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

In SECTION 2 a **summary of the rabies situation of the third 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** a summary article on rabies epidemiology and control in the Ukraine is given. Under **4.2** details of a bat rabies case in the United Kingdom are described. **4.3** investigates a human rabies case in the United States of America connected to a bat infection in 2002.

The **rabies case data** are tabulated for the **third 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 addresses allow interested readers of this BULLETIN direct contact with the responsible officers (experts) of the countries referred to.

The **geographical distribution** of rabies cases in Europe of the **Third Quarter 2002** is shown on a map of Europe in the ANNEX.

2. SUMMARY OF RABIES IN EUROPE

During ***"This Quarter"***, 2154 rabies cases were reported in Europe. Of these, 1276 were in wild animals (59.2% of total) and 877 in domestic animals. There was 1 human case.

Of the 1276 cases in wild animals, 994 (46.1% of total) were red foxes, 2 other fox species, 1 jackal, 7 wolves, 171 raccoon dogs, 1 wild cat, 2 lynx, 23 badgers, 4 stone martens, 29 pine martens, 11 polecats, 1 ferret, 1 fish otter, 4 roe deer, 1 moose, 15 bats, 2 squirrels, 1 muskrat, 1 hare, 1 other wild animal, 4 unspecified animals.

Of the 877 domestic animals, 183 were dogs, 241 cats, 11 horses, 4 pigs, 418 bovines, 7 sheep and 11 goats, 1 stray dog, 1 other domesticated animal.

The 1 **human case** was reported in the Russian Federation.

The third quarter of the year is usually the peak of the **bat rabies cases** (EBL). The 15 cases occurred during ***"This Quarter"*** in Germany (4), France (2), the Netherlands (3), Poland (3), Switzerland (1), Ukraine (1) and United Kingdom (1). The bats could be identified in France as *Eptesicus serotinus*, in Switzerland and United Kingdom as *Myotis daubentoni*.

Because of the different epidemiological features from **fox-mediated rabies**, bat cases are marked in a different colour in the map of the ANNEX.

The **dog-mediated rabies** in Europe is found in an obvious pattern in Turkey. Of 61 cases during ***"This Quarter"***, 54 occurred in domestic animals (22 dogs, 31 bovines, 1 sheep) and 7 wild animals (4 foxes, 2 stone martens, 1 jackal). However, certain areas in the south of the European part of the Russian Federation indicate dog-mediated rabies or the mixed type of dog- and fox-mediated rabies (see RBE 1/2000, p. 10).

The majority of rabies cases in Europe derives as usual from **fox-mediated rabies**. It determines the changes in cases, which are caused by the seasons of the year in the fox

population, and now more and more as well by the impact of the oral fox vaccination efforts. During ***"This Quarter"***, there has been an increase compared to the previous quarter by 310 cases. This increase is expected and is noticed in ***"This Quarter"*** in 13 countries observing fox-mediated rabies, except for Poland, which practices an extensive oral vaccination programme and noticed 49 cases less than the previous quarter.

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

There were **no rabies cases reported** from Albania, Austria, the Czech Republic, Denmark, the mainland islands of Spain. However, the last indigenously acquired case (terrestrial or bat) was less than two years ago (WHO definition).

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3. RABIES IN INDIVIDUAL COUNTRIES

3.1 Albania ALB

by Zaçe Malaj

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

Surveillance

8 foxes, 2 dogs and 2 stone martens were examined for rabies with negative results.

3.2 Austria AUT

by Walter Schuller and Gabriele Romanek

Out of 3577 animals examined for rabies during ***"This Quarter"***, there was no case diagnosed positive.

3.3 Belgium BEL

by L. Lengele and Pierre Dechamps

The country remained **rabies-free**.

Surveillance

Up to the third quarter the following 692 animals were investigated with negative results: 245 foxes, 330 bovines, 9 dogs, 13 cats, 65 small ruminants, 2 horses, 16 badgers, 1 mouflon, 1 rabbit, 2 stone martens, 8 cervids.

3.4 Bosnia and Herzegovina BIH

by Ramiz Velic and Drago Nedic

During ***"This Quarter"***, 11 cases were reported in the Federation of Bosnia and Herzegovina (7 foxes, 2 dogs, 2 goats) and during the months of August and September 2 cases (1 fox, 1 bovine) in the Republic of Srpska.

3.5 Bulgaria BUL

by L. Lavchev

During ***"This Quarter"***, 4 rabies cases were reported in 4 different provinces. The animal species effected was not supplied.

3.6 Belarus BYE

by A.M. Axenov

A total of 228 rabies cases was reported in all 6 administrative regions of the country, 82 cases more than in the previous quarter and 99 cases more than in the third quarter 2001.

The following animals were diagnosed rabid: 115 foxes, 1 wolf, 17 raccoon dogs, 3 badgers, 3 pine martens, 1 roe deer, 1 moose, 14 dogs, 35 cats, 4 horses, 33 bovines, 1 sheep.

3.7 Croatia CRO

by Mate Brstilo and Josip Marković

Of 828 animals investigated for rabies (134 domestic and 694 wild animals), a total of 103 were diagnosed

rabid. The cases occurred in 16 counties, 44 municipalities respectively. There was an increase of 32 cases (45.1%) compared with the same period 2001, and of 33 cases compared to the previous quarter.

Of the 103 cases, rabies was confirmed in 100 wild animals (99 foxes, 1 hare) and 3 cats.

3.8 Cyprus CYP

by P. Economides

The country remained **rabies-free**.

3.9 Czech Republic CZH

by Oldrich Matouch

During ***"This Quarter"***, no rabies case was diagnosed in the Czech Republic.

A total of 1569 animals (including 1102 foxes) were examined for rabies with negative results.

3.10 Denmark DEN

by Preben Willeberg and Tina Mørk

The country remained free of the classical rabies type.

There was no bat rabies case.

Surveillance

A total of 27 animals were examined for rabies with negative results: 1 fox, 1 polecat, 1 mole, 3 cats, 1 dog, and 20 bats.

3.11 Germany, Federal Republic DEU

by Winfried W. Müller and Matthias Kramer

During ***"This Quarter"***, there were 4 bat rabies cases reported in 3 Federal States of Germany: Schleswig-Holstein, Niedersachsen, Brandenburg.

3.12 Estonia EST

by Matti Nautras

A total of 103 rabies cases was reported during ***"This Quarter"***.

The cases occurred in 79 wild animals (45 foxes, 30 raccoon dogs, 2 badgers, 1 ferret, 1 lynx) and in 24 domestic animals (5 dogs, 8 cats, 11 bovines).

3.13 Finland FIN

by Nina Sarén

The country remained **rabies-free.**

Surveillance

The following animals were examined for rabies during ***"This Quarter"*** with negative results: 11 foxes, 48 raccoon dogs, 2 badgers, 2 dogs, 10 other wild carnivores, 3 bats.

3.14 France FRA

by Florence Cliquet

The country remained **rabies-free** in terrestrial animals.

There was 1 case of a dog imported from Morocco to the département Seine Saint Denis.

There were 2 cases of bat rabies in the départements Allier and Creuse.

3.15 Federal Republic of Yugoslavia FRY

by Vesna and Dušan Lalošević

During ***"This Quarter"***, 47 animal rabies cases were registered in 11 districts of the country. There were 36 cases in foxes, 2 in dogs, 7 in cats, 1 each in a cow and a pine marten.

3.16 Greece GRE

The country remained **rabies-free.**

3.17 Hungary HUN

by Tibor Balint and Zsolt Földi

During ***"This Quarter"***, there were 36 rabies cases in animals. Eight cases of these were located west of the river Danube. Of the total, 30 were cases in wild animals (28 foxes, 1 stone marten, 1 roe deer) and 6 in domestic animals (3 cats, 2 dogs, 1 bovine).

