.1	100.0

* NO CASES ** NO DATA 1) NO DATA FOR MARCH

TABLE 5.2

EUR E U R O P E **1/2000** R A B I E S C A S E S 'OTHER ANIMAL SPECIES' 1. 1.00 - 31. 3.00

LOCATION CODE NAME	OTHER DOM. ANIMALS		OTHER WILD ANIMALS							UNSPECIF.	TOTAL
	DONKEY	PIG	OTH.FOX SPECI.	JACKAL	WOLF	RACCOON DOG	WILD CAT	INSECTIV BAT	OTH.WILD ANIMAL		
BUL BULGARIA	-	-	-	-	-	-	-	-	-	6	6
BYE BELARUS	-	-	-	-	-	1	-	-	-	-	1
CRO CROATIA	-	-	-	-	-	-	-	-	10	-	10
EST ESTONIA	-	-	-	-	-	2	-	-	-	-	2
FRA FRANCE	-	-	-	-	-	-	-	1	-	-	1
HUN HUNGARY	-	-	-	-	-	-	1	-	-	-	1
LTU LITHUANIA	-	-	-	-	-	44	-	-	-	-	44
LVA LATVIA	-	-	-	-	1	38	-	-	-	-	39
POL POLAND	-	-	-	-	1	42	-	-	-	-	43
ROM ROMANIA	-	-	-	-	-	-	-	-	1	-	1
RUS RUSSIAN FEDERATION	-	1	1	1	-	3	-	-	-	-	6
SVK SLOVAK REPUBLIC	-	-	-	-	-	-	1	-	-	-	1
TUR TURKEY	1	-	-	1	1	-	-	-	-	-	3
TOTAL	1	1	1	2	3	130	2	1	11	6	158
PER CENT	0.6	0.6	0.6	1.3	1.9	82.3	1.3	0.6	7.0	3.8	100.0

RABIES CASES 1. 1.00 - 31. 3.00

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
AUT AUSTRIA															
108 OBERPULLENDORF							0	1	-	-	-	-	1		1
CRO CROATIA															
01 Zagrebacka							0	31	-	-	-	-	31		31
02 Krapinsko-Zagorska	-	1	-	-	-	-	1	29	-	-	1	-	30		31
03 Sisacko-Moslavaca							0	11	-	-	-	-	11		11
04 Karlovacka	-	1	-	-	-	-	1	15	-	-	-	-	15		16
05 Varazdinska							0	8	-	-	-	-	8		8
06 Koprivnicko-Krizevack	2	1	-	-	-	-	3	54	-	1	1	1	57		60
07 Bjelovarsko-Bilogorsk	-	1	-	-	2	-	3	34	-	-	-	-	34		37
08 Primorsko-Goranska							0	13	-	-	-	-	13		13
09 Licko-Senjska							0	15	-	-	-	1	16		16
10 Viroviticko-Podravska							0	23	-	-	-	-	23		23
11 Pozesko-Slavonska	-	-	-	-	6	-	6	14	-	-	-	-	14		20
12 Brodsko-Posavska							0	24	-	-	-	-	24		24
13 Zadarska							0	4	-	-	-	3	7		7
14 Osijecko-Baranjska	1	1	-	-	-	-	2	23	-	-	-	-	23		25
15 Sibensko-Kninska							0	19	-	-	-	2	21		21
16 Vukovarsko-Srijemska							0	32	-	-	-	-	32		32
17 Splitsko-Dalmatinska	3	-	-	-	-	-	3	12	-	4	-	3	19		22
18 Istarska							0	48	-	1	-	-	49		49
21 Zagreb							0	6	-	-	-	-	6		6
TOTAL	6	5	0	0	8	0	19	415	0	6	2	10	433	0	452
PER CENT	1.3	1.1	0.0	0.0	1.8	0.0	4.2	91.8	0.0	1.3	0.4	2.2	95.8	0.0	100.0
DEU FED.REP.OF GERMANY															
05 Nordrhein-Westfalen	-	-	1	-	2	-	3	8	1	-	-	-	9		12
06 Hessen							0	15	-	-	-	-	15		15
09 Bayern							0	20	-	-	-	-	20		20
14 Sachsen							0	2	-	-	-	-	2		2
TOTAL	0	0	1	0	2	0	3	45	1	0	0	0	46	0	49
PER CENT	0.0	0.0	2.0	0.0	4.1	0.0	6.1	91.8	2.0	0.0	0.0	0.0	93.9	0.0	100.0

