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 2002**, subsequently referred to as ***"This Quarter"***.

In SECTION 2 a **summary of the rabies situation of the first quarter 2002** is given.

SECTION 3 (3.1-3.39) reflects the **situation for individual countries**. Unfortunately, not all countries report regularly. However, their contribution is expected.

In the **Miscellaneous** SECTION (4) under 4.1 tribute is paid to Dr. Arthur King, who passed away recently. He was a well-known rabies researcher and a respected personality. 4.2 describes the run of events of a rabies reinfected part of a federal province in Austria, and the efforts to control it by oral vaccination of foxes. In 4.3 the definition, freedom of rabies" of a country as it is understood by WHO and OIE is discussed. 4.4 continues to quote from a WHO position paper on human rabies vaccination which was started in the previous issue of this BULLETIN.

The **rabies case data** are tabulated for the **First Quarter 2002** in SECTION 5. 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 2002** is shown on a map of Europe in the ANNEX.

As has been mentioned in the previous issue of this BULLETIN, there will be a change of editorship and as well some changes in the production of the BULLETIN. This issue has for the first time a newly presented map for the geographical distribution of rabies cases.

Now all countries are being presented on one map.

Another difference to the previous maps is: several cases on one place will only be shown once. Therefore, the exact number of cases has to be obtained from the tables!

2. SUMMARY OF RABIES IN EUROPE

During ***"This Quarter"***, 2549 rabies cases were reported in Europe. Of these 1609 were in wild animals and 940 in domestic animals.

Of the 1609 cases in wild animals, 1324 (51.9% of total) were foxes, 2 corsac foxes, 6 wolves, 207 raccoon dogs, 1 wild cat, 2 lynx, 4 badgers, 2 stone martens, 21 pine martens, 13 polecats, 12 roe deer, 2 red deer, 1 wild boar, 2 insectivorous bats, 1 beaver, 1 hamster, 3 other wild animals, and 5 unspecified animals.

Of the 940 domestic animals, 351 were dogs, 209 cats, 16 horses, 4 pigs, 269 bovines, 85 sheep, 3 goats and 3 dogs living wild.

There were no human rabies cases reported during ***"This Quarter"***.

The above data are presented in TABLES 5.1 and 5.2 of 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. The combination of rabies and a high dense fox population and no or ineffective oral vaccination may cause an enormous increase of cases. On the other hand a low fox population density after a lengthy course of rabies, in combination with an effective oral vaccination, can cause a pronounced decrease.

Another factor interfering with the **fox-mediated rabies** pattern is, countries like the Russian Federation and the Ukraine with a large case record and a tendency to report relative high number of cases in domestic animals. They give a picture of a more mixed fox- and dog-mediated rabies pattern.

There was a total of 2923 cases in Europe (corrected figure) during the first quarter 2001, 374 cases more than during ***"This Quarter"***, in spite of recording for the first time as many as 340 cases for the Ukraine. All this makes an obvious decrease of cases compared to the last year.

The country with clear **dog-mediated rabies**, Turkey, recorded only 66 cases (22 dogs, 30 bovines, 5 sheep, 8 red foxes and 1 wolf).

There were 2 bat rabies cases, 1 in Germany and 1 in Poland. Because of the distinct epidemiological features of the disease, the cases are marked in a different colour in the map of the ANNEX.

Rabies-free countries in Europe during ***"This Quarter"*** were: Belgium, Cyprus, Finland, Greece, Iceland, Ireland, Italy, the Grand Duchy of Luxembourg, Norway, Portugal, Sweden, Switzerland, the United Kingdom and Northern Ireland.

There were **no rabies cases reported** from Albania, Denmark, the Netherlands, France. However, the last indigenously acquired case (terrestrial or bat) was less than two years ago.

3. RABIES IN INDIVIDUAL COUNTRIES

3.1 Albania ALB

by Kristaq Berxholi

There was no rabies case reported in the country during ***"This Quarter"***.

Surveillance

37 terrestrial animals - 32 foxes, 3 jackals, 1 pine marten, 1 stone marten, and 6 bats - *4 Rhinolophus ferrum-equinum, 1 Rhinolophus hipposideros, 1 Rhinolophus euryale* were examined for rabies during ***"This Quarter"*** with negative results.

3.2 Austria AUT

by Walter Schuller and Helmut Schnabl

After 6 years of recording no rabies there was a rabies focus established during ***"This Quarter"*** in the federal province of Kärnten, in the south of Austria. In 2 districts (Bezirke) 20 rabies cases were reported (16 foxes, 2 roe deer, 1 dog, 1 cat). As oral vaccination campaigns were immediately started (see as well the article in this BULLETIN under 4.2) the outbreak seems to have taken a fortunate course.

Next to the 20 rabies cases 4321 other samples were examined for rabies in the country with negative results.

3.3 Belgium BEL

by L. Lengele and Pierre Dechamps

The country remained **rabies-free**.

Surveillance

302 animals (130 foxes, 117 bovines, 2 cats, 42 small-ruminants, 6 badgers and 5 cervides) examined for rabies during ***"This Quarter"*** revealed negative results.

3.4 Bosnia and Herzegovina BIH

by Ramiz Velic

During ***"This Quarter"***, 23 rabies cases were reported. Of these were 21 in foxes and 2 in bovines.

3.5 Bulgaria BUL

by L. Lavchev

During ***"This Quarter"***, 5 cases were reported in Bulgaria. They were all reported in the north of the country. The animal species affected was not supplied.

3.6 Belarus BYE

by A.M. Axenov

A total of 138 rabies cases were reported in all 6 administrative regions. The following animals were diagnosed rabid: 102 foxes, 2 wolves, 5 raccoon dogs, 1 badger, 1 red deer, 18 dogs, 6 cats and 3 bovines.

3.7 Croatia CRO

by Mate Brstilo and Josip Marković

During ***"This Quarter"***, out of 1214 animals investigated for rabies (184 domestic and 1030 wild animals) a total of 134 were diagnosed rabid. The cases occurred in 18 counties, 48 municipalities respectively. The cases represent a decrease of 98 cases compared with the same period in 2001, and 14 cases more than in the previous quarter.

Of 129 wild animals rabies was reported in: 125 foxes, one badger, one pine marten and 2 roe deer.

Of 5 domestic animals rabies was reported in 2 dogs, one bovine, one goat and one sheep.

3.8 Cyprus CYP

by P. Economides

The country remained **rabies-free**.

3.9 Czech Republic CZH

by Oldrich Matouch

During ***"This Quarter"***, a total of 1458 animals (1059 foxes) were investigated for rabies in the Czech Republic. Only one rabies case was diagnosed in a fox from the district Trutnov in East Bohemia. A suspiciously be-having fox was shot in a small village near the Poland border.

There is a considerable reduction of cases compared to the first quarter of 2001, when 25 rabies cases were registered. During the previous quarter three cases were diagnosed rabid.

3.10 Denmark DEN

by Preben Willeberg and Tina Mørk

The country remained rabies-free in terrestrial animals.

There were no bat rabies cases reported.

3.11 Germany, Federal Republic DEU

by Winfried W. Müller and Matthias Kramer

A total of 16 rabies cases in animals was diagnosed. There were 14 cases in a focus of the Federal State of Hessen, 1 imported dog case in Bavaria (see as well article in previous issue of this BULLETIN), and 1 bat case in Schleswig-Holstein.

3.12 Estonia EST

by Matti Nautras

A total of 71 rabies cases was reported during ***"This Quarter"***, 15 cases more than

during the previous quarter and 44 cases more than during the first quarter 2001.

The cases occurred in 25 foxes, 38 raccoon dogs, 1 lynx, 2 dogs, 4 cats and 1 bovine.

3.13 Finland FIN

by Sirpa Kemilä

The country remained **rabies-free.**

Surveillance

The following animals were examined for rabies with negative results: 129 foxes, 65 raccoon dogs, 1 wolf, 2 badgers, 2 brown bears, 10 lynx, 1 pine marten, 2 other wild carnivores, 1 dog, 1 cat and 3 bovines.

3.14 France FRA

by Florence Cliquet

The country remained rabies-free in terrestrial animals.

.There was no report on bat rabies.

Surveillance

478 animals were examined for rabies in the country with negative results.

Erratum

*In the previous issue of the RBE, page 7, **4** bat rabies cases were reported in summary 2001. This should read **3**.*

3.15 Federal Republic FRY of Yugoslavia

by Nenad Ivančev

A total of 60 animal rabies cases (51 red foxes, 1 other wild animal, 5 dogs, 2 cats, 1 bovine) were registered during ***"This Quarter"*** in the Federal Republic of Yugoslavia. There were cases throughout the country.

3.16 Greece GRE

The country remained **rabies-free.**

3.17 Hungary HUN

by Antal Németh and Zsolt Földi

During ***"This Quarter"***, there were 40 rabies cases in animals. Eight cases of these were located west of the river Danube. Thirty cases of the total were wild animals (28 foxes, 1 red deer, 1 wild boar), 10 were domestic animals (5 bovines, 4 cats, 1 sheep).