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

1030 wild animals (921 foxes included) and 74 domestic animals from Trentino Alto Adige, Veneto and Friuli Venezia Giulia Regions (northeastern Italy) were tested for rabies with negative results.

3.21 Lithuania LTU

by Kasimieras Lukauskas and A. Dranseika

During ***"This Quarter"***, there were 235 cases of rabies. 55 cases (23.4%) were in domestic animals (33 bovines, 7 dogs, 13 cats, 1 horse and 1 goat) and 180 cases (76.6%) in wild animals (86 foxes, 68 raccoon dogs, 16 pine martens, 6 polecats and 4 badger).

During ***"This Quarter"***, 39 districts were affected. The most affected were the districts of Lazdijai, Radviliškis, Panevėžys, Šilutė and Tauragė.

During ***"This Quarter"***, 35,000 dogs, 4500 cats and 2150 bovines were vaccinated against rabies.

There was no human rabies case registered in the country.

3.22 Luxembourg LUX

by Arthur Besch

The country remained **rabies-free**.

Surveillance

A total of 20 foxes and 2 roe deer were examined for rabies with negative results.

Control

Oral vaccination of foxes against rabies was applied in September 2002 covering the whole country.

3.23 Latvia LVA

by V. Veldre and E. Jēgers

109 rabies cases were registered during ***"This Quarter"*** in 24 districts. 87 cases were diagnosed in wild animals (79.8% of total). 57 of these were foxes, 5 badgers, 21 raccoon dogs, 2 pine martens, 1 badger and 1 wolf. Of 22 rabies cases in domestic animals 8 were cats, 7 bovines, 5 dogs, and 2 horses. The most affected districts were Preili with 15 cases, Valmiera with 13 cases and Alūksne with 10 cases.

3.24 Moldova MLD

by E. Renita and B. Demchenco

Out of 24 animals examined for rabies during ***"This Quarter"***, 8 were diagnosed rabid - 5 foxes, 1 bovine, 1 goat, 1 cat.

3.25 Netherlands NET

by Stasja Valkenburgh

During ***"This Quarter"***, 59 animals were investigated for rabies (54 bats, 2 foxes, 2 cats, 1 bat (*Rousettus aegyptiacus*). Of these 3 bats were diagnosed rabid - in the provinces Noord Holland (1) and Drenthe (2).

3.26 Norway NOR

by Eivind Liven

The country remained **rabies-free.**

3.27 Poland POL

by Andrzej Komorowski

A total of 199 rabies cases was registered in Poland during ***"This Quarter"***, 49 cases less than in the previous quarter and 323 cases less than in the third quarter 2001.

There were 155 cases in wild animals (130 foxes, 16 raccoon dogs, 2 badgers, 2 pine martens, 2 roe deer, 3 bats) and 44 in domestic animals (4 dogs, 16 cats, 24 bovines).

3.28 Portugal POR

The country remained **rabies-free.**

3.29 Romania ROM

by Ion Sorin Mitrea

During ***"This Quarter"***, 24 rabies cases were reported in Romania, 5 cases more than in the previous quarter, and 22 cases less than in the third quarter 2001.

There were 15 cases in foxes, 1 in an other wild animal, 3 in dogs, 2 in cats, 2 in bovines, and 1 in an other domestic animal.

3.30 Russia RUS European part only

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

During ***"This Quarter"***, 635 rabies cases in animals were reported.

Of the total number of cases 356 were in domestic animals - 72 dogs, 70 cats, 202 bovines, 3 horses, 5 sheep, 4 pigs.

Of 279 wild animals rabies was diagnosed in 249 foxes, 15 raccoon dogs, 4 wolves, 2 polecats, 4 badgers, 2 corsac foxes, 1 stone marten, 1 squirrel, 1 muskrat.

Most affected were the Republic of Bashkortostan with 119 cases, the Kurskaja Region with 75 cases, the Oryol Region with 52 cases, the Tula Region with 49 cases, the Voronezk Region with 42 cases.

There was one human case reported - in the Moscow Region.

3.31 Spain SPA

by Carlos Abellan Garcia

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

There was 1 dog case in Melilla, the Spanish territory of North Africa.

There was no bat rabies case.

3.32 Slovak Republic SVK

by Dušan Magic

A total of 21 rabies cases in animals was reported in the Slovak Republic during ***"This Quarter"***. Of these, 16 (76.2% of total) were in wild animals (14 foxes, 1 pine marten, 1 wild cat) and 5 in domestic animals (1 dog, 3 cats, 1 goat).

3.33 Slovenia SVN

by Zoran Kovač

There was only 1 rabid fox registered during ***"This Quarter"***. There were still 18 cases reported during the third quarter 2001.

3.34 Sweden SWE

The country remained **rabies-free.**

3.35 Switzerland SWI

by Reto Zanoni

The country remained **rabies-free** in terrestrial animals.

There was one case of bat rabies in a *Myotis daubentoni*, which was located in the community of Genève. This is the third case of bat rabies in Switzerland in *Myotis daubentoni*. Molecular typing of the isolate is underway.

Surveillance

During ***"This Quarter"***, 40 animals were examined for rabies with negative results: 8 foxes, 3 stone martens, 1 roe deer, 16 bats, 5 dogs, 4 cats, 2 bovines and 1 horse. The bats were specified as *Eptesicus serotinus* (2), *Myotis daubent*oni (2), *Pipistrellus kuhli* (1), *Pipistrellus nathusii* (3), *Pipistrellus pipistrellus* (3), *Pipistrellus sp.* (2), *Plecotus sp.* (1) and *Vespertilio murinus* (1).

No person was exposed to the rabid bat.

3.36 Turkey TUR

by Hüseyin Sungur

During ***"This Quarter"***, 61 rabies cases in animals were reported in Turkey. The disease

occurred in 22 dogs, 31 bovines, 1 sheep, 4 foxes, 2 stone martens, 1 jackal.

The provinces (Il) Aydin and Izmir recorded 24 and 11 cases respectively, due to more recent outbreaks. All other infected provinces recorded between 1 and 4 cases.

3.37 Macedonia TYM

No data.

3.38 Ukraine UKR

by P. Verbitskiy and Liudmyla Grishok

During ***"This Quarter"***, 313 rabies cases in animals were reported in the Ukraine. Of these, 193 were in domestic animals (43 dogs, 72 cats, 71 bovines, 1 horse, 6 goats) and 120 in wild animals (102 foxes, 3 badgers, 1 wolf, 4 raccoon dogs, 4 pine martens, 3 polecats, 1 fish otter, 1 bat, 1 squirrel).

Of 25 regions in the country, only 2 regions reported no rabies cases, 23 regions reported between 1 and 81 (Poltava Region) cases.

3.39 United Kingdom UNK

by Fred Landeg and Anthony R. Fooks

The country remained **rabies-free** in terrestrial animals.

There was 1 bat diagnosed rabid, and the virus characterized as EBL2, at Carnforth, Lancashire (see details of the case under 4.1 of this BULLETIN).

4. MISCELLANEOUS ARTICLES

4.1 Epidemiological Features and Rabies Control within the Territory of the Ukraine

by L.P.Grishok, O.V.Padalka,
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The introduction of wide-scale immunization of dogs and realization of strict veterinary-sanitary measures in the Ukraine since 1956 made it possible to the middle of the sixties to eradicate urban rabies as an epizootic. The period since 1960 to 1964 can be regarded as the time of the least spread of rabies infection in the Ukraine.