RABIES CASES 1. 1.00 - 31. 3.00

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
BIH BOSNA I HERCEGOWINA															
033 Tuzla							0	1	-	-	-	-	1		1
036 Lukavac							0	3	-	-	-	-	3		3
043 Gracanica							0	3	-	-	-	-	3		3
067 Bos.Petrovac							0	2	-	-	-	-	2		2
TOTAL	0	0	0	0	0	0	0	9	0	0	0	0	9	0	9
FRY FED.REP.OF YUGOSLAVIA															
01 Beograd	-	1	-	-	-	-	1	2	-	-	-	-	2		3
02 Pancevo							0	4	-	-	-	-	4		4
03 Novi Sad	-	1	-	-	-	-	1	25	-	-	-	-	25		26
04 Zrenjanin	1	1	-	-	-	-	2	4	-	-	-	-	4		6
05 Subotica	3	1	-	-	-	-	4	11	-	-	-	-	11		15
06 Sombor							0	2	-	-	-	-	2		2
07 Sabac							0	2	-	-	-	-	2		2
08 Pozarevac							0	2	-	-	-	-	2		2
13 Podgorica	-	-	-	2	-	-	2	1	-	-	-	-	1		3
TOTAL	4	4	0	2	0	0	10	53	0	0	0	0	53	0	63
PER CENT	6.3	6.3	0.0	3.2	0.0	0.0	15.9	84.1	0.0	0.0	0.0	0.0	84.1	0.0	100.0
ROM ROMANIA															
04 BACAU	2	-	-	-	-	-	2						0		2
05 BIHOR							0	2	-	-	-	-	2		2
11 CARAS-SEVERIN	2	-	-	-	-	-	2						0		2
21 HARGHITA	-	1	-	-	-	-	1	3	-	-	-	-	3		4
22 HUNEDOARA							0	1	-	-	-	-	1		1
23 IALOMITA	1	-	-	-	-	-	1						0		1
28 NEAMT	-	-	2	-	-	-	2						0		2
31 SATU-MARE	1	-	-	-	-	-	1						0		1
32 SALAJ	-	1	-	-	-	-	1	1	-	-	-	-	1		2
34 SUCEAVA	1	-	-	-	-	-	1	1	-	-	-	-	1		2
37 TULCEA							0	1	-	-	-	1	2		2
38 VASLUI	-	-	1	-	-	-	1	1	-	-	-	-	1		2
40 VRANCEA							0	1	-	-	-	-	1		1
TOTAL	7	2	3	0	0	0	12	11	0	0	0	1	12	0	24
PER CENT	29.2	8.3	12.5	0.0	0.0	0.0	50.0	45.8	0.0	0.0	0.0	4.2	50.0	0.0	100.0

RABIES CASES 1. 1.00 - 31. 3.00

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
BUL BULGARIA															
15 PLEVEN							0	-	-	-	-	6	6		6
TUR TURKEY															
08 ARTVIN	1	-	1	-	-	-	2						0		2
10 BALIKESIR	5	-	-	-	-	-	5						0		5
15 BURDUR	1	-	-	-	-	-	1						0		1
16 BURSA	19	-	1	-	-	-	20						0		20
19 CORUM	1	-	-	-	-	-	1						0		1
21 DIYARBAKIR	4	-	3	-	1	-	8	-	-	-	-	1	1		9
23 ELAZIG	1	-	-	-	-	-	1						0		1
25 ERZURUM	1	-	-	-	-	-	1						0		1
27 GAZIANTEP	6	-	-	-	-	1	7						0		7
31 HATAY	5	-	1	-	-	-	6						0		6
33 ICEL	1	-	-	-	-	-	1						0		1
34 ISTANBUL	27	-	-	-	-	-	27	-	-	-	-	1	1		28
35 IZMIR	10	-	1	-	1	-	12	3	-	-	-	-	3		15
41 KOCAELI	2	-	-	-	-	-	2						0		2
42 KONYA	1	-	-	-	-	-	1						0		1
44 MALATYA	1	-	-	-	-	-	1						0		1
46 KAHRAMANMARAS	1	-	-	-	-	-	1						0		1
47 MARDIN	1	-	-	-	-	-	1						0		1
49 MUS	1	-	-	-	-	-	1						0		1
63 SANLIURFA	7	-	-	-	-	-	7						0		7
64 USAK	1	-	-	-	-	-	1						0		1
68 AKSARAY	2	-	-	-	-	-	2						0		2
TOTAL	99	0	7	0	2	1	109	3	0	0	0	2	5	0	114
PER CENT	86.8	0.0	6.1	0.0	1.8	0.9	95.6	2.6	0.0	0.0	0.0	1.8	4.4	0.0	100.0