3.18 Iceland ICE

The country remained **rabies-free.**

3.19 Ireland IRE

The country remained **rabies-free.**

3.20 Italy ITA

by Franco Mutinelli

The country remained **rabies-free.**

Surveillance

704 wild animals (650 foxes) and 45 domestic animals from Trentino Alto Adige, Veneto and Friuli Venezia Giulia Regions (northeastern Italy) were examined for rabies with negative results.

One bat was submitted for rabies examination from the Province of Trieste (Slovenian border) and was not rabid. The bat was severely damaged and this prevented the species identification.

The surveillance was increased in eastern Italy due to the development of the rabies situation in the neighbouring countries.

3.21 Lithuania LTU

by Kasimieras Lukauskas and A. Dranseika

During ***"This Quarter"***, there were 188 cases of rabies. 34 cases (18%) were registered in domestic animals (8 bovines, 13 dogs, 11 cats, 2 goats) and 154 cases (82%) in wild animals (54 foxes, 85 raccoon dogs, 6 pine martens, 5 polecats, 2 roe deer, 1 wolf, 1 beaver).

During ***"This Quarter"***, 35 districts were affected. The most affected ones were the districts of Ignalina, Lazdijai, Panevėžys, and Klaipėda.

32,526 dogs, 4509 cats and 2802 bovines were vaccinated against rabies.

No human rabies case was registered in the country.

3.22 Luxembourg LUX

by Arthur Besch

The country remained **rabies-free**.

Surveillance

57 foxes were examined for rabies with negative results.

Control

To maintain the excellent status of the rabies situation in the country it is planned for end of May to distribute by hand vaccine baits at dens to reach young foxes and, a vaccination campaign to cover the entire country in September 2002.

3.23 Latvia LVA

by V. Veldre and E. Jēgers

133 rabies cases were registered during ***"This Quarter"*** in 24 of 26 districts. 110 cases were diagnosed in wild animals (82.7% of total). 69 of the cases in wild animals were foxes, 35 raccoon dogs, 5 polecats and 1 badger. Of 23 rabies cases in domestic animals 13 were dogs and 10 cats. The most affected districts were Bauska with 18 cases, Madona 12 cases and Aizkraukle 11 cases.

3.24 Moldova MLD

by E. Renita and B. Demchenco

Out of 20 animal examined for rabies during ***"This Quarter"*** (10 foxes, 3 dogs, 4 cats, 1 goat, 1 bovine, 1 other wild animal) 10 were diagnosed rabid - 5 foxes, 1 dog, 1 cat, 1 bovine, 1 goat, 1 other wild animal.

3.25 Netherlands NET

by Monique Aalten

The country remained rabies-free in terrestrial animals.

There was no bat rabies case reported during ***"This Quarter"***.

3.26 Norway NOR

by Eivind Liven

The country remained **rabies-free.**

3.27 Poland POL

by Andrzej Komorowski

A total of 470 rabies cases was registered in Poland during ***"This Quarter"***, 72 cases less than in the previous quarter and 675 cases less than in the first quarter 2001. There were 427 cases in wild animals (376 foxes, 38 raccoon dogs, 1 lynx, 8 pine martens, 1 polecat, 2 roe deer, 1 bat) and 43 in domestic animals (16 dogs, 19 cats, 8 bovines).

3.28 Portugal POR

The country remained **rabies-free.**

3.29 Romania ROM

by Gabriel Predoi

During ***"This Quarter"***, 51 rabies cases were reported in Romania, 30 cases more than in the previous quarter and 156 cases less than during the first quarter 2001. There were 26 cases in foxes, 2 in pine martens, 1 in an other wild animal and 22 in domestic animals (9 dogs, 5 cats, 8 sheep).

3.30 Russia RUS European part only

by V.A.Vedernikov, V.A.Sedov, A.A.Shabeykin, N.A. Klementyeva, A.M. Gulyukin and I.V. Baldina B.L.Cherkasskiy and V.J. Ladnyi V.V.Seliverstov, V.N. Abramov, S.A. Kolomizev and N.V. Matochina

During ***"This Quarter"***, 742 rabies cases in animals were reported.

Of the total number of cases 491 were in domestic animals - 173 dogs, 72 cats, 161 bovines, 16 horses, 66 sheep, 3 pigs. Of 251 wild animals rabies was diagnosed in 239 foxes, 5 raccoon dogs, 1 wolf, 2 polecats, 1 pine marten, 2 corsac foxes, (*Vulpes corsac L.*), 1 hamster.

Most affected were the Republic Bashkortostan with 106 cases, the Astrakhan Region with 95, the Orenburg Region with 72, the Volgograd Region with 59, the Stavropol Territory with 55, the Voronezh Region with 49, and the Kursk Region with 38 cases.

3.31 Spain SPA

by Carlos Abellan Garcia

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

There were 2 cases in the Spanish territory of North Africa.

There was no further bat rabies case in the mainland.

3.32 Slovak Republic SVK

by Dušan Magic

A total of 36 rabies cases in animals was reported in the Slovak Republic during ***"This Quarter"***. Of these, 30 were in wild animals (29 foxes, 1 wild cat) and 6 domestic animals (3 dogs, 2 cats and 1 stray dog).

3.33 Slovenia SVN

by Zoran Kovač

Only 3 cases in foxes were registered during ***"This Quarter"***, 31 cases less than in the previous quarter, and 54 cases less than in the first quarter 2001.

3.34 Sweden SWE

The country remained **rabies-free.**

3.35 Switzerland SWI

by Reto Zanoni

The country remained **rabies-free.**

Surveillance

During ***"This Quarter"***, 56 animals were examined for rabies with negative results: 39 foxes, 1 badger, 3 stone martens, 2 bats, 4 dogs, 4 cats and 3 cattle. The bats (in brackets the community where the sample was taken) were specified as *Pipistrellus nathusii* (Hasle bei Burgdorf) and *Pippistrellus nathusii* (Luzern).

3.36 Turkey TUR

by Hüseyin Sungur

During ***"This Quarter"***, 66 rabies cases in animals were reported in Turkey. The disease occurred in 22 dogs, 30 bovines, 5 sheep and 9 wild animals (8 red foxes, 1 wolf).

13 out of 73 provinces (Il) of the country were affected by the disease. The province Aidin recorded a more extensive outbreak (13 cases). During the first quarter 2001 only 1 case was recorded .

3.37 Macedonia TYM

No data.

3.38 Ukraine UKR

by P. Verbitskiy and Liudmyla Grishok

During ***"This Quarter"***, 340 rabies cases in animals were reported in the Ukraine. Of these 195 cases were in domestic animals (72 dogs, 71 cats, 48 bovines, 1 pig, 3 sheep), and 145 in wild animals (139 foxes, 1 wolf, 1 raccoon dog, 1 badger, 3 pine martens).

Of 25 regions in the country only 1 region reported no rabies cases.

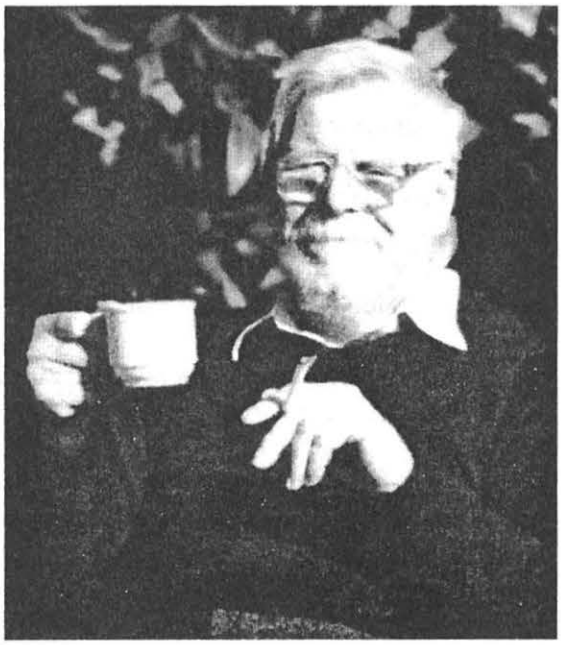
3.39 United Kingdom UNK

by Fred Landeg

The country remained **rabies-free.**

4. MISCELLANEOUS ARTICLES

Dr Arthur A King



Arthur Alfred King formerly of the Central Veterinary Laboratory, Weybridge died on June 22nd, 2002.

He was born on March 14th, 1931 in Kings Road, Chelsea, London but spent most of his childhood surrounded by the Surrey countryside whilst living in Chertsey. Arthur was educated at Woking Grammar School and after a short career in farming he started work on May 12th, 1952 at the Central Veterinary Laboratory (CVL).