Since 1966 the development of rabies epizootic of natural type is observed. Foxes are the main source and spreader of the disease. At present the epizootic situation with rabies in the Ukraine and in neighbouring countries of Eastern Europe remains tense. Here a highly infected rabies area covering the territory from Estonia to Yugoslavia and Bulgaria can be found. The territory of Poland became the epicentre of that area. The Ukraine takes up a significant position in this area. Here the fox rabies epizootic has been going on more than 30 years and attempts to stop it have a temporary success.

It is necessary to note that in the 70-80-ies a 3-4 year cyclicity of rises and falls in the epizootic was observed. During the last decade the yearly increase of the number of affected areas and of the disease incidence occurs. In 2001 1611 rabies cases were registered (the level of 1979). In 2002, the rate of such growth decreased. During the first half of 2002, 577 rabies cases were registered.

The nature of rabies nosoarea on the territory of the Ukraine is diffuse. Centres of rabies are registered in all the regions and natural-geographical zones. The zone of intensive spread of rabies is the territory of the north-eastern regions - Chernigiv, Poltava, Sumy, Lugansk, Kharkiv oblasts. In 2001, 62.1% rabies cases in animals were registered in those regions. In 2000-2001 rabies infection became more active in some western and southern regions - Lviv, Rivne, Ternopil, Odessa oblasts. Foxes remain the main source and spreader of rabies. In 2001 their share in the total number of rabies cases increased and amounted to 31.1% (36.4% in 2000). Epizootiological importance of wolves and raccoon dogs increased. Wild animals (pine marten, stone marten, badgers, etc.) are also of epizootiological importance. Among these animal species 27 rabies cases (1.7%) were determined using laboratory methods.

Dogs and especially cats are actively included into epizootic process. A typical epizootiological feature is the increase of towns and large inhabited localities in the structure of registered infected areas, the evolution of rabies epizootic process towards activization and integration of the chains of natural and urban rabies. One of the reasons of this consists in reducing the control over observing the rules and regulations of dogs and cats keeping, irresponsibility of the owners of domestic animals, especially in suburban areas, in the country, on garden and vegetable plots, in the outskirts of the cities.

Another reason is inadequate regulation (by means of hunting) of fox population size. In 2001 (compared with 1994) fox population size increased by 1.4, despite the growth by more than 4 times of the number of foxes which were shot (TABLE 4.1.1).

TABLE 4.1.1
Population Size and Fox Hunting Trophy in Ukraine (in years)

Years	1994	1995	1996	1997	1998	1999	2000	2001
Total number (head)	81029	87086	94116	105447	119203	127000	114674	105765
Got by shooting (specimens)	16076	20859	29809	34063	46410	57924	65130	66697

The process of synanthropization of foxes, the approach of their inhabitations to populated areas and contacts of foxes with stray dogs, cats are of great importance. Under such conditions the approach of rabies virus to humans, the development of the threatening epidemic situation on this infection take place.

Increasing rabies incidence shows this. In 1994-2000, 6 people died of rabies. In 2001 alone 5 people died of this disease. Cats were the source of infection in 4 cases and in one case, a fox was. Yearly 100-108 thousand people consult doctors in connection with animals bites. Yearly almost 30 thousand people which need medical aid should be vaccinated against rabies.

Considering the tense situation on rabies "Combined Programme of the Main Measures of Rabies Prophylaxis and Control in 2000-2010 in Ukraine" has been developed and approved by the general order of Ministry of Health and State Department for Veterinary Medecine of Minagropolicy of the Ukraine. This programme envisages:

- ensuring a combined interdepartmental interaction in the matter of organization and realization of rabies prophylaxis measures;
- the improvement of the normative and legal basis;
- optimization of the epizootical and epidemic surveillance of rabies;
- ensuring vaccination of all the dogs and in steadily infected areas - of all the cats;
- the improvement of measures for rabies prophylaxis and control in nature, ensuring combined regulation of population size of epizootiologically important animal species and efficacious oral immunization of their population;
- solving the problem of domestic and other animals keeping in towns and inhabited localities of the country;
- ensuring the veterinary-sanitary educational work among the people on the problem of rabies prophylaxis through the means of mass information.

However, the realization of the above-mentioned Programme requires financial support which is limited, unfortunately, and does not meet the requirements. For this reason oral immunization of foxes was carried out on the limited territories, in the areas with a tense epizootic situation. In the spring of 2001 80 thousand doses of "RABIFOX" vaccine were distributed in 6 regions: in Chernigiv, Sumy, Lugansk oblasts - 20 thousand in each, in Cherkassy - 10 thousand, Kiev, Poltava oblasts - 5000 doses in each.

The main method of fox rabies control in the Ukraine is the regulation of fox population size through hunting, monitoring of wild animals rabies, control of murine rodents as the main feed of foxes. In every hunting area a survey of hunting grounds is carried out systematically for the presence of animals carcasses and animals with suspicious behaviour. Before the beginning of hunting season compulsory virological investigation of the material from the shot foxes is performed.

The protection of domestic animals against fox rabies is of great importance and it is carried out by means of specific prophylaxis. All the dogs and in areas steadily infected with rabies cats, too are subject to compulsory vaccination against rabies. In 2001 in Ukraine 2 503 563 dogs and 281 331 cats were vaccinated.

For successful control of natural rabies it is necessary to determine primary reservoirs of rabies infection, and in the first place the role of bats and murine rodents in this matter. This is especially urgent for Ukraine where in the area with a tense epizootic situation (Lugansk and Kharkiv oblasts) in 2000 and 2001, 3 rabies cases in bats were confirmed in laboratory tests. In this area (in 1977,1985 and 2002) 3 cases of hydrophobia after an unprovoked attack of bats were registered. The identification of virus isolates and determination of antigenic correspondence between them and vaccine strains is an urgent task.

4.2 Identification of a European Bat Lyssavirus type 2 in a Daubenton's bat (*Myotis daubentoni*) in the United Kingdom

by Anthony R. Fooks*, David Selden, Graham Parsons and Nicholas Johnson
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Surveillance of British bats for lyssaviruses has taken place since 1985. In that time only one case had been reported prior to 2002 in a Daubentons bat (*Myotis daubentoni*) found in Newhaven during 1996. On July 7th 2002, a female Daubenton's bat was brought into a residence adjoining the Lancashire canal by a cat. Despite a few puncture marks on the bats wing it did not appear to have sustained any serious injuries and was transferred to a bat sanctuary in the town of Carnforth, Lancashire. It began to show signs of aggression on September 11th and bit the conservationist who was caring for it. Over the next week it began to lose weight and developed spasms. It was killed humanely on the 20th of that month.

The bat was subsequently sent to the Veterinary Laboratories Agency and tested for the presence of a lyssavirus infection. A brain sample from this bat tested positive using the fluorescent antibody test on the 27th September. As a result the conservationist was given rabies post-exposure prophylaxis immediately. Further tests were performed, including a tissue culture inoculation test, which stained positive after 24 hours incubation. The presence of a lyssavirus infection was confirmed following the detection of a discrete 700 base-pair product using lyssavirus specific primers in a polymerase chain reaction (PCR). A 500 base-pair fragment was sequenced from the PCR product which when aligned with a panel of lyssavirus sequences demonstrated that the virus was most closely related to the European Bat Lyssavirus 2 (EBL2) group. Additionally, a mouse inoculation test was performed by inoculating mice intracerebrally with homogenised brain material. By 20-days post-infection, clinical signs of a rabies-like illness had developed in five of six animals inoculated and the mice were killed humanely. Brain smears from these infected mice were positive by the fluorescent antibody test and viable virus was isolated. This case represents only the second confirmed case of an EBL virus isolated from a bat in the UK.