RABIES CASES 1. 1.00 - 31. 3.00

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
BYE BELARUS															
02 Vitebsk Region	2	1	-	-	-	-	3	4	-	-	-	-	4		7
03 Gomel Region	1	1	-	-	-	-	2	1	-	-	-	-	1		3
04 Grodno Region	3	8	-	-	-	-	11	24	-	-	-	-	24		35
05 Minsk Region	3	-	-	-	-	-	3	6	-	-	-	1	7		10
TOTAL	9	10	0	0	0	0	19	35	0	0	0	1	36	0	55
PER CENT	16.4	18.2	0.0	0.0	0.0	0.0	34.5	63.6	0.0	0.0	0.0	1.8	65.5	0.0	100.0
HUN HUNGARY															
01 Budapest							0	1	-	-	-	-	1		1
02 Baranya							0	1	-	-	-	-	1		1
03 Bacs-Kiskun	1	6	-	-	-	-	7	31	-	-	-	-	31		38
04 Bekes	-	2	-	-	-	-	2	16	-	-	-	-	16		18
05 Borsod-Abauj-Zemplen	-	-	2	-	-	-	2	28	-	-	-	1	29		31
06 Csongrad	-	1	-	-	-	-	1	8	-	-	-	-	8		9
07 Fejer							0	1	-	-	-	-	1		1
09 Hajdu-Bihar	1	1	1	-	-	-	3	17	-	-	-	-	17		20
10 Heves	1	1	-	2	-	-	4	11	-	-	-	-	11		15
12 Nograd							0	2	-	-	-	-	2		2
13 Pest	1	1	-	1	-	-	3	24	-	-	-	-	24		27
15 Szabolcs-Szatmar-Bere							0	7	-	-	-	-	7		7
16 Jasz-Nagykun-Szolnok	-	1	-	-	-	-	1	7	-	-	-	-	7		8
TOTAL	4	13	3	3	0	0	23	154	0	0	0	1	155	0	178
PER CENT	2.2	7.3	1.7	1.7	0.0	0.0	12.9	86.5	0.0	0.0	0.0	0.6	87.1	0.0	100.0
SVN SLOVENIA															
009 BREZICE							0	1	-	-	-	-	1		1
017 CRNOMELJ							0	7	-	-	-	-	7		7
050 KOPER							0	1	-	-	-	-	1		1
073 METLIKA							0	2	-	-	-	-	2		2
085 NOVO MESTO	1	-	-	-	-	-	1	3	-	-	-	-	3		4
109 SEMIC							0	1	-	-	-	-	1		1
130 TREBNJE							0	3	-	-	-	-	3		3
TOTAL	1	0	0	0	0	0	1	18	0	0	0	0	18	0	19
PER CENT	5.3	0.0	0.0	0.0	0.0	0.0	5.3	94.7	0.0	0.0	0.0	0.0	94.7	0.0	100.0