Arthur's research at CVL encompassed numerous veterinary pathogens but it was in the field of rabies that he made his international scientific reputation. His career at CVL spanned over 40 years and in 1991, aged 60, with the culmination of some of his finest work on rabies monoclonal antibodies; Arthur was awarded a doctorate from the University of Surrey, UK. Additionally, in the same year as recognition of his scientific work and his service to MAFF (Ministry of Agriculture, Fisheries and Food; currently The Department of Environment, Food and Rural Affairs) he was awarded the Imperial Service Order.

Arthur engaged himself in rabies research in Africa. He cooperated with colleagues at the Onderstepoort Veterinary Institute in South Africa. Arthur also developed strong links with the World Health Organisation and was eminent in advising on rabies control policies throughout the world.

Arthur will always be remembered with great fondness for the enthusiasm he had for his work and for his loyalty to MAFF, CVL, his senior and junior officers, and more fundamentally his fulfilment of working within the international scientific community. Additionally, Arthur had a great sense of fun and always knew how to break the deadlock of an awkward meeting with a new story, joke or anecdote. Perhaps it was his character that was the secret of his success in bringing together disparate groups towards a common goal.

For those of us that had the great pleasure to know Arthur, we were touched by his generosity, modesty, intelligence and wit. His altruistic nature and his exceptional contributions to science will be of immeasurable value.
Anthony R Fooks, Weybridge

We have been collaborating with Arthur King in the laboratory for many years and met him on many occasions at meetings. His humour and friendship is a great loss to us. We are very sad that Arthur was not able to witness the completion of the book RABIES IN EUROPE AND THE MEDITERRANEAN BASIN of which he was the editor.
James H Cox and Winfried W Müller, Tübingen

4.2 The Reinfection of Rabies of Kärnten (Carinthia) in Austria - the Run of Events

by Dieter Vogl, Abteilung 10V - Veterinärwesen
Kohldorferstr. 98
A-1020 Klagenfurt, Austria

- 28.01.2002 First rabies positive fox

After 6 years of being rabies-free there was a rabid fox shot in the federal province Kärnten, Bezirk (district) Völkermarkt, Lind, Community of Griffen on 28.01.2002. The sick fox had attacked a dog and injured it badly. After confirmed rabies diagnoses of the fox the attacked dog was euthanised. The family which owned the dog, 2 adults and a baby, received rabies post exposure vaccination in the hospital of Klagenfurt.

It is assumed that the rabid fox migrated into Austria from Slovenia to start a chain of infection. The strong winter caused frozen rivers and enabled foxes easily to migrate. The nearest case of rabies to Griffen (see above) in Slovenia though, in the vicinity of the town of Maribor, was approx. 60 km away in December 2001.

- 05. - 15. 02. 2002 Three foxes found dead and diagnosed rabid in Lavantthal, Bezirk Wolfsberg.

- 15. - 17. 02. 2002 **Oral vaccination of foxes**

Considering the geographical area where the recent rabies cases had occurred 18000 vaccine baits were placed at a 15 km radius in an area of 900 km². Affected were the Bezirke Wolfsberg and Völkermarkt. FIGURE 4.1.1 shows 3 vaccination areas in Kärnten, the darkest drawn part for February, indicating the first rabies case, the northern part of it for March, and the lightest drawn part for April.

- Dog dies of rabies, Bezirk Wolfsberg

Four not vaccinated contact animals (1 dog, 3 cats) had to be euthanised. Three contact persons had to be vaccinated.

- 22. - 23. 02. 2002 Two foxes shot revealed rabid, Bezirk Völkermarkt

- 23. 02. 2002 Fox shot revealed rabid, outside vaccination area February.

Three contact animals (1 dog, 2 cats) had to be euthanised. Four contact persons were vaccinated.

- 24. 02. 2002 Fox found dead diagnosed rabid. Community of Wolfsberg

- 25. 02. 2002 Cat died and diagnosed rabid in Bezirk Wolfsberg.

One vaccinated dog was put into quarantine as it had contact to the cat. One other cat as possible contact was euthanised. One contact person (adult) was vaccinated.

- 01. 03. 2002 **15,000 Vaccine baits** (750 km²) with the help of an army helicopter and a helicopter of the Ministry of the Interior were **distributed** in the Bezirk Wolfsberg.

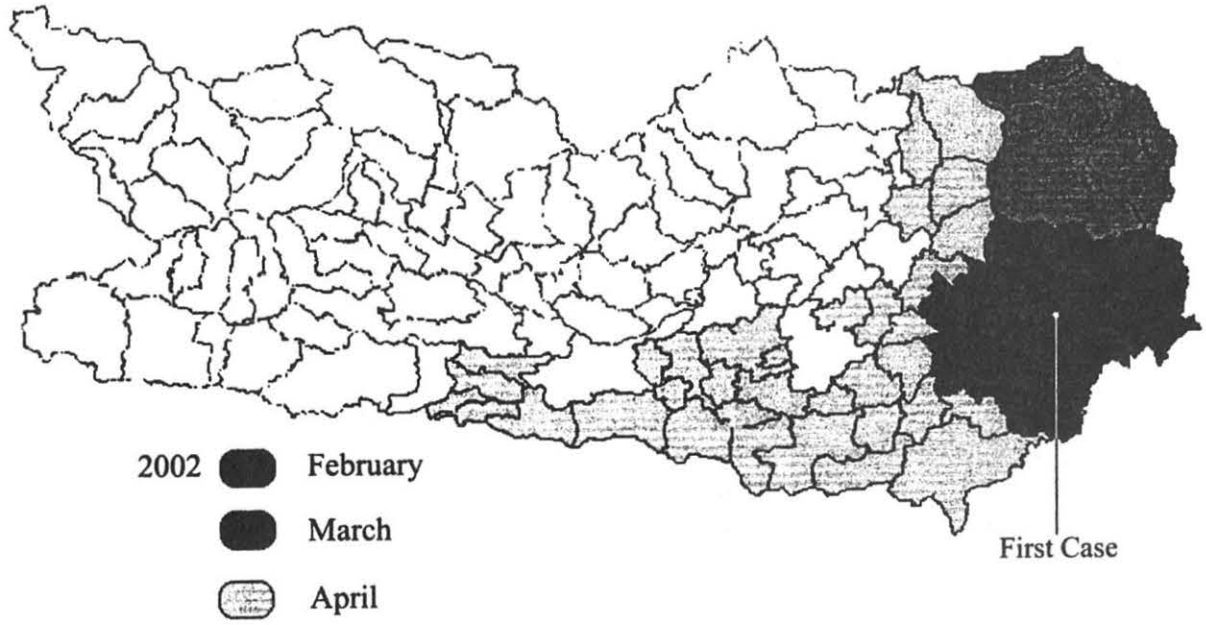
- 03. 03. - 14. 03. 2002 Five Cases (3 foxes, 2 roe deer) in the Bezirke Völkermarkt and Wolfsberg.

- 15. - 17. 03. 2002 **18,000 Vaccine baits distributed in first vaccination**

area (February), Bezirke Völkermarkt and Wolfsberg - 900 km².

- 17. 03. - 01. 04. 2002 Eight Cases in foxes, Bezirke Völkermarkt (2) and Wolfsberg (6).
- 05. 04. - 07. 04. 2002 **Oral vaccination in Bezirke Völkermarkt and Wolfsberg** and **extended to Bezirke St. Veit, Klagenfurt Land and Villach Land.**
- 03. 05. - 05. 05. 2002 **Oral vaccination in Bezirke St. Veit, Klagenfurt Land and Villach Land.**
- 01.06.2002 Badger shot and diagnosed rabid. Seven bovines which had contact were killed.
- June 2002 **A further oral vaccination campaign was carried out in the Bezirke Völkermarkt, Wolfsberg, St. Veit, Klagenfurt.**

Figure 4.2.1
Oral vaccination areas Kärnten (see text)



Editors note:

- All cases of this article are mentioned in this issue of the BULLETIN and shown in the map of Europe in the ANNEX, except for the 2 cases on 1 April 2002, which will be reported in the next issue as well as the last case of the outbreak recorded on first June 2002 in a badger which was shot (case no. 24).
- Only a bit more than a year ago (see RABIES BULLETIN EUROPE 4/2000) a similar outbreak as above, close to the Polish state border occurred in the Czech Republic. An analysis of circumstances in the Czech Republic suggested that the source was of domestic origin, thus of a local residual focus. The source of the focus in Austria suggests more of a reintroduced rabies. However, both efforts were equally well controlled by oral vaccination.

4.3 Rabies-Free - as Understood by WHO and OIE

by W. W. Müller
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Introduction

This is to explain to the contributors and readers of the RABIES BULLETIN EUROPE (RBE) what is suggested in regard to the handling of the term rabies-free by the World Health Organization (WHO), Geneva and the International Office of Epizootics (OIE), Paris and, how the editors of this BULLETIN use these definitions, *definitions* as they are differently phrased by the two organizations, both sponsoring the BULLETIN.