4.3 Human Rabies Case in Iowa, USA, 2002

On September 28, 2002, a man aged 20 years residing in Linn County, Iowa, died from rabies encephalitis caused by infection with a variant of rabies virus associated with silver-haired (*Lasionycteris noctivagans*) and eastern pipistrelle (*Pipistrellus subflavus*) bats. This is the first case of human rabies in Iowa since 1951. This report summarizes the investigation of the case by the Linn County and Iowa public health departments. Bats found in living quarters should be submitted to local public health laboratories for rabies testing.

On September 16, the man sought care at the emergency department of a Cedar Rapids hospital complaining of nausea and vomiting, generalized abdominal pain, shortness of breath, headache, and back stiffness. He reported drinking numerous beers and expressed a concern about alcohol poisoning. The patient was treated with an antiemetic and discharged with prescriptions for antianxiety and antinausea medications. He returned later the same day for reevaluation but left without being seen. He returned again the next day complaining of the same symptoms, at which time he was noted to be hostile, paranoid, and hallucinating. He was admitted to the hospital with a diagnosis of suspected drug reaction or withdrawal syndrome. Brain magnetic resonance imaging (MRI) and electro-encephalogram (EEG) performed during the first 24 hours of hospitalization were normal, and the patient received multiple doses of sedative-hypnotic drugs for treatment of agitation.

His condition deteriorated with development of fever of 101.5°F (38.6°C) and increasing tremors, followed by intractable seizure requiring intensive care. On September 19, he was placed on ventilator support. He received empiric therapy for encephalitis, including acyclovir and ceftriaxone, and multiple anticonvulsants. On September 23, the patient had evidence of profound neurologic impairment with fixed and unreactive pupils, and repeat neuroimaging showed early herniation. A surgial procedure to decrease intracranial pressure was performed, and a brain biopsy (occipital lobe) was taken. Contact and droplet precautions were initiated after the procedure. On September 28, ventilator support was withdrawn, and the patient died.

On September 25, clinical specimens, including occipital lobe biopsy tissue impression slides, cerebrospinal fluid, and saliva, were submitted for rabies virus evaluation to the University of Iowa Hygienic Laboratory (UHL). Direct fluorescent antibody (DFA) staining of the occipital lobe biopsy slides was inconclusive but suggestive of rabies infection. A subsequent nuchal biopsy, taken on September 27 and sent to CDC laboratories, was strongly positive (RT-PCR) for rabies virus RNA. The virus variant involved in this infection was determined by DNA sequence analysis to be most similar to variants found in silver-haired and eastern pipistrelle bats. The diagnosis was confirmed postmortem at UHL by DFA examination of specimens from the brain stem and cerebellum.

The source of the patient's infection remains unclear. No specific history of exposure to bats was reported. The patient had been bitten by a dog approximately 12 days before admission; the animal was determined to be free of rabies. No evidence of bat infestation in the patient's house was found, and family and friends did not recount any episodes of potential contact between the patient and bats.

The patient apparently was healthy before this incident. A substantial portion of the patient's social activity occurred during evenings, and preliminary investigation suggested that multiple persons could have been exposed to live virus from the patient through shared use of glasses, bottles, cigarettes, and other vehicles for saliva contamination of mucus membranes. The

patient was a musician and had travelled to recording studios in several cities in Iowa and Illinois during the prodrome of his illness. Because family members were not able to provide public health authorities with contact information for many of the patient's associates, a decision was made, with consent of family members, to release the patient's name to the media to facilitate contact tracing and screening for rabies post-exposure prophylaxis (PEP). County public health staff also attended funeral services to counsel associates of the patient who had not yet come forward. A total of 53 family members or associated of the patient received PEP. No persons with potential exposure outside of the Cedar Rapids area were identified.

Several hospital staff also reported potential exposure to the patient's bodily fluids before isolation precautions were initiated. Public health officials presented information to potentially exposed employees on September 30. Hospital staff were requested by hospital administrators to make their own risk assessment and decision about starting PEP based on the information provided. A total of 71 hospital staff, including five physicians, received PEP.

MMWR's Editorial Note:

Incidence of human rabies in the United States has declined sharply during the last several decades, from an average of 11 persons per year in the 1950s to fewer than three persons per year during the 1990s. This decline is associated largely with successful control of rabies in domestic dogs. Nonbite-associated (i.e., cryptic) cases of rabies --- those cases for which no evidence or history of animal bite is established --- now constitute the largest category of human rabies cases in the United States (78% of all cases occurring during the 1990s compared with 23% during the 1950s). A history of animal bite was reported in only seven of the last 35 documented human rabies cases (five dog bites acquired overseas and two bat bites acquired domestically). The high proportion of cases that are reported as cryptic probably is attributable to several factors, including the difficulties associated with obtaining detailed exposure histories from neurologically impaired patients and the possibility that bites from very small mammals, such as bats, might go unnoticed.

Molecular typing of viral RNA obtained from clinical specimens permits rapid identification of the virus variant involved in the infection, but virus typing in the absence of specific exposure history cannot identify the source of human rabies infections definitively. Variants specific to one vertebrate host can be found in animal species other than that of their natural reservoir; for example, bat-variant rabies viruses have been found in domestic cats. However, virus typing provides a valuable epidemiologic clue to the source of an infection and is important for targeting prevention efforts. In the case described in this report, the rabies virus type was determined to be most similar to that found naturally in silver-haired and eastern pipistrelle bats, which range widely throughout North America, including Linn County. Both are solitary, forest-dwelling animals not found commonly in human dwellings.

This is the third report of human rabies published during 2002. All were attributed to viruses identified as bat variants (two silver-haired/eastern pipistrelle variant and one Mexican free-tail variant); none of the three cases had a specific history of bat bite recorded. Of 35 human rabies deaths recorded since 1990 in the United States, 26 (74%) have been associated with bat-variant rabies viruses, but in only two cases was a bite history documented. Human rabies is preventable with properly performed and timely administration of rabies PEP. However, prevention efforts are complicated if the patient does not recognize that an exposure has occurred.

Although bats have an important role in local ecosystems, they can be a source of rabies infection in humans. Messages to the public should emphasize that bats can transmit rabies virus to humans. Bats should be

excluded from human living quarters and should never be handled with bare hands. When a bat is found in living quarters and the possibility exists that an unrecognized exposure has occurred, the animal should be submitted to a local public health laboratory for diagnostic testing. Testing of suspect animals ensures rapid PEP where indicated and minimizes unnecessary prophylaxis in persons not exposed to rabies virus.

(Taken from Morbidity and Mortality Weekly Report [MMWR], Vol. 52, pp. 47-48, 2003; Centers for Disease Control and Prevention, Atlanta, Georgia 30333, U.S.A.)