RABIES CASES 1. 1.00 - 31. 3.00

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
CZH	CZECH REPUBLIC															
01	Central Bohemia							0	11	-	-	2	-	13		13
02	South Bohemia							0	1	-	-	-	-	1		1
04	North Bohemia	1	-	-	-	-	-	1	18	-	-	1	-	19		20
06	South Moravia							0	9	-	-	-	-	9		9
TOTAL		1	0	0	0	0	0	1	39	0	0	3	0	42	0	43
PER CENT		2.3	0.0	0.0	0.0	0.0	0.0	2.3	90.7	0.0	0.0	7.0	0.0	97.7	0.0	100.0
POL	POLAND															
04	Kujawsko-Pomorskie	1	6	1	-	-	-	8	23	-	2	-	8	33		41
06	Lubelskie	-	1	-	-	-	-	1	40	-	-	-	-	40		41
10	Lodzkie	-	2	-	-	-	-	2	10	-	-	-	-	10		12
12	Malopolskie							0	23	-	-	2	-	25		25
14	Mazowieckie	1	-	1	-	-	-	2	40	-	1	-	3	44		46
18	Podkarpackie	2	6	1	-	-	-	9	91	-	2	-	5	98		107
20	Podlaskie	2	-	2	-	-	-	4	49	-	2	-	6	57		61
22	Pomorskie							0	2	-	-	-	-	2		2
24	Slaskie							0	5	-	1	1	-	7		7
26	Swietokrzyskie	1	2	-	-	-	-	3	42	-	-	-	-	42		45
28	Warminsko-Mazurskie	3	3	4	-	-	-	10	41	1	-	-	20	62		72
30	Wielkopolskie							0	5	-	-	1	1	7		7
TOTAL		10	20	9	0	0	0	39	371	1	8	4	43	427	0	466
PER CENT		2.1	4.3	1.9	0.0	0.0	0.0	8.4	79.6	0.2	1.7	0.9	9.2	91.6	0.0	100.0
SVK	SLOVAK REPUBLIC															
1	Bratislavsky kraj							0	12	-	-	-	1	13		13
2	Trnavsky kraj	-	-	-	-	1	-	1	9	-	1	-	-	10		11
3	Trenciansky kraj							0	6	-	-	-	-	6		6
4	Nitriansky kraj	1	1	-	-	-	-	2	13	-	-	-	-	13		15
5	Zilinsky kraj							0	5	-	-	-	-	5		5
6	Banskobystricky kraj	3	6	-	-	-	-	9	34	-	-	-	-	34		43
7	Presovsky kraj	-	4	1	-	-	-	5	23	-	1	-	-	24		29
8	Kosicky kraj	1	-	-	-	-	-	1	12	-	-	-	-	12		13
TOTAL		5	11	1	0	1	0	18	114	0	2	0	1	117	0	135
PER CENT		3.7	8.1	0.7	0.0	0.7	0.0	13.3	84.4	0.0	1.5	0.0	0.7	86.7	0.0	100.0

RABIES CASES 1. 1.00 - 31. 3.00

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
EST	ESTONIA 1)															
01	Harjumaa							0	1	-	-	-	-	1		1
06	Laeaenemaa							0	1	-	-	-	-	1		1
08	Polvamaa							0	2	-	-	-	-	2		2
09	Paernumaa							0	1	-	-	-	-	1		1
10	Raplamaa							0	1	-	-	-	-	1		1
12	Tartumaa							0	1	-	-	-	1	2		2
14	Viljandimaa							0	1	-	-	-	1	2		2
15	Vorumaa	1	-	-	-	-	-	1	3	-	-	-	-	3		4
TOTAL		1	0	0	0	0	0	1	11	0	0	0	2	13	0	14
PER CENT		7.1	0.0	0.0	0.0	0.0	0.0	7.1	78.6	0.0	0.0	0.0	14.3	92.9	0.0	100.0
LVA	LATVIA															
01	Aizkraukle							0	1	-	-	-	-	1		1
02	Aluksne							0	2	-	-	-	3	5		5
03	Balvi							0	1	-	-	-	-	1		1
04	Bauska	1	1	-	-	-	-	2	4	1	-	-	4	9		11
05	Cesis	1	-	-	-	-	-	1						0		1
06	Daugavpils	1	1	-	-	-	-	2	1	-	-	-	6	7		9
07	Dobele	-	1	-	-	-	-	1	3	-	-	-	2	5		6
08	Gulbene	1	-	-	-	-	-	1	3	-	-	-	1	4		5
09	Jekabpils							0	1	-	-	-	2	3		3
10	Jelgava	-	-	1	-	-	-	1	2	1	-	-	2	5		6
11	Kraslava							0	1	-	-	-	1	2		2
12	Kuldiga	3	2	-	-	-	-	5	6	-	-	-	2	8		13
13	Liepaja							0	1	-	-	-	3	4		4
14	Limbazi							0	1	-	1	-	-	2		2
16	Madona							0	3	-	-	-	-	3		3
17	Ogre	1	-	-	-	-	-	1	3	-	-	-	1	4		5
19	Rezekne	1	-	1	-	-	-	2						0		2
20	Riga	-	1	-	-	-	-	1	-	-	-	-	1	1		2
21	Saldus	2	4	1	-	-	-	7	3	-	-	-	-	3		10
22	Talsi							0	2	-	-	-	1	3		3
23	Tukums							0	3	-	-	-	6	9		9
24	Valka							0	2	-	-	-	1	3		3
25	Valmiera							0	1	-	-	-	1	2		2
26	Ventspils	-	2	-	-	-	-	2	1	-	-	-	2	3		5
TOTAL		11	12	3	0	0	0	26	45	2	1	0	39	87	0	113
PER CENT		9.7	10.6	2.7	0.0	0.0	0.0	23.0	39.8	1.8	0.9	0.0	34.5	77.0	0.0	100.0