The difference arises mainly because of bat rabies, a disease regularly recorded in Europe since the eighties.

WHO definition

„A rabies-free area may be defined as one in which an effective import policy is implemented and, in the presence of adequate disease surveillance, no case of indigenously acquired rabies infection has been confirmed in humans or any animal species at any time during the previous 2 years. Conversely, an area can be considered to be rabies-infected if an indigenously acquired rabies infection has been confirmed in humans or any animal at any time during the previous 2 years."

(Taken from WHO Expert Committee on Rabies, Eight Report, WHO Technical Report Series 824, Geneva 1992)

OIE definition

Rabies free country

A country may be considered free from rabies when:

1) the disease is notifiable;

2) an effective system of disease surveillance is in operation;

3) all regulatory measures for the prevention and control of rabies have been implemented including effective importation procedures;

4) no case of indigenously acquired rabies infection has been confirmed in man or any animal species during the past 2 years; however, this status would not be affected by the isolation of a European Bat Lyssavirus (EBL1 or EBL2);

5) no imported case in carnivores has been confirmed outside a quarantine station for the past 6 months.

(Article 2.2.5.2 of the OIE International Health Code 2001 - Internet updated 22.4.2002)

Remarks on terrestrial and bat rabies

In 1985 when the regular reporting of bat rabies started, the investigation on the disease soon revealed obvious differences to the classical terrestrial dog- and fox-mediated rabies. The strain was different and is today classified as European Bat Lyssavirus 1 and 2 (EBL 1 and 2) or in the Lyssavirus group of rabies-like viruses as genotype 5 and 6. It can be said though that the conjugates used in the direct fluorescent antibody test for rabies diagnosis detect genotypes 1, 5 and 6.

While for a long time the transmission from bats to terrestrial animals was not noticed, there are now reports of sheep in Denmark (1998) and a stone marten in Germany (2001) which

were infected and died of the bat strain. Two human cases were reported, originating from the Ukraine (EBL 1) and Finland (EBL 2), both in 1985.

A comprehensive work on bat rabies in Spain indicates that the pathogenic quality of the virus leaves a great deal of survivors in the bat population (with a great percentage of seropositive in bats) in contrast to the classical rabies virus (genotype 1) which has a 100% mortality once clinical symptoms of the disease are noticed.

Clinical signs in bats have been described mostly as paralytic, that animals were found unable to fly. However, unusual behaviour in-as-much as the bats became active during the day, being nocturnal animals and, aggressive attacks on the cage or on humans have been observed as well.

The differences of terrestrial and bat rabies, with all the facts on bat rabies not being known in the beginning, made the editors of the RBE still emphasize the new disease by separating it wherever possible from the terrestrial rabies and showing the cases on the maps in a different colour. The handling of the term rabies-free though was difficult.

The use of rabies-free in regard to bat rabies by the editors of the RBE

The term rabies-free can easily be used if there is no terrestrial and no bat rabies in a country for two years. A country which records bat rabies only in regard to the WHO definition can be included, as bat rabies can well be considered indigenous.

There was no rabies . . . . . This phrase is used if no rabies is reported during the quarter. However, two years of no indigenous rabies has not yet passed.

Several countries though report both types of rabies. For such countries we use in the text part of the RBE: The country remained rabies-free in terrestrial animals. And, we continue to report the bat cases. Only, in recent years the use of the term in this way is not correct any more as terrestrial animals were infected by the bat virus (EBL 1) as well (see above).

A green zero in the map means *rabies-free* by the virus of the genotype 1, however, bat rabies has been reported in less than 2 years.

Arguments

The two definitions rabies-free by WHO and OIE can at this point not be combined. It is recommendable if both organizations find a common definition.

There is the question if the differences mentioned in this article distinguish bat rabies as no rabies due to the fact that the viruses are distinct from classical rabies. The virologists consider EBL 1 and 2 rabies-like viruses.

Most of the characteristics of the disease (epidemiology, pathology, clinical picture) though speak for rabies in comparison, and the common name would be helpful for the control (publicity).

The simplest solution would be to include bat rabies in the text as defined by the WHO. The disadvantages are minor.

4.4 Current Strategy for Human Rabies Vaccination and WHO Position

This is the continuation of the WHO position paper on rabies reproduced from the Weekly Epidemiological Record, WHO - 5 April, 2002, 77, pp. 116-119, http://www.who.int/wer which was begun partly in the previous issue of this BULLETIN.

Current strategies for rabies vaccination

Human deaths from rabies can effectively be prevented by vaccination, either pre-exposure vaccination or as part of post-exposure treatment.

Pre-exposure vaccination may be performed with any of the modern cell-derived vaccines and is recommended for anyone at increased risk of exposure to rabies virus. Traditionally, this recommendation includes laboratory staff, veterinarians, animal handlers, wildlife officers with frequent exposure to potentially infected animals as well as visitors to highly rabies-enzootic areas who may be exposed to rabies hosts. However, according to age-stratified studies of incidence, those at greatest risk are probably children living in rabies-enzootic regions of the developing world.

The pre-exposure schedule requires intramuscular doses of 1 ml or 0.5 ml, depending on the vaccine type, given on days 0, 7 and 28. Major vaccine manufactures recommend 1 booster dose after 1 year, and to ensure protection in persons at continued risk, booster vaccinations every 5 years, or ideally, at intervals dictated by regular testing for antirabies antibodies (titres $\geq$ 0.5 IU/ml required for protection). On the other hand, studies with the human diploid cell vaccine and the purified Vero cell rabies vaccine have shown that 10 years after a pre-exposure series followed by a single booster dose after 1 year, more than 96% of the vaccinees still have neutralizing antibodies against rabies virus.

The indication for post-exposure vaccination with or without rabies immune globulin depends on the type of contact with the rabid animal. Types of contact are: category I - touching or feeding animals, licks on the skin; category II - nibbling of uncovered skin, minor scratches or abrasions without bleeding, licks on broken skin; category III - single or multiple transdermal bites or scratches, contamination of mucous membrane with saliva from licks. For category I no treatment is required, whereas for category II immediate vaccination and for category III immediate vaccination and administration of rabies immune globulin are recommended in addition to immediate washing and flushing of all bite wounds and scratches. Depending on vaccine type, the post-exposure schedule prescribes intramuscular doses of 1 ml or 0.5 ml given as 4-5 doses over 4 weeks. For rabies-exposed patients who have previously undergone complete pre-exposure vaccination or post-exposure treatment with cell-derived rabies vaccines, 2 intramuscular doses of a cell-derived vaccine separated by 3 days are sufficient. Rabies immune globulin treatment is not necessary in such cases. The same rules apply to persons vaccinated against rabies who have demonstrated neutralizing antibody titres of at least 0.5 IU/ml.

In order to reduce the cost of post-exposure treatment, intradermal multisite regimens using a fraction of the intramuscular volume per intradermal inoculation site have been developed. Purified Vero cell vaccine has been given intradermally to more than 70,000 recipients in Thailand, where it has been in routine use for several years. Intradermal rabies vaccination is also recommended by the ministries of health of Sri Lanka (since 1995) and the Philippines (since 1997). In each of these countries the introduction of this route for post-exposure treatment has permitted the discontinuation of the local production of vaccines prepared on brain

tissue. Only the cell-derived vaccines that meet the WHO requirements regarding safety, potency and efficacy for this application may be considered for intradermal use. Although rabies vaccines are usually administered under qualified medical supervision, field experience from routine infant immunization programmes with other intradermally injected vaccines highlights the potential difficulties in assuring proper delivery. This emphasizes the need for appropriate staff training to ensure correct storage, reconstitution and injection. Provided that a correct sterile technique is used, the remaining doses may be kept in the vial at 2-8°C and used for another patient within 6 hours after reconstitution.

General WHO position on new vaccines

Vaccines for large-scale public health use should:

- meet the quality requirements as defined in the current WHO policy statement on vaccine quality;
- be safe and have a significant impact against the actual disease in all target populations;
- if intended for infants or young children, be easily adapted to schedules and timing of the national childhood immunization programmes;
- not interfere significantly with the immune response to other vaccines given simultaneously;
- be formulated to meet common technical limitations, e.g. in terms of refrigeration and storage capacity;
- be appropriately priced for different markets.

WHO position on rabies vaccines

All the above internationally available cell-derived rabies vaccines are of assured quality. If used properly, when necessary in combination with rabies immune globulin and immediate wound treatment, they are regarded as 100% effective in preventing death from rabies.

Despite development of less expensive vaccines against rabies and less vaccine-consuming administration schedules, many of the countries particularly affected by this disease can afford only the less efficacious and relatively dangerous nerve tissue vaccines. Due to their high rates of adverse effects, it is imperative that these vaccines be replaced by the more potent and safe cell-derived products. Veterinary rabies vaccines should not be used for humans.