Table 5.1

EUR EUROPE **3/2002** RABIES CASES 1. 7.02 - 30. 9.02

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 *							0						0		0
BEL BELGIUM *							0						0		0
BIH BOSNA I HERCEGOWI 1)	2	-	1	-	2	-	5	8	-	-	-	-	8		13
BUL BULGARIA							0	-	-	-	-	4	4		4
BYE BELARUS	14	35	33	4	1	-	87	115	3	3	2	18	141		228
CRO CROATIA	-	3	-	-	-	-	3	99	-	-	-	1	100		103
CYP CYPRUS *							0						0		0
CZH CZECH REPUBLIC *							0						0		0
DEN DENMARK *							0						0		0
DEU FED.REP.OF GERMANY							0	-	-	-	-	4	4		4
EST ESTONIA	5	8	11	-	-	-	24	45	2	1	-	31	79		103
FIN FINLAND *							0						0		0
FRA FRANCE	1	-	-	-	-	-	1	-	-	-	-	2	2		3
FRY FED.REP.OF YUGOSLA	2	7	1	-	-	-	10	36	-	1	-	-	37		47
GRE GREECE *							0						0		0
HUN HUNGARY	2	3	1	-	-	-	6	28	-	1	1	-	30		36
ICE ICELAND *							0						0		0
IRE IRELAND *							0						0		0
ITA ITALY *							0						0		0
LTU LITHUANIA	6	13	33	1	1	1	55	86	4	22	-	68	180		235
LUX LUXEMBOURG *							0						0		0
LVA LATVIA	5	8	7	2	-	-	22	57	5	2	-	23	87		109
MLD MOLDOVA	-	1	1	-	1	-	3	5	-	-	-	-	5		8
NET NETHERLANDS							0	-	-	-	-	3	3		3
NOR NORWAY *							0						0		0
POL POLAND	4	16	24	-	-	-	44	130	2	2	2	19	155		199
POR PORTUGAL *							0						0		0
ROM ROMANIA	3	2	2	-	-	1	8	15	-	-	-	1	16		24
RUS RUSSIAN FEDERATION	72	70	202	3	5	4	356	249	4	3	-	23	279	1	636
SPA SPAIN 2)	1	-	-	-	-	-	1						0		1
SVK SLOVAK REPUBLIC	1	3	-	-	1	-	5	14	-	1	-	1	16		21
SVN SLOVENIA							0	1	-	-	-	-	1		1
SWE SWEDEN *							0						0		0
SWI SWITZERLAND + LIEC							0	-	-	-	-	1	1		1
TUR TURKEY	22	-	31	-	1	-	54	4	-	2	-	1	7		61
TYM MACEDONIA **							0						0		0
UKR UKRAINE	43	72	71	1	6	-	193	102	3	8	-	7	120		313
UNK UNITED KINGDOM							0	-	-	-	-	1	1		1
TOTAL	183	241	418	11	18	6	877	994	23	46	5	208	1276	1	2154
PER CENT	8.5	11.2	19.4	0.5	0.8	0.3	40.7	46.1	1.1	2.1	0.2	9.7	59.2	0.0	100.0

* no cases ** no data 1) not complete 2) in North Africa

Table 5.2

EUR EUROPE **1-3/2002** RABIES CASES 1. 1.02 - 30. 9.02

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	19	1	-	2	-	22		24
BEL BELGIUM *							0						0		0
BIH BOSNA I HERCEGOWI 1)	2	1	3	-	2	-	8	30	-	-	-	-	30		38
BUL BULGARIA							0	-	-	-	-	12	12		12
BYE BELARUS	50	55	46	5	2	-	158	300	6	4	3	41	354		512
CRO CROATIA	3	5	1	-	7	1	17	284	1	2	2	1	290		307
CYP CYPRUS *							0						0		0
CZH CZECH REPUBLIC							0	3	-	-	-	-	3		3
DEN DENMARK	-	-	-	-	1	-	1	-	-	-	-	1	1		2
DEU FED.REP.OF GERMAN 2)	1	1	-	-	-	-	2	9	-	3	5	7	24		26
EST ESTONIA	15	14	15	-	-	-	44	111	2	1	-	95	209		253
FIN FINLAND *							0						0		0
FRA FRANCE	1	-	-	-	-	-	1	-	-	-	-	2	2		3
FRY FED.REP.OF YUGOSLA	10	9	2	-	2	-	23	105	-	1	-	2	108		131
GRE GREECE *							0						0		0
HUN HUNGARY	3	11	6	1	1	-	22	76	1	1	4	1	83		105
ICE ICELAND *							0						0		0
IRE IRELAND *							0						0		0
ITA ITALY *							0						0		0
LTU LITHUANIA	32	37	54	2	3	1	129	198	5	47	2	205	457		586
LUX LUXEMBOURG *							0						0		0
LVA LATVIA	22	21	8	2	-	-	53	179	8	10	-	73	270		323
MLD MOLDOVA	1	3	2	-	2	-	8	13	-	-	-	1	14		22
NET NETHERLANDS							0	-	-	-	-	3	3		3
NOR NORWAY *							0						0		0
POL POLAND	24	52	33	-	-	-	109	695	6	22	5	80	808		917
POR PORTUGAL *							0						0		0
ROM ROMANIA	17	8	5	-	8	1	39	49	2	2	-	2	55		94
RUS RUSSIAN FEDERATION	363	205	551	32	135	7	1293	646	6	8	-	46	706	2	2001
SPA SPAIN 3)	2	-	-	-	-	2	4	-	-	-	-	1	1		5
SVK SLOVAK REPUBLIC	6	6	-	-	1	1	14	52	-	1	-	3	56		70
SVN SLOVENIA							0	6	-	-	-	-	6		6
SWE SWEDEN *							0						0		0
SWI SWITZERLAND + LIEC							0	-	-	-	-	1	1		1
TUR TURKEY	62	-	116	-	8	-	186	21	-	2	-	5	28		214
TYM MACEDONIA **							0						0		0
UKR UKRAINE	170	203	160	2	15	1	551	302	6	16	-	13	337		888
UNK UNITED KINGDOM							0	-	-	-	-	1	1		1
TOTAL	785	632	1002	44	187	14	2664	3098	44	120	23	596	3881	2	6547
PER CENT	12.0	9.7	15.3	0.7	2.9	0.2	40.7	47.3	0.7	1.8	0.4	9.1	59.3	0.0	100.0

* no cases ** no data 1) not complete 2) dog imported from Azerbaijan
3) domestic animals in North Africa

Table 5.3

EUR E U R O P E **3/2002** R A B I E S C A S E S 'OTHER ANIMAL SPECIES' 1. 7.02 - 30. 9.02

LOCATION CODE	NAME	OTH.DOM. ANIMALS			OTHER WILD ANIMALS										UNSPEC.	TOTAL
		PIG	DOG STRAY	OTH.D. ANIMAL	OTH.FOX SPECIES	JACKAL	WOLF	RACCOON DOG	WILD CAT	LYNX	INSECT BAT	SQUIRREL	MUSKRAT	HARE	OTH.W. ANIMAL		
BUL	BULGARIA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4	4
BYE	BELARUS	-	-	-	-	-	1	17	-	-	-	-	-	-	-	-	18
CRO	CROATIA	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	1
DEU	FED.REP.GER.	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	4
EST	ESTONIA	-	-	-	-	-	-	30	-	1	-	-	-	-	-	-	31
FRA	FRANCE	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
LTU	LITHUANIA	-	1	-	-	-	-	68	-	-	-	-	-	-	-	-	69
LVA	LATVIA	-	-	-	-	-	1	21	-	1	-	-	-	-	-	-	23
NET	NETHERLANDS	-	-	-	-	-	-	-	-	-	3	-	-	-	-	-	3
POL	POLAND	-	-	-	-	-	-	16	-	-	3	-	-	-	-	-	19
ROM	ROMANIA	-	-	1	-	-	-	-	-	-	-	-	-	-	1	-	2
RUS	RUSSIAN FED.	4	-	-	2	-	4	15	-	-	-	1	1	-	-	-	27
SVK	SLOVAK REP.	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	1
SWI	SWITZERLAND	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
TUR	TURKEY	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
UKR	UKRAINE	-	-	-	-	-	1	4	-	-	1	1	-	-	-	-	7
UNK	UNITED KING.	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
TOTAL		4	1	1	2	1	7	171	1	2	15	2	1	1	1	4	214
PER CENT		1.9	0.5	0.5	0.9	0.5	3.3	79.9	0.5	0.9	7.0	0.9	0.5	0.5	0.5	1.9	100.0