1) NO DATA FOR MARCH

RABIES CASES 1. 1.00 - 31. 3.00

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
FRA FRANCE															
03 ALLIER							0	-	-	-	-	1	1		1
LTU LITHUANIA															
33 Alytaus	3	-	-	-	-	-	3	12	-	-	-	2	14		17
34 Anyksciu	-	1	-	-	-	-	1	-	-	-	-	1	1		2
36 Birzu	1	-	-	-	-	-	1	2	-	-	-	1	3		4
38 Varenos							0	2	-	-	-	1	3		3
39 Vilkaviskio	-	1	2	-	-	-	3	1	-	2	-	-	3		6
41 Vilniaus							0	1	-	-	-	-	1		1
47 Joniskio	-	1	-	-	-	-	1	4	-	1	-	-	5		6
51 Marijampoles	1	1	-	-	-	-	2	1	-	-	-	1	2		4
52 Kauno							0	-	-	-	-	1	1		1
53 Kedainiai	-	2	-	-	-	-	2	5	-	2	-	6	13		15
54 Kelmes							0	2	-	-	-	-	2		2
55 Klaipedos							0	3	-	-	-	1	4		4
56 Kretdingos	1	-	-	-	-	-	1	3	-	-	-	-	3		4
57 Kupiskio	-	-	1	-	-	-	1						0		1
59 Lazdiju							0	4	-	1	-	5	10		10
61 Mazeikiu	1	-	-	-	-	-	1						0		1
65 Pakruojo	1	2	1	-	-	-	4	1	-	-	-	2	3		7
66 Panevezio							0	1	-	-	-	2	3		3
67 Pasvalio	2	1	-	-	-	-	3	3	-	-	-	-	3		6
68 Plunges							0	3	-	-	-	-	3		3
69 Prienu	1	1	2	-	-	-	4	3	-	1	-	5	9		13
71 Radviliskio	-	2	-	-	-	-	2	2	-	2	-	-	4		6
72 Raseiniai	1	1	-	-	-	-	2	1	-	-	-	2	3		5
75 Skuodo							0	2	-	-	-	2	4		4
77 Taurages							0	2	-	-	-	1	3		3
79 Traku							0	2	-	-	-	-	2		2
81 Ukmerges	-	-	1	-	-	-	1	-	-	-	-	1	1		2
82 Utenos							0	1	-	-	-	3	4		4
84 Sakiu	-	1	-	-	-	-	1	-	-	-	-	1	1		2
88 Silutes							0	5	-	-	-	1	6		6
89 Sirvintu	-	-	1	-	-	-	1	-	-	-	-	1	1		2
94 Jurbarko	-	1	-	-	-	-	1	4	-	1	-	4	9		10
TOTAL	12	15	8	0	0	0	35	70	0	10	0	44	124	0	159
PER CENT	7.5	9.4	5.0	0.0	0.0	0.0	22.0	44.0	0.0	6.3	0.0	27.7	78.0	0.0	100.0