Pre-exposure immunization is recommended for all individuals living in or travelling to highly rabies-enzootic areas, or who are exposed to rabies by nature of their occupation. Surveillance data should identify the regions where rabies is a major problem. On the basis of careful assessment of the public health impact and of cost-benefit analyses, decisions should be made whether or not to start pre-exposure vaccination of the population segments at highest risk, such as children ages 5-15 years. Studies from Viet Nam have demonstrated the feasibility, safety and immunogenicity of giving 2 doses of Vero cell vaccine intramuscularly at 2 and 4 months of age, or 3 intradermal doses at 2, 3 and 4 months of age. WHO encourages carefully designed studies on the feasibility and impact of incorporating modern rabies vaccines in the early immunization programmes of infants and children in communities where rabies is a major problem. In this context, the long-term outcome of intradermal pre-exposure vaccination of young children needs further clarification.

Efforts to eliminate rabies must involve vaccination of the animal host, mainly dogs. This im-

plies control of the dog population, vaccination of stray dogs using baits as well as traditional vaccination of owned dogs. It has been shown that rabies vaccination of 80% in dogs is sufficient to break the canine transmission chain.

Post-exposure treatment is recommended for all category II and III exposures to rabies virus. Factors that should be taken into consideration when deciding whether or not to initiate such treatment are the category of exposure, the presence of rabies in the area where the contact occurred or from which the animal came, and the animal species involved. Also, the vaccination status and clinical features of the animal involved, the type of vaccine used and the availability of the animal for observation must be considered, as should be, if available, the results of laboratory testing of the animal.

If post-exposure treatment must be given to immunocompromised individuals, HIV-positive persons, people under malaria chemoprophylaxis or people under anaesthesia, intramuscular vaccine and rabies immune globulin are mandatory and their antibody responses should be monitored serologically. It should be noted that in individuals aged over 50 years the serological response to rabies vaccination may be less efficient than in younger people. However, all seem to seroconvert after 5 doses.

Although the costs of the modern cell-derived vaccines have been decreasing since their introduction on the market, and cost-reducing regimens have been developed, these vaccines remain prohibitively expensive for the most vulnerable communities in developing countries. WHO therefore endorses initiatives to facilitate the use of modern and potent rabies vaccines and encourages increased accessibility of high-quality rabies immune globulin.

Where rabies poses a significant health problem, and money and vaccines are in short supply, the use of the intradermal route for post-exposure treatment should be considered. Also, it is important to assess the efficacy of multisite intradermal application in the absence of rabies immune globulin.

4.5 WHO Meeting of Rabies Control in Middle and East European Countries, September 25 - 27, 2002, Kosice, Slovakia

We are pleased to announce that the Slovak Republic will be the host country of the next WHO meeting of Rabies Control in middle and east European countries.

The meeting will take place in Kosice, Slovakia from September 25-27, 2002.

The meeting will be organised by the WHO Collaborating Centre for Rabies Surveillance and Research at Wusterhausen, Germany, and the WHO Collaborating Centre for Control and Management of Zoonoses at Nancy, France, in collaboration with the Slovak veterinary authorities.

This meeting is targeted to professionals with responsibilities in rabies control and covers aspects of surveillance, diagnosis and control of rabies in Europe.

Registration is free!

For more information please contact:
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Table 5.1

EUR EUROPE **1/2002** RABIES CASES 1. 1.02 - 31. 3.02

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	1	1	-	-	-	-	2	16	-	-	2	-	18		20
BEL	BELGIUM *							0						0		0
BIH	BOSNA I HERCEGOWIN	-	-	2	-	-	-	2	21	-	-	-	-	21		23
BUL	BULGARIA							0	-	-	-	-	5	5		5
BYE	BELARUS	18	6	3	-	-	-	27	102	1	-	1	7	111		138
CRO	CROATIA	2	-	1	-	2	-	5	125	1	1	2	-	129		134
CYP	CYPRUS *							0						0		0
CZH	CZECH REPUBLIC							0	1	-	-	-	-	1		1
DEN	DENMARK *							0						0		0
DEU	FED.REP.O.GERMANY 1)	1	1	-	-	-	-	2	7	-	2	4	1	14		16
EST	ESTONIA	2	4	1	-	-	-	7	25	-	-	-	39	64		71
FIN	FINLAND *							0						0		0
FRA	FRANCE *							0						0		0
FRY	FED.REP.O.YUGOSLA	5	2	1	-	-	-	8	51	-	-	-	1	52		60
GRE	GREECE *							0						0		0
HUN	HUNGARY	-	4	5	-	1	-	10	28	-	-	1	1	30		40
ICE	ICELAND *							0						0		0
IRE	IRELAND *							0						0		0
ITA	ITALY *							0						0		0
LTU	LITHUANIA	13	11	8	-	2	-	34	54	-	11	2	87	154		188
LUX	LUXEMBOURG *							0						0		0
LVA	LATVIA	13	10	-	-	-	-	23	69	1	5	-	35	110		133
MLD	MOLDOVA	1	1	1	-	1	-	4	5	-	-	-	1	6		10
NET	NETHERLANDS *							0						0		0
NOR	NORWAY *							0						0		0
POL	POLAND	16	19	8	-	-	-	43	376	-	9	2	40	427		470
POR	PORTUGAL *							0						0		0
ROM	ROMANIA	9	5	-	-	8	-	22	26	-	2	-	1	29		51
RUS	RUSSIAN FEDERATION	173	72	161	16	66	3	491	239	-	3	-	9	251		742
SPA	SPAIN 2)	-	-	-	-	-	2	2						0		2
SVK	SLOVAK REPUBLIC	3	2	-	-	-	1	6	29	-	-	-	1	30		36
SVN	SLOVENIA							0	3	-	-	-	-	3		3
SWE	SWEDEN *							0						0		0
SWI	SWITZERLAND + LIEC*							0						0		0
TUR	TURKEY	22	-	30	-	5	-	57	8	-	-	-	1	9		66
TYM	MACEDONIA **							0						0		0
UKR	UKRAINE	72	71	48	-	3	1	195	139	1	3	-	2	145		340
UNK	UNITED KINGDOM *							0						0		0
TOTAL		351	209	269	16	88	7	940	1324	4	36	14	231	1609	0	2549
PER CENT		13.8	8.2	10.6	0.6	3.5	0.3	36.9	51.9	0.2	1.4	0.5	9.1	63.1	0.0	100.0

* no cases ** no data 1) dog imported from Azerbaijan 2) in North Africa

Table 5.2

EUR E U R O P E **1/2002** R A B I E S C A S E S 'OTHER ANIMAL SPECIES' 1. 1.02 - 31. 3.02

LOCATION CODE NAME	OTH.DOM.ANIMALS		OTHER WILD ANIMALS										UNSPEC.	TOTAL
	PIG	DOG LIV. WILD	OTH.FOX SPECIES	WOLF	RACCOON DOG	WILD CAT	LYNX	WILD BOAR	INSECT. BAT	BEAVER	HAMSTER	OTH.WILD ANIMAL		
BUL BULGARIA	-	-	-	-	-	-	-	-	-	-	-	-	5	5
BYE BELARUS	-	-	-	2	5	-	-	-	-	-	-	-	-	7
DEU FED.REP.OF GERM	-	-	-	-	-	-	-	-	1	-	-	-	-	1
EST ESTONIA	-	-	-	-	38	-	1	-	-	-	-	-	-	39
FRY FED.REP.OF YUGO	-	-	-	-	-	-	-	-	-	-	-	1	-	1
HUN HUNGARY	-	-	-	-	-	-	-	1	-	-	-	-	-	1
LTU LITHUANIA	-	-	-	1	85	-	-	-	-	1	-	-	-	87
LVA LATVIA	-	-	-	-	35	-	-	-	-	-	-	-	-	35
MLD MOLDOVA	-	-	-	-	-	-	-	-	-	-	-	1	-	1
POL POLAND	-	-	-	-	38	-	1	-	1	-	-	-	-	40
ROM ROMANIA	-	-	-	-	-	-	-	-	-	-	-	1	-	1
RUS RUSSIAN FEDERAT	3	-	2	1	5	-	-	-	-	-	1	-	-	12
SPA SPAIN	-	2	-	-	-	-	-	-	-	-	-	-	-	2
SVK SLOVAK REPUBLIC	-	1	-	-	-	1	-	-	-	-	-	-	-	2
TUR TURKEY	-	-	-	1	-	-	-	-	-	-	-	-	-	1
UKR UKRAINE	1	-	-	1	1	-	-	-	-	-	-	-	-	3
TOTAL	4	3	2	6	207	1	2	1	2	1	1	3	5	238
PER CENT	1.7	1.3	0.8	2.5	87.0	0.4	0.8	0.4	0.8	0.4	0.4	1.3	2.1	100.0