Table 5.4.1

RABIES CASES 1. 7.02 - 30. 9.02

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															
101 Unsko-Sanski							0	1	-	-	-	-	1		1
103 Tuzlanski	-	-	-	-	2	-	2	4	-	-	-	-	4		6
105 Bosansko-Podrinjski							0	1	-	-	-	-	1		1
107 Hercegovacko-Neretva	2	-	-	-	-	-	2						0		2
108 Zapadnohercegovacki							0	1	-	-	-	-	1		1
205 Novi Grad							0	1	-	-	-	-	1		1
219 Doboj	-	-	1	-	-	-	1						0		1
TOTAL	2	0	1	0	2	0	5	8	0	0	0	0	8	0	13
PER CENT	15.4	0.0	7.7	0.0	15.4	0.0	38.5	61.5	0.0	0.0	0.0	0.0	61.5	0.0	100.0
BUL B U L G A R I A															
05 VIDIN							0	-	-	-	-	1	1		1
11 LOVETCH							0	-	-	-	-	1	1		1
15 PLEVEN							0	-	-	-	-	1	1		1
25 TARGOVITCHE							0	-	-	-	-	1	1		1
TOTAL	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4
FRY FED.REP.OF YUGOSLAVIA															
01 Beograd	-	1	-	-	-	-	1						0		1
02 Pancevo							0	2	-	-	-	-	2		2
03 Novi Sad	1	-	-	-	-	-	1	10	-	-	-	-	10		11
05 Subotica							0	1	-	-	-	-	1		1
06 Sombor	-	1	-	-	-	-	1						0		1
07 Sabac							0	1	-	-	-	-	1		1
08 Pozarevac	-	2	-	-	-	-	2	3	-	-	-	-	3		5
10 Zajecar	1	-	-	-	-	-	1	8	-	1	-	-	9		10
11 Kraljevo							0	3	-	-	-	-	3		3
12 Nis	-	3	1	-	-	-	4	6	-	-	-	-	6		10
13 Podgorica							0	2	-	-	-	-	2		2
TOTAL	2	7	1	0	0	0	10	36	0	1	0	0	37	0	47
PER CENT	4.3	14.9	2.1	0.0	0.0	0.0	21.3	76.6	0.0	2.1	0.0	0.0	78.7	0.0	100.0

Table 5.4.2

RABIES CASES 1. 7.02 - 30. 9.02

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	3	-	-	-	4	7	-	-	-	-	7		11
02 Vitebsk Region	6	16	14	2	1	-	39	45	1	-	-	13	59		98
03 Gomel Region	5	6	11	1	-	-	23	6	1	2	-	-	9		32
04 Grodno Region	1	2	3	-	-	-	6	10	1	1	-	-	12		18
05 Minsk Region	2	9	1	-	-	-	12	25	-	-	2	5	32		44
06 Mogilev Region	-	1	1	1	-	-	3	22	-	-	-	-	22		25
TOTAL	14	35	33	4	1	0	87	115	3	3	2	18	141	0	228
PER CENT	6.1	15.4	14.5	1.8	0.4	0.0	38.2	50.4	1.3	1.3	0.9	7.9	61.8	0.0	100.0
UKR UKRAINE															
01 Krym	1	-	-	-	-	-	1	2	-	-	-	-	2		3
02 Vinnytsia Region	2	4	-	-	-	-	6	2	-	2	-	-	4		10
03 Volyn Region							0	1	-	-	-	-	1		1
04 Dnipropetrovsk Region	3	1	1	-	1	-	6	2	-	-	-	-	2		8
05 Donetsk Region	1	2	1	-	-	-	4	4	-	-	-	-	4		8
06 Zhytomyr Region	2	1	-	-	-	-	3	3	-	-	-	-	3		6
07 Zakarpattia Region	-	-	1	-	-	-	1						0		1
08 Zaporizhzhia Region	1	1	-	-	-	-	2	1	-	-	-	-	1		3
09 Ivano-Frankivsk Regio	1	-	2	-	-	-	3	-	-	-	-	1	1		4
10 Kiev Region	2	3	-	-	-	-	5	3	-	-	-	-	3		8
11 Kirovohrad Region	-	2	3	-	2	-	7	1	-	-	-	-	1		8
12 Luhansk Region	4	2	4	-	-	-	10	-	-	-	-	1	1		11
14 Micolaev Region	-	1	-	-	-	-	1						0		1
15 Odesa Region	3	1	1	-	-	-	5	4	-	-	-	-	4		9
16 Poltava Region	9	15	39	1	1	-	65	12	1	1	-	2	16		81
17 Rivne Region	-	2	1	-	-	-	3	1	-	-	-	-	1		4
18 Sumy Region	3	10	5	-	-	-	18	11	1	2	-	-	14		32
20 Kharkiv Region	8	9	9	-	1	-	27	11	-	1	-	2	14		41
21 Kherson Region	-	2	-	-	-	-	2	3	-	-	-	-	3		5
22 Khmelnytsky Region	1	3	3	-	-	-	7	6	-	-	-	-	6		13
23 Cherkasy Region	2	7	1	-	1	-	11	4	1	1	-	1	7		18
24 Chernivtsy Region							0	1	-	-	-	-	1		1
25 Chernihiv Region	-	6	-	-	-	-	6	30	-	1	-	-	31		37
TOTAL	43	72	71	1	6	0	193	102	3	8	0	7	120	0	313
PER CENT	13.7	23.0	22.7	0.3	1.9	0.0	61.7	32.6	1.0	2.6	0.0	2.2	38.3	0.0	100.0

Table 5.4.3

RABIES CASES 1. 7.02 - 30. 9.02

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		
CRO CROATIA															
01 Zagrebacka	-	1	-	-	-	-	1	19	-	-	-	-	19		20
02 Krapinsko-Zagorska							0	3	-	-	-	1	4		4
03 Sisacko-Moslavaca							0	20	-	-	-	-	20		20
04 Karlovacka							0	3	-	-	-	-	3		3
06 Koprivnicko-Krizevack	-	1	-	-	-	-	1	3	-	-	-	-	3		4
07 Bjelovarsko-Bilogorsk							0	4	-	-	-	-	4		4
10 Viroviticko-Podravska							0	1	-	-	-	-	1		1
11 Pozesko-Slavonska							0	6	-	-	-	-	6		6
12 Brodsko-Posavska							0	4	-	-	-	-	4		4
13 Zadarska							0	1	-	-	-	-	1		1
14 Osijecko-Baranjska							0	3	-	-	-	-	3		3
15 Sibensko-Kninska							0	1	-	-	-	-	1		1
16 Vukovarsko-Srijemska							0	4	-	-	-	-	4		4
17 Splitsko-Dalmatinska	-	1	-	-	-	-	1	14	-	-	-	-	14		15
18 Istarska							0	11	-	-	-	-	11		11
21 Zagreb							0	2	-	-	-	-	2		2
TOTAL	0	3	0	0	0	0	3	99	0	0	0	1	100	0	103
PER CENT	0.0	2.9	0.0	0.0	0.0	0.0	2.9	96.1	0.0	0.0	0.0	1.0	97.1	0.0	100.0
HUN HUNGARY															
01 Budapest							0	1	-	-	-	-	1		1
02 Baranya							0	2	-	-	-	-	2		2
03 Bacs-Kiskun	-	1	-	-	-	-	1	3	-	-	-	-	3		4
04 Bekes							0	3	-	-	-	-	3		3
05 Borsod-Abauj-Zemplen							0	1	-	-	-	-	1		1
06 Csongrad	-	1	-	-	-	-	1	5	-	1	-	-	6		7
09 Hajdu-Bihar	1	-	-	-	-	-	1	4	-	-	-	-	4		5
12 Nograd							0	1	-	-	-	-	1		1
13 Pest							0	1	-	-	1	-	2		2
15 Szabolcs-Szatmar-Bere							0	1	-	-	-	-	1		1
16 Jasz-Nagykun-Szolnok	-	-	1	-	-	-	1	3	-	-	-	-	3		4
18 Vas	1	1	-	-	-	-	2	1	-	-	-	-	1		3
19 Veszprem							0	2	-	-	-	-	2		2
TOTAL	2	3	1	0	0	0	6	28	0	1	1	0	30	0	36
PER CENT	5.6	8.3	2.8	0.0	0.0	0.0	16.7	77.8	0.0	2.8	2.8	0.0	83.3	0.0	100.0