RABIES CASES 1. 1.00 - 31. 3.00

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
MLD MOLDOVA															
01 MOLDOVA	2	-	1	-	-	-	3	4	-	-	-	-	4		7
TOTAL	2	0	1	0	0	0	3	4	0	0	0	0	4	0	7
PER CENT	28.6	0.0	14.3	0.0	0.0	0.0	42.9	57.1	0.0	0.0	0.0	0.0	57.1	0.0	100.0
RUS RUSSIAN FEDERATION															
08 Pskov Region	1	1	-	-	-	-	2	2	-	-	-	1	3		5
09 Bryansk Region	3	-	-	-	-	-	3	2	-	-	-	-	2		5
10 Vladimir Region	2	-	-	-	-	-	2	1	-	-	-	-	1		3
12 Twer Region	3	1	-	-	-	-	4	21	-	-	-	-	21	1	26
13 Kaluga Region							0	1	-	-	-	-	1		1
15 Moscow Region	1	-	-	-	-	-	1	15	-	-	-	-	15	1	17
16 Oryol Region	2	3	2	-	-	-	7	7	-	2	-	-	9		16
17 Ruazan Region	1	-	-	-	-	-	1						0		1
18 Smolensk Region							0	1	-	-	-	1	2		2
19 Tula Region	1	3	1	-	1	-	6	3	-	-	-	-	3		9
25 Rep. of Chuvashiya	-	-	2	-	-	-	2	14	-	-	-	-	14		16
26 Belgorod Region	5	4	-	-	-	-	9	3	-	-	-	-	3		12
27 Voronezh Region	3	6	2	-	1	-	12	2	-	-	-	-	2		14
28 Kursk Region	5	5	4	-	1	-	15	15	-	-	-	1	16		31
30 Tambov Region	1	-	2	-	-	-	3						0		3
31 Astrakhan Region	4	5	-	-	1	1	11	-	-	-	-	1	1		12
32 Volgograd Region	3	2	-	-	-	-	5						0	1	6
33 Samara Region	1	-	4	-	-	-	5	3	-	-	-	-	3		8
34 Penza Region	3	3	-	-	-	-	6	12	-	-	-	-	12		18
35 Saratov Region	2	5	1	-	-	-	8	7	-	-	-	-	7		15
36 Ulyanovsk Region	-	2	-	-	-	-	2						0		2
37 Rep. of Kalmykiya	2	1	2	-	-	-	5						0		5
38 Rep. of Tatarstan	2	-	-	1	-	-	3	4	-	-	-	-	4		7
39 Krasnodar Territory	4	-	-	-	-	-	4						0		4
40 Stavropol Territory	2	2	11	-	-	-	15	2	-	-	-	-	2		17
41 Rostov Region	4	1	2	-	-	-	7	4	-	-	-	-	4		11
42 Orenburg Region	2	2	3	1	-	-	8	-	-	-	-	1	1		9
44 Rep. of Bashkortostan	1	2	2	-	-	-	5	4	-	-	-	-	4		9
45 Rep. of Odmurtiya	1	-	-	-	-	-	1						0		1
46 Kaliningrad Region	8	-	2	-	-	-	10	3	-	-	-	-	3		13
TOTAL	67	48	40	2	4	1	162	126	0	2	0	5	133	3	298
PER CENT	22.5	16.1	13.4	0.7	1.3	0.3	54.4	42.3	0.0	0.7	0.0	1.7	44.6	1.0	100.0