Table 5.3.1

RABIES CASES 1. 1.02 - 31. 3.02

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															
208 VOELKERMARKT							0	5	-	-	1	-	6		6
209 WOLFSBERG	1	1	-	-	-	-	2	11	-	-	1	-	12		14
TOTAL	1	1	0	0	0	0	2	16	0	0	2	0	18	0	20
PER CENT	5.0	5.0	0.0	0.0	0.0	0.0	10.0	80.0	0.0	0.0	10.0	0.0	90.0	0.0	100.0
DEU FED.REP.OF GERMANY															
01 Schleswig-Holstein							0	-	-	-	-	1	1		1
06 Hessen	-	1	-	-	-	-	1	7	-	2	4	-	13		14
09 Bayern 1)	1	-	-	-	-	-	1						0		1
TOTAL	1	1	0	0	0	0	2	7	0	2	4	1	14	0	16
PER CENT	6.3	6.3	0.0	0.0	0.0	0.0	12.5	43.8	0.0	12.5	25.0	6.3	87.5	0.0	100.0
HUN HUNGARY															
02 Baranya							0	1	-	-	-	-	1		1
03 Bacs-Kiskun	-	1	-	-	-	-	1	2	-	-	-	-	2		3
04 Bekes	-	2	-	-	-	-	2	1	-	-	-	-	1		3
05 Borsod-Abauj-Zemplen	-	1	-	-	-	-	1	1	-	-	-	-	1		2
06 Csongrad	-	-	-	-	1	-	1	8	-	-	-	-	8		9
08 Gyoer-Moson-Sopron	-	-	4	-	-	-	4						0		4
09 Hajdu-Bihar							0	2	-	-	-	1	3		3
10 Heves	-	-	1	-	-	-	1						0		1
12 Nograd							0	1	-	-	-	-	1		1
13 Pest							0	2	-	-	-	-	2		2
14 Somogy							0	-	-	-	1	-	1		1
15 Szabolcs-Szatmar-Bere							0	2	-	-	-	-	2		2
16 Jasz-Nagykun-Szolnok							0	5	-	-	-	-	5		5
18 Vas							0	1	-	-	-	-	1		1
20 Zala							0	2	-	-	-	-	2		2
TOTAL	0	4	5	0	1	0	10	28	0	0	1	1	30	0	40
PER CENT	0.0	10.0	12.5	0.0	2.5	0.0	25.0	70.0	0.0	0.0	2.5	2.5	75.0	0.0	100.0
SPA SPAIN															
52 MELILLA (NORTH AFRICA	-	-	-	-	-	2	2						0		2

1) dog imported from Azerbaijan

Table 5.3.2

RABIES CASES 1. 1.02 - 31. 3.02

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															
03 Tuzlanski							0	14	-	-	-	-	14		14
05 Bosansko-Podrinjski							0	1	-	-	-	-	1		1
07 Hercegovacko-Neretvan	-	-	1	-	-	-	1	4	-	-	-	-	4		5
10 Herceg-Bosanski	-	-	1	-	-	-	1	2	-	-	-	-	2		3
TOTAL	0	0	2	0	0	0	2	21	0	0	0	0	21	0	23
PER CENT	0.0	0.0	8.7	0.0	0.0	0.0	8.7	91.3	0.0	0.0	0.0	0.0	91.3	0.0	100.0
CRO CROATIA															
01 Zagrebacka							0	9	-	-	-	-	9		9
02 Krapinsko-Zagorska							0	4	-	-	-	-	4		4
03 Sisacko-Moslavaca	2	-	-	-	2	-	4	15	-	-	2	-	17		21
04 Karlovacka							0	3	-	-	-	-	3		3
06 Koprivnicko-Krizevack							0	2	-	-	-	-	2		2
07 Bjelovarsko-Bilogorsk							0	3	-	-	-	-	3		3
09 Licko-Senjska							0	1	1	-	-	-	2		2
10 Viroviticko-Podravska							0	3	-	-	-	-	3		3
11 Pozesko-Slavonska							0	2	-	-	-	-	2		2
12 Brodsko-Posavska							0	3	-	-	-	-	3		3
13 Zadarska							0	5	-	-	-	-	5		5
14 Osijecko-Baranjska							0	5	-	-	-	-	5		5
15 Sibensko-Kninska							0	4	-	-	-	-	4		4
16 Vukovarsko-Srijemska							0	14	-	-	-	-	14		14
17 Splitsko-Dalmatinska							0	22	-	-	-	-	22		22
18 Istarska							0	23	-	1	-	-	24		24
19 Dubrovacko-Neretvansa	-	-	1	-	-	-	1	1	-	-	-	-	1		2
21 Zagreb							0	6	-	-	-	-	6		6
TOTAL	2	0	1	0	2	0	5	125	1	1	2	0	129	0	134
PER CENT	1.5	0.0	0.7	0.0	1.5	0.0	3.7	93.3	0.7	0.7	1.5	0.0	96.3	0.0	100.0
SVN SLOVENIA															
057 LASKO							0	1	-	-	-	-	1		1
135 VIDEM							0	1	-	-	-	-	1		1
172 PODLEHNIK							0	1	-	-	-	-	1		1
TOTAL	0	0	0	0	0	0	0	3	0	0	0	0	3	0	3

Table 5.3.3

RABIES CASES 1. 1.02 - 31. 3.02

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															
06	VRATZA							0	-	-	-	-	2	2		2
15	PLEVEN							0	-	-	-	-	1	1		1
25	TARGOVITCHE							0	-	-	-	-	2	2		2
TOTAL		0	0	0	0	0	0	0	0	0	0	0	5	5	0	5
MLD	MOLDOVA															
01	Balti							0	1	-	-	-	-	1		1
06	Orhei							0	2	-	-	-	-	2		2
07	Soroca	-	1	1	-	-	-	2	-	-	-	-	1	1		3
09	Ungheni	1	-	-	-	1	-	2	1	-	-	-	-	1		3
10	Chisinau Municipil							0	1	-	-	-	-	1		1
TOTAL		1	1	1	0	1	0	4	5	0	0	0	1	6	0	10
ROM	ROMANIA															
01	ALBA	1	2	-	-	-	-	3	3	-	-	-	1	4		7
03	ARGES							0	2	-	-	-	-	2		2
04	BACAU							0	1	-	-	-	-	1		1
06	BISTRITA-NASAUD							0	1	-	-	-	-	1		1
07	BOTOSANI	-	1	-	-	-	-	1						0		1
08	BRASOV							0	1	-	-	-	-	1		1
10	BUZAU							0	2	-	-	-	-	2		2
12	CALARASI	-	1	-	-	-	-	1	1	-	-	-	-	1		2
19	GIURGIU	1	-	-	-	-	-	1						0		1
20	GORJ							0	1	-	-	-	-	1		1
22	HUNEDOARA							0	2	-	-	-	-	2		2
24	IASI							0	1	-	-	-	-	1		1
27	MURES	1	-	-	-	-	-	1	2	-	1	-	-	3		4
28	NEAMT	-	1	-	-	-	-	1						0		1
30	PRAHOVA							0	3	-	-	-	-	3		3
32	SALAJ	-	-	-	-	8	-	8	1	-	-	-	-	1		9
33	SIBIU	3	-	-	-	-	-	3	2	-	1	-	-	3		6
38	VASLUI							0	2	-	-	-	-	2		2
39	VILCEA	3	-	-	-	-	-	3	1	-	-	-	-	1		4
TOTAL		9	5	0	0	8	0	22	26	0	2	0	1	29	0	51
PER CENT		17.6	9.8	0.0	0.0	15.7	0.0	43.1	51.0	0.0	3.9	0.0	2.0	56.9	0.0	100.0