Table 5.4.4

RABIES CASES 1. 7.02 - 30. 9.02

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		
DEU FED.REP.OF GERMANY															
01 Schleswig-Holstein							0	-	-	-	-	1	1		1
03 Niedersachsen							0	-	-	-	-	2	2		2
12 Brandenburg							0	-	-	-	-	1	1		1
TOTAL	0	0	0	0	0	0	0	0	0	0	0	4	4	0	4
NET NETHERLANDS															
01 DRENTHE							0	-	-	-	-	2	2		2
07 NOORD-HOLLAND							0	-	-	-	-	1	1		1
TOTAL	0	0	0	0	0	0	0	0	0	0	0	3	3	0	3
POL POLAND															
02 Dolnoslaskie	1	1	-	-	-	-	2	5	1	-	-	-	6		8
06 Lubelskie	2	3	-	-	-	-	5	28	-	-	-	2	30		35
12 Malopolskie	-	2	-	-	-	-	2	4	-	-	-	-	4		6
14 Mazowieckie	-	1	-	-	-	-	1	7	1	-	1	2	11		12
16 Opolskie							0	1	-	-	-	-	1		1
18 Podkarpackie	-	4	1	-	-	-	5	21	-	-	-	-	21		26
20 Podlaskie	-	1	13	-	-	-	14	15	-	1	-	3	19		33
22 Pomorskie							0	-	-	-	-	1	1		1
24 Slaskie							0	2	-	-	-	-	2		2
28 Warminsko-Mazurskie	-	-	5	-	-	-	5	4	-	-	-	1	5		10
30 Wielkopolskie	1	4	5	-	-	-	10	43	-	1	1	10	55		65
TOTAL	4	16	24	0	0	0	44	130	2	2	2	19	155	0	199
PER CENT	2.0	8.0	12.1	0.0	0.0	0.0	22.1	65.3	1.0	1.0	1.0	9.5	77.9	0.0	100.0
SVK SLOVAK REPUBLIC															
1 Bratislavsky kraj							0	1	-	-	-	-	1		1
2 Trnavsky kraj	-	1	-	-	-	-	1	6	-	-	-	-	6		7
3 Trenciansky kraj							0	1	-	-	-	-	1		1
4 Nitriansky kraj	-	1	-	-	1	-	2	4	-	-	-	1	5		7
6 Banskobystricky kraj	1	1	-	-	-	-	2	1	-	1	-	-	2		4
7 Presovsky kraj							0	1	-	-	-	-	1		1
TOTAL	1	3	0	0	1	0	5	14	0	1	0	1	16	0	21
PER CENT	4.8	14.3	0.0	0.0	4.8	0.0	23.8	66.7	0.0	4.8	0.0	4.8	76.2	0.0	100.0

Table 5.4.5

R A B I E S C A S E S 1. 7.02 - 30. 9.02

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 E S T O N I A															
01 Harjumaa	-	1	1	-	-	-	2	6	1	-	-	4	11		13
04 Jogevamaa	-	-	1	-	-	-	1	1	-	-	-	6	7		8
05 Jaervamaa	1	1	-	-	-	-	2	8	-	-	-	8	16		18
06 Laeaenemaa	1	-	-	-	-	-	1	1	-	-	-	-	1		2
07 Laeaene-Virumaa	-	-	5	-	-	-	5	4	-	-	-	4	8		13
08 Polvamaa	1	2	-	-	-	-	3	1	-	1	-	4	6		9
09 Paernumaa	1	1	1	-	-	-	3	1	-	-	-	1	2		5
10 Raplamaa	-	-	1	-	-	-	1	6	-	-	-	-	6		7
12 Tartumaa	1	1	-	-	-	-	2	8	-	-	-	3	11		13
13 Valgamaa							0	1	1	-	-	-	2		2
14 Viljandimaa	-	-	1	-	-	-	1	2	-	-	-	1	3		4
15 Vorumaa	-	2	1	-	-	-	3	6	-	-	-	-	6		9
TOTAL	5	8	11	0	0	0	24	45	2	1	0	31	79	0	103
PER CENT	4.9	7.8	10.7	0.0	0.0	0.0	23.3	43.7	1.9	1.0	0.0	30.1	76.7	0.0	100.0
MLD M O L D O V A															
04 Edinai	-	-	1	-	-	-	1	5	-	-	-	-	5		6
05 Lapusna	-	1	-	-	-	-	1						0		1
07 Soroca	-	-	-	-	1	-	1						0		1
TOTAL	0	1	1	0	1	0	3	5	0	0	0	0	5	0	8
PER CENT	0.0	12.5	12.5	0.0	12.5	0.0	37.5	62.5	0.0	0.0	0.0	0.0	62.5	0.0	100.0
ROM R O M A N I A															
01 ALBA							0	-	-	-	-	1	1		1
03 ARGES	-	-	1	-	-	-	1	1	-	-	-	-	1		2
06 BISTRITA-NASAUD							0	2	-	-	-	-	2		2
16 DIMBOVITA							0	2	-	-	-	-	2		2
17 DOLJ	1	-	1	-	-	-	2						0		2
20 GORJ							0	1	-	-	-	-	1		1
27 MURES	-	1	-	-	-	1	2	9	-	-	-	-	9		11
38 VASLUI	1	1	-	-	-	-	2						0		2
39 VILCEA	1	-	-	-	-	-	1						0		1
TOTAL	3	2	2	0	0	1	8	15	0	0	0	1	16	0	24
PER CENT	12.5	8.3	8.3	0.0	0.0	4.2	33.3	62.5	0.0	0.0	0.0	4.2	66.7	0.0	100.0

Table 5.4.6

RABIES CASES 1. 7.02 - 30. 9.02

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		
FRA FRANCE															
03 Allier							0	-	-	-	-	1	1		1
23 Creuse							0	-	-	-	-	1	1		1
93 Seine Saint Denis	1	-	-	-	-	-	1						0		1
TOTAL	1	0	0	0	0	0	1	0	0	0	0	2	2	0	3
LVA LATVIA															
02 Aluksne							0	9	-	-	-	1	10		10
03 Balvi	-	-	-	1	-	-	1	1	1	-	-	2	4		5
04 Bauska							0	2	1	-	-	3	6		6
05 Cesis							0	4	-	-	-	-	4		4
06 Daugavpils							0	1	-	-	-	-	1		1
07 Dobele	-	1	-	-	-	-	1	2	-	-	-	4	6		7
08 Gulbene							0	5	-	-	-	-	5		5
09 Jekabpils	1	-	-	-	-	-	1						0		1
10 Jelgava	-	1	-	-	-	-	1	-	-	-	-	1	1		2
11 Kraslava	-	-	1	-	-	-	1	-	-	1	-	1	2		3
12 Kuldiga							0	-	1	-	-	-	1		1
13 Liepaja							0	1	-	1	-	-	2		2
15 Ludza	-	-	1	1	-	-	2	-	-	-	-	1	1		3
16 Madona							0	5	1	-	-	1	7		7
17 Ogre							0	2	-	-	-	1	3		3
18 Preili	2	3	3	-	-	-	8	6	-	-	-	1	7		15
19 Rezekne	1	-	2	-	-	-	3	3	-	-	-	-	3		6
20 Riga	1	1	-	-	-	-	2	3	-	-	-	1	4		6
21 Saldus							0	1	-	-	-	2	3		3
22 Talsi							0	1	-	-	-	-	1		1
23 Tukums	-	1	-	-	-	-	1	1	-	-	-	-	1		2
24 Valka							0	2	-	-	-	-	2		2
25 Valmiera	-	1	-	-	-	-	1	8	1	-	-	3	12		13
26 Ventspils							0	-	-	-	-	1	1		1
TOTAL	5	8	7	2	0	0	22	57	5	2	0	23	87	0	109
PER CENT	4.6	7.3	6.4	1.8	0.0	0.0	20.2	52.3	4.6	1.8	0.0	21.1	79.8	0.0	100.0
UNK UNITED KINGDOM OF GREAT BRIT.															
65 LANCASHIRE							0	-	-	-	-	1	1		1

Table 5.4.7

LTU L I T H U A N I A R A B I E S C A S E S 1. 7.02 - 30. 9.02

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		3
34 Anyksciu	-	1	-	-	-	-	1	3	1	1	-	3	8		9
36 Birzu	-	-	2	-	-	-	2	-	-	-	-	1	1		3
38 Varenos							0	2	-	-	-	-	2		2
39 Vilkaviskio	-	-	1	-	-	-	1						0		1
41 Vilniaus							0	1	-	-	-	-	1		1
43 Zarasu							0	2	-	-	-	3	5		5
45 Ignalinos	-	-	1	-	1	-	2	1	-	-	-	5	6		8
46 Jonavos							0	3	-	1	-	-	4		4
47 Joniskio	-	1	-	-	-	-	1	1	-	3	-	1	5		6
52 Kauno	1	-	-	1	-	-	2	-	-	1	-	1	2		4
53 Kedainiai	-	-	1	-	-	-	1	1	-	-	-	7	8		9
54 Kelmes	-	1	3	-	-	-	4	-	-	1	-	-	1		5
55 Klaipedos	-	1	-	-	-	-	1	6	-	1	-	7	14		15
56 Kretdingos							0	3	-	-	-	-	3		3
57 Kupiskio	-	2	2	-	-	-	4	2	-	1	-	1	4		8
59 Lazdiju	1	-	4	-	-	-	5	9	-	1	-	5	15		20
62 Moletu	1	-	-	-	-	-	1	1	1	-	-	1	3		4
65 Pakruojo	-	-	1	-	-	-	1	2	-	1	-	-	3		4
66 Panevezio	1	1	3	-	-	-	5	9	-	1	-	5	15		20
68 Plunges	-	-	1	-	-	-	1						0		1
69 Prienu	-	-	-	-	-	1	1	2	-	-	-	1	3		4
71 Radviliskio	1	3	3	-	-	-	7	2	-	5	-	4	11		18
72 Raseiniai	-	-	2	-	-	-	2	1	-	1	-	-	2		4
73 Rokiskio	-	1	-	-	-	-	1						0		1
75 Skuodo	1	-	1	-	-	-	2						0		2
77 Taurages	-	-	1	-	-	-	1	12	-	-	-	4	16		17
78 Telsiu	-	-	2	-	-	-	2	-	-	-	-	2	2		4
79 Traku							0	-	-	1	-	1	2		2
81 Ukmerges	-	-	1	-	-	-	1	1	-	-	-	1	2		3
82 Utenos							0	4	1	-	-	5	10		10
84 Sakiu	-	-	1	-	-	-	1	1	-	1	-	2	4		5
85 Salcininku							0	1	-	-	-	-	1		1
86 Svencioniu	-	1	-	-	-	-	1	2	-	-	-	-	2		3
87 Silales							0	1	-	-	-	-	1		1
88 Silutes	-	1	1	-	-	-	2	6	-	2	-	3	11		13
89 Sirvintu							0	2	-	-	-	2	4		4
91 Siauliu							0	3	-	-	-	1	4		4
94 Jurbarko	-	-	1	-	-	-	1	1	-	-	-	2	3		4
TOTAL	6	13	33	1	1	1	55	86	4	22	0	68	180	0	235
PER CENT	2.6	5.5	14.0	0.4	0.4	0.4	23.4	36.6	1.7	9.4	0.0	28.9	76.6	0.0	100.0

Table 5.4.8

RUS RUSSIAN FEDERATION — R A B I E S C A S E S — 1. 7.02 - 30. 9.02

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	2	1	2	-	-	-	5	9	-	-	-	3	12		17
09	Bryansk Region	1	2	1	-	-	-	4	4	-	-	-	-	4		8
10	Vladimir Region	1	4	-	-	-	-	5	2	-	-	-	2	4		9
11	Ivanovo Region	2	-	-	-	-	-	2	2	-	-	-	2	4		6
12	Twer Region	-	-	-	-	2	-	2	4	-	-	-	1	5		7
13	Kaluga Region	-	3	-	-	1	-	4	15	-	-	-	-	15		19
15	Moscow Region	3	3	-	-	1	-	7	6	-	-	-	2	8	1	16
16	Oryol Region	4	8	20	-	-	1	33	19	-	-	-	-	19		52
17	Ruazan Region	1	-	1	-	-	-	2	2	-	-	-	1	3		5
18	Smolensk Region	2	1	-	-	-	-	3	3	-	-	-	2	5		8
19	Tula Region	4	2	6	-	-	1	13	32	1	-	-	3	36		49
21	Nizhniy Novgorod Reg.	-	1	-	-	-	-	1						0		1
23	Rep. of Mari-El							0	1	-	-	-	-	1		1
25	Rep. of Chuvashiya	-	1	1	-	-	-	2						0		2
26	Belgorod Region	2	4	2	-	-	-	8	11	-	1	-	-	12		20
27	Voronezh Region	8	4	19	-	-	1	32	10	-	-	-	-	10		42
28	Kursk Region	5	12	18	-	1	-	36	38	-	1	-	-	39		75
29	Lipetsk Region	1	2	3	1	-	-	7	19	-	-	-	-	19		26
30	Tambov Region	1	-	2	-	-	-	3	3	-	-	-	-	3		6
31	Astrakhan Region	6	2	-	-	-	-	8	1	-	-	-	2	3		11
32	Volgograd Region	1	1	5	-	-	-	7	3	-	-	-	2	5		12
33	Samara Region	2	2	4	-	-	-	8	16	-	-	-	1	17		25
34	Penza Region							0	5	-	-	-	-	5		5
35	Saratov Region	2	2	-	-	-	1	5	17	-	-	-	-	17		22
37	Rep. of Kalmykiya	2	2	-	-	-	-	4						0		4
38	Rep. of Tatarstan	-	2	10	-	-	-	12	3	-	-	-	-	3		15
39	Krasnodar Territory	-	1	-	-	-	-	1	1	-	-	-	-	1		2
40	Stavropol Territory	2	2	4	-	-	-	8	1	-	-	-	-	1		9
41	Rostov Region	5	2	4	-	-	-	11	1	-	1	-	1	3		14
42	Orenburg Region	5	1	5	-	-	-	11	13	1	-	-	1	15		26
43	Perm Region	-	-	3	-	-	-	3						0		3
44	Rep