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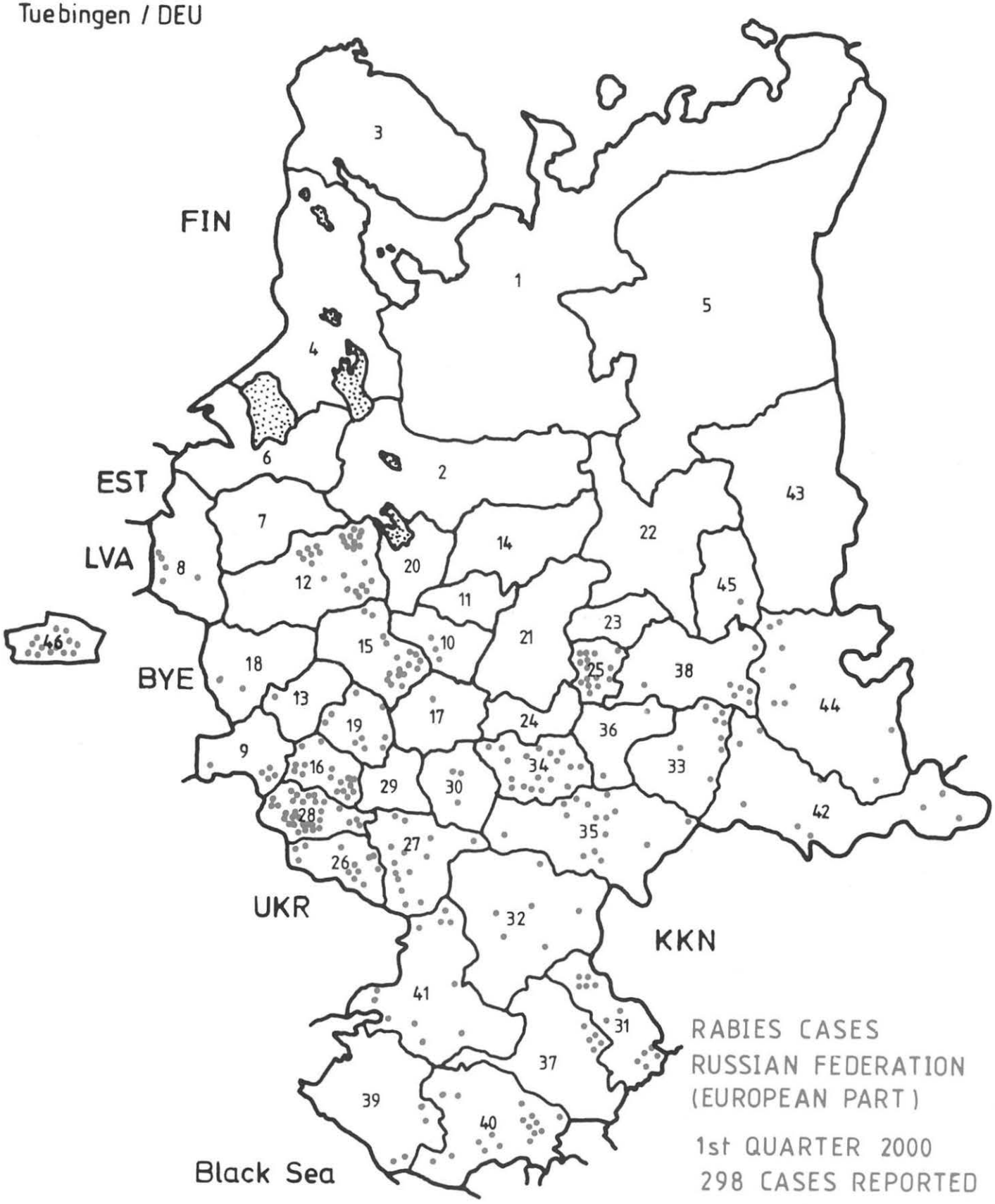
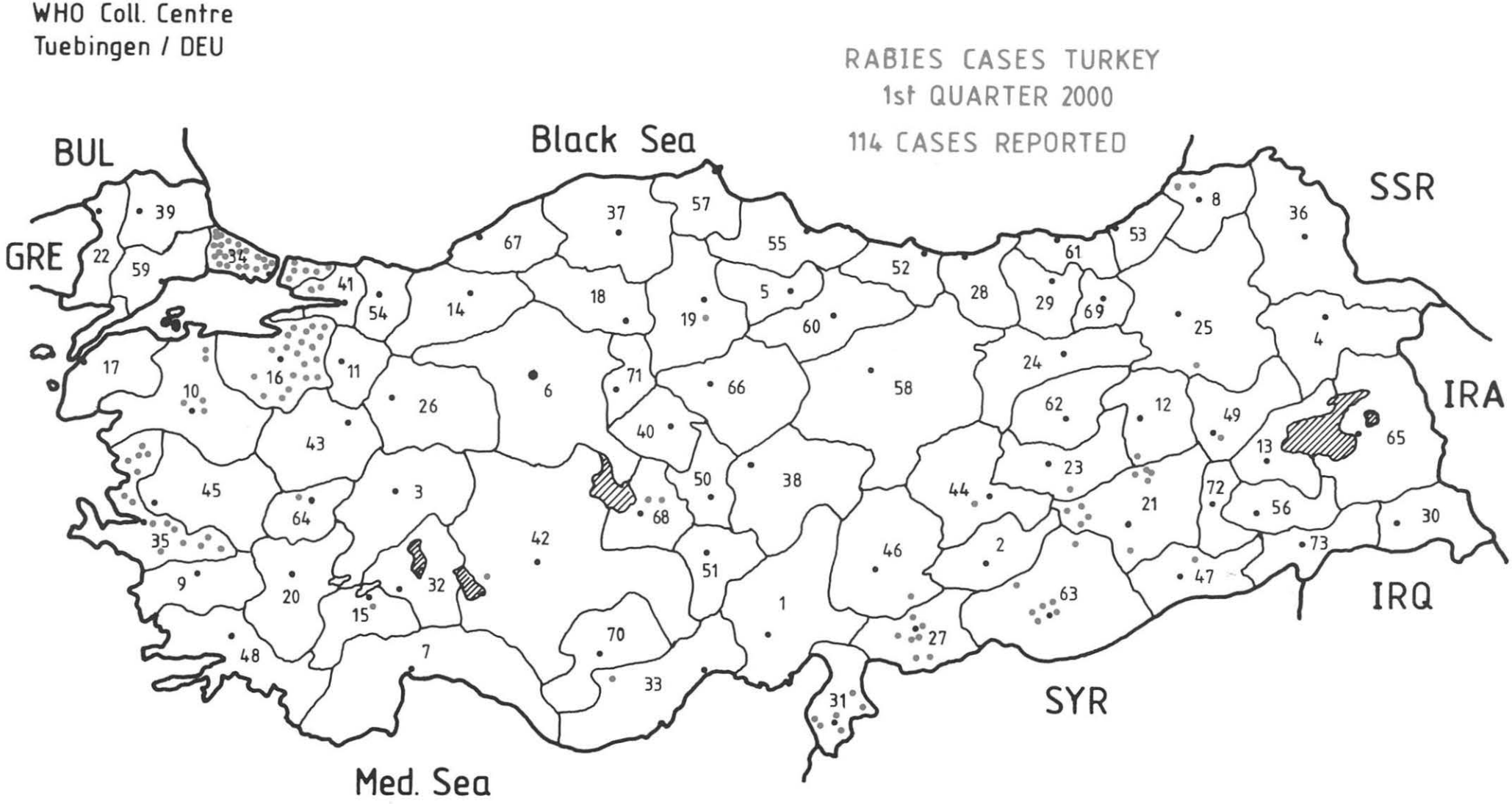


RABIES CASES
RUSSIAN FEDERATION
(EUROPEAN PART)

1st QUARTER 2000
298 CASES REPORTED

WHO Coll. Centre
Tuebingen / DEU



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RABIES CASES EUROPE
1st QUARTER 2001

2911 CASES REPORTED
2 BAT RABIES CASES REPORTED

ICE
(rabies free)

NOR
(rabies free)

FIN
(rabies free)

EST
(27)

RUS
(416)

SWE
(rabies free)

LVA
(127)

DEN
(0)

LTU
(158)

RUS

BYE
(141)

IRE
(rabies free)

UNK
(rabies free)

POL
(1144)
(1)

UKR
(no data)

NET
(0)

BEL
(0)

LUX
(rabies free)

DEU
(25)
(1)

CZH
(25)

SVK
(29)

MLD
(8)

FRA
(0)

AUT
(0)

HUN
(133)

ROM
(207)

SWI
(rabies free)

SVN
(57)

CRO

ITA
(rabies free)

BIH
(no data)

FRY
(108)

(232)

BUL
(21)

TYM
(rabies free)

POR
(rabies free)

SPA
NORTH AFRICA (0)
MAINLAND (0)

ALB
(1)

TUR
(50)

GRE
(rabies free)

0 50 100 km

(rabies free) = NO INDIGENOUS CASE REPORTED FOR AT LEAST TWO YEARS