Table 5.3.4

RABIES CASES 1. 1.02 - 31. 3.02

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															
01 Brest Region	1	-	-	-	-	-	1	10	1	-	-	-	11		12
02 Vitebsk Region	5	4	1	-	-	-	10	21	-	-	-	6	27		37
03 Gomel Region	5	-	2	-	-	-	7	15	-	-	-	-	15		22
04 Grodno Region							0	11	-	-	1	1	13		13
05 Minsk Region	6	1	-	-	-	-	7	28	-	-	-	-	28		35
06 Mogilev Region	1	1	-	-	-	-	2	17	-	-	-	-	17		19
TOTAL	18	6	3	0	0	0	27	102	1	0	1	7	111	0	138
PER CENT	13.0	4.3	2.2	0.0	0.0	0.0	19.6	73.9	0.7	0.0	0.7	5.1	80.4	0.0	100.0
LVA LATVIA															
01 Aizkraukle	1	1	-	-	-	-	2	5	-	-	-	4	9		11
02 Aluksne							0	2	-	-	-	1	3		3
03 Balvi	1	-	-	-	-	-	1	3	-	-	-	2	5		6
04 Bauska	1	-	-	-	-	-	1	7	1	2	-	7	17		18
05 Cesis	2	2	-	-	-	-	4	6	-	-	-	-	6		10
06 Daugavpils							0	2	-	-	-	1	3		3
07 Dobele							0	1	-	-	-	1	2		2
09 Jekabpils	1	-	-	-	-	-	1	4	-	-	-	-	4		5
10 Jelgava							0	2	-	-	-	2	4		4
11 Kraslava	2	-	-	-	-	-	2	1	-	-	-	1	2		4
12 Kuldiga	-	1	-	-	-	-	1	1	-	-	-	-	1		2
13 Liepaja							0	7	-	1	-	2	10		10
15 Ludza	-	1	-	-	-	-	1	1	-	-	-	1	2		3
16 Madona	-	1	-	-	-	-	1	7	-	-	-	4	11		12
17 Ogre							0	3	-	-	-	-	3		3
18 Preili	2	-	-	-	-	-	2	3	-	-	-	1	4		6
19 Rezekne	1	-	-	-	-	-	1	2	-	1	-	2	5		6
20 Riga							0	3	-	-	-	2	5		5
21 Saldus	1	-	-	-	-	-	1	1	-	1	-	-	2		3
22 Talsi	-	2	-	-	-	-	2	1	-	-	-	-	1		3
23 Tukums	1	1	-	-	-	-	2	2	-	-	-	1	3		5
24 Valka							0	-	-	-	-	1	1		1
25 Valmiera							0	4	-	-	-	2	6		6
26 Ventspils	-	1	-	-	-	-	1	1	-	-	-	-	1		2
TOTAL	13	10	0	0	0	0	23	69	1	5	0	35	110	0	133
PER CENT	9.8	7.5	0.0	0.0	0.0	0.0	17.3	51.9	0.8	3.8	0.0	26.3	82.7	0.0	100.0

Table 5.3.5

RABIES CASES 1. 1.02 - 31. 3.02

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															
05 East Bohemia							0	1	-	-	-	-	1		1
FRY FED.REP.OF YUGOSLAVIA															
01 Beograd							0	3	-	-	-	-	3		3
03 Novi Sad							0	9	-	-	-	-	9		9
04 Zrenjanin							0	2	-	-	-	-	2		2
05 Subotica							0	1	-	-	-	-	1		1
06 Sombor							0	2	-	-	-	-	2		2
07 Sabac	1	-	-	-	-	-	1	2	-	-	-	-	2		3
08 Pozarevac	2	-	-	-	-	-	2	6	-	-	-	-	6		8
09 Jagodina	-	1	-	-	-	-	1	2	-	-	-	-	2		3
10 Zajecar							0	1	-	-	-	-	1		1
11 Kraljevo	2	1	1	-	-	-	4	12	-	-	-	-	12		16
12 Nis							0	5	-	-	-	-	5		5
13 Podgorica							0	6	-	-	-	1	7		7
TOTAL	5	2	1	0	0	0	8	51	0	0	0	1	52	0	60
PER CENT	8.3	3.3	1.7	0.0	0.0	0.0	13.3	85.0	0.0	0.0	0.0	1.7	86.7	0.0	100.0
TUR TURKEY															
01 ADANA	1	-	-	-	-	-	1						0		1
09 AYDIN	3	-	22	-	2	-	27	5	-	-	-	-	5		32
10 BALIKESIR	2	-	-	-	-	-	2						0		2
21 DIYARBAKIR	-	-	2	-	1	-	3						0		3
23 ELAZIG	3	-	-	-	-	-	3						0		3
24 ERZINCAN	2	-	-	-	-	-	2						0		2
25 ERZURUM	1	-	-	-	-	-	1	-	-	-	-	1	1		2
29 GUEMUESHANE	2	-	-	-	-	-	2						0		2
34 ISTANBUL	3	-	-	-	-	-	3						0		3
35 IZMIR	2	-	6	-	2	-	10	3	-	-	-	-	3		13
45 MANISA	1	-	-	-	-	-	1						0		1
63 SANLIURFA	1	-	-	-	-	-	1						0		1
69 BAYBURT	1	-	-	-	-	-	1						0		1
TOTAL	22	0	30	0	5	0	57	8	0	0	0	1	9	0	66
PER CENT	33.3	0.0	45.5	0.0	7.6	0.0	86.4	12.1	0.0	0.0	0.0	1.5	13.6	0.0	100.0

Table 5.3.6

RABIES CASES 1. 1.02 - 31. 3.02

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															
01 Harjumaa	-	1	-	-	-	-	1	8	-	-	-	3	11		12
03 Ida-Virumaa	1	-	-	-	-	-	1						0		1
04 Jogevamaa							0	-	-	-	-	7	7		7
05 Jaervamaa	-	1	1	-	-	-	2	1	-	-	-	4	5		7
07 Laeaene-Virumaa							0	-	-	-	-	2	2		2
08 Polvamaa							0	1	-	-	-	4	5		5
09 Paernumaa							0	1	-	-	-	1	2		2
10 Raplamaa							0	1	-	-	-	1	2		2
12 Tartumaa							0	10	-	-	-	10	20		20
13 Valgamaa							0	1	-	-	-	1	2		2
14 Viljandimaa	-	1	-	-	-	-	1	2	-	-	-	3	5		6
15 Vorumaa	1	1	-	-	-	-	2	-	-	-	-	3	3		5
TOTAL	2	4	1	0	0	0	7	25	0	0	0	39	64	0	71
PER CENT	2.8	5.6	1.4	0.0	0.0	0.0	9.9	35.2	0.0	0.0	0.0	54.9	90.1	0.0	100.0
POL POLAND															
02 Dolnoslaskie	-	1	-	-	-	-	1	5	-	-	-	3	8		9
04 Kujawsko-Pomorskie	-	1	-	-	-	-	1	7	-	-	1	1	9		10
06 Lubelskie	2	5	-	-	-	-	7	135	-	5	-	5	145		152
08 Lubuskie	-	1	-	-	-	-	1						0		1
10 Lodzkie							0	3	-	-	-	-	3		3
12 Malopolskie	-	2	-	-	-	-	2	20	-	2	-	-	22		24
14 Mazowieckie	1	-	-	-	-	-	1	15	-	-	-	-	15		16
16 Opolskie							0	2	-	-	-	-	2		2
18 Podkarpackie	6	6	-	-	-	-	12	60	-	2	-	-	62		74
20 Podlaskie	-	-	4	-	-	-	4	30	-	-	-	11	41		45
24 Slaskie	2	-	-	-	-	-	2	5	-	-	-	-	5		7
26 Swietokrzyskie							0	14	-	-	-	-	14		14
28 Warminsko-Mazurskie	-	-	4	-	-	-	4	5	-	-	-	8	13		17
30 Wielkopolskie	5	3	-	-	-	-	8	75	-	-	1	12	88		96
TOTAL	16	19	8	0	0	0	43	376	0	9	2	40	427	0	470
PER CENT	3.4	4.0	1.7	0.0	0.0	0.0	9.1	80.0	0.0	1.9	0.4	8.5	90.9	0.0	100.0

Table 5.3.7

LTU L I T H U A N I A — R A B I E S C A S E S — 1. 1.02 - 31. 3.02

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		
33	Alytaus	-	1	-	-	-	-	1	1	-	-	1	2	4		5
34	Anyksciu							0	1	-	-	-	3	4		4
36	Birzu	1	-	-	-	-	-	1						0		1
38	Varenos	1	-	-	-	-	-	1	2	-	-	-	-	2		3
41	Vilniaus	2	1	-	-	-	-	3	6	-	-	-	1	7		10
43	Zarasu							0	1	-	-	-	1	2		2
45	Ignalinos	1	1	3	-	-	-	5	4	-	1	-	20	25		30
47	Joniskio							0	1	-	-	-	-	1		1
49	Kaisiadoriu							0	1	-	-	-	-	1		1
51	Marijampoles							0	1	-	-	-	2	3		3
53	Kedainiai							0	-	-	-	-	1	1		1
54	Kelmes	-	-	1	-	-	-	1	1	-	-	-	2	3		4
55	Klaipedos	2	1	-	-	-	-	3	3	-	-	-	7	10		13
57	Kupiskio							0	1	-	2	-	4	7		7
59	Lazdiju	-	1	-	-	-	-	1	8	-	1	-	7	16		17
65	Pakruojo	-	1	-	-	-	-	1	5	-	1	-	2	8		9
66	Panevezio	1	-	1	-	1	-	3	4	-	2	-	5	11		14
68	Plunges							0	-	-	-	1	-	1		1
71	Radviliskio	-	2	1	-	-	-	3	3	-	-	-	-	3		6
72	Raseiniai							0	-	-	-	-	2	2		2
73	Rokiskio	-	-	1	-	-	-	1						0		1
75	Skuodo	1	-	-	-	-	-	1						0		1
77	Taurages	-	1	-	-	-	-	1	1	-	-	-	-	1		2
78	Telsiu	1	-	-	-	-	-	1						0		1
79	Traku							0	1	-	-	-	-	1		1
81	Ukmerges	-	-	-	-	1	-	1	2	-	-	-	2	4		5
82	Utenos							0	-	-	1	-	1	2		2
84	Sakiu	-	1	-	-	-	-	1	-	-	-	-	1	1		2
85	Salcininku	1	-	-	-	-	-	1						0		1
86	Svencioniu	-	1	-	-	-	-	1	1	-	1	-	4	6		7
87	Silales	-	-	1	-	-	-	1						0		1
88	Silutes							0	1	-	-	-	5	6		6
89	Sirvintu							0	2	-	-	-	7	9		9
91	Siauliu	1	-	-	-	-	-	1	3	-	2	-	7	12		13
94	Jurbarko	1	-	-	-	-	-	1	-	-	-	-	1	1		2
TOTAL		13	11	8	0	2	0	34	54	0	11	2	87	154	0	188
PER CENT		6.9	5.9	4.3	0.0	1.1	0.0	18.1	28.7	0.0	5.9	1.1	46.3	81.9	0.0	100.0

Table 5.3.8

RUS RUSSIAN FEDERATION — RABIES CASES — 1. 1.02 - 31. 3.02

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		
08 Pskov Region	4	-	-	1	-	-	5	6	-	-	-	-	6		11
09 Bryansk Region	2	-	-	-	-	-	2	2	-	-	-	-	2		4
10 Vladimir Region	3	1	-	-	-	-	4	1	-	-	-	-	1		5
11 Ivanovo Region	4	-	-	-	-	-	4	16	-	-	-	-	16		20
12 Twer Region							0	3	-	-	-	1	4		4
13 Kaluga Region	1	1	-	-	-	-	2	2	-	-	-	-	2		4
15 Moscow Region	2	2	-	-	-	-	4	8	-	-	-	1	9		13
16 Oryol Region	1	1	3	-	-	-	5	6	-	-	-	-	6		11
17 Ruazan Region	1	-	-	-	-	-	1	1	-	-	-	-	1		2
18 Smolensk Region	5	-	-	-	-	-	5	8	-	-	-	-	8		13
19 Tula Region	6	-	-	-	-	-	6	9	-	-	-	-	9		15
21 Nizhniy Novgorod Reg.	1	2	-	-	-	-	3	5	-	-	-	-	5		8
25 Rep. of Chuvashiya							0	3	-	-	-	-	3		3
26 Belgorod Region	10	8	3	-	1	1	23	11	-	-	-	-	11		34
27 Voronezh Region	22	16	6	-	1	-	45	3	-	1	-	-	4		49
28 Kursk Region	8	4	9	-	-	-	21	14	-	2	-	1	17		38
29 Lipetsk Region	1	2	1	9	2	-	15	7	-	-	-	-	7		22
30 Tambov Region	2	-	-	-	-	-	2	1	-	-	-	-	1		3
31 Astrakhan Region	13	5	17	-	52	2	89	5	-	-	-	1	6		95
32 Volgograd Region	15	8	25	-	1	-	49	10	-	-	-	-	10		59
33 Samara Region	6	-	2	-	-	-	8	11	-	-	-	-	11		19
34 Penza Region	3	-	-	-	-	-	3						0		3
35 Saratov Region	2	3	1	-	-	-	6	5	-	-	-	-	5		11
37 Rep. of Kalmykiya	4	1	7	-	1	-	13						0		13
38 Rep. of Tatarstan	2	-	3	-	-	-	5	9	-	-	-	-	9		14
39 Krasnodar Territory	4	1	2	-	1	-	8	6	-	-	-	-	6		14
40 Stavropol Territory	11	11	23	-	3	-	48	7	-	-	-	-	7		55
41 Rostov Region	6	3	4	-	-	-	13	6	-	-	-	1	7		20
42 Orenburg Region	26	-	23	4	-	-	53	16	-	-	-	3	19		72
44 Rep. of Bashkortostan	8	3	31	2	4	-	48	57	-	-	-	1	58		106
46 Kaliningrad Region	-	-	1	-	-	-	1	1	-	-	-	-	1		2
TOTAL	173	72	161	16	66	3	491	239	0	3	0	9	251	0	742
PER CENT	23.3	9.7	21.7	2.2	8.9	0.4	66.2	32.2	0.0	0.4	0.0	1.2	33.8	0.0	100.0

Table 5.3.9

RABIES CASES 1. 1.02 - 31. 3.02

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		
SVK SLOVAK REPUBLIC															
1 Bratislavsky kraj							0	1	-	-	-	-	1		1
2 Trnavsky kraj	1	-	-	-	-	-	1	8	-	-	-	-	8		9
3 Trenciansky kraj							0	1	-	-	-	-	1		1
4 Nitriansky kraj							0	7	-	-	-	-	7		7
6 Banskobystricky kraj	-	1	-	-	-	-	1	11	-	-	-	1	12		13
7 Presovsky kraj	-	1	-	-	-	-	1						0		1
8 Kosicky kraj	2	-	-	-	-	1	3	1	-	-	-	-	1		4
TOTAL	3	2	0	0	0	1	6	29	0	0	0	1	30	0	36
PER CENT	8.3	5.6	0.0	0.0	0.0	2.8	16.7	80.6	0.0	0.0	0.0	2.8	83.3	0.0	100.0
UKR UKRAINE															
01 Krym	-	1	-	-	-	-	1	5	-	-	-	-	5		6
02 Vinnytsia Region	5	3	3	-	-	-	11	2	-	1	-	-	3		14
03 Volyn Region	-	1	4	-	-	-	5	2	-	-	-	-	2		7
04 Dnipropetrovsk Region	4	5	-	-	1	-	10	5	-	-	-	-	5		15
05 Donetsk Region	2	-	-	-	-	-	2	5	-	-	-	-	5		7
06 Zhytomyr Region	-	3	-	-	-	-	3	10	-	-	-	-	10		13
07 Zakarpattia Region	-	-	2	-	-	-	2	1	-	-	-	-	1		3
08 Zaporizhzhia Region	2	4	-	-	-	-	6	3	-	-	-	-	3		9
09 Ivano-Frankivsk Regio	1	-	1	-	-	-	2	1	1	-	-	-	2		4
10 Kiev Region	2	2	-	-	-	-	4	2	-	-	-	-	2		6
11 Kirovohrad Region	3	4	2	-	-	-	9	5	-	-	-	-	5		14
12 Luhansk Region	9	6	5	-	1	-	21	8	-	-	-	-	8		29
13 Lviv Region							0	2	-	-	-	-	2		2
15 Odesa Region	-	2	2	-	-	-	4	7	-	-	-	-	7		11
16 Poltava Region	10	9	9	-	-	-	28	5	-	-	-	-	5		33
17 Rivne Region	1	1	-	-	-	-	2	5	-	-	-	-	5		7
18 Sumy Region	9	11	3	-	-	-	23	13	-	-	-	1	14		37
19 Ternopil Region	-	2	-	-	-	-	2	4	-	-	-	-	4		6
20 Kharkiv Region	9	6	1	-	-	-	16	14	-	-	-	-	14		30
21 Kherson Region	2	1	8	-	-	-	11	2	-	-	-	-	2		13
22 Khmelnytsky Region	3	2	2	-	-	-	7	5	-	-	-	-	5		12
23 Cherkasy Region	5	-	4	-	1	1	11	4	-	1	-	-	5		16
24 Chernivtsy Region	-	1	-	-	-	-	1						0		1
25 Chernihiv Region	5	7	2	-	-	-	14	29	-	1	-	1	31		45
TOTAL	72	71	48	0	3	1	195	139	1	3	0	2	145	0	340
PER CENT	21.2	20.9	14.1	0.0	0.9	0.3	57.4	40.9	0.3	0.9	0.0	0.6	42.6	0.0	100.0

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RABIES CASES EUROPE
1 st QUARTER 2002
2549 CASES REPORTED

2 BAT RABIES CASES INCLUDED

(see also 1. INTRODUCTION)

ICE (rabies free)

NOR (rabies free)

SWE (rabies free)

FIN (rabies free)

RUS (742)

EST (71)

LVA (132)

LTU (188)

KAZ

Baltic Sea

DEN

IRE (rabies free)

UNK (rabies free)

BYE (138)

POL (469) (1)

NET (0)

DEU (15) (1)

BEL (rabies free)

LUX (rabies free)

(imported dog case)

UKR (340)

Sea of Azov

Caspian Sea

CZH (1)

SVK (36)

MLD (10)

FRA (0)

AUT (20)

HUN (40)

ROM (51)

GEO

AZE

ARM

Black Sea

SWI (rabies free)

SVN (3)

CRO (34)

BIH (23)

FRY (60)

BUL (5)

ITA (rabies free)

TUR (66)

IRN

IRQ

POR (rabies free)

SPA

NORTH AFRICA (2)

MAINLAND (0)

TYM (no data)

(0)

ALB

GRE (rabies free)

SYR

150 km

Mediterranean Sea

CYP (rabies free)

LBN

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

WHO Coll. Centre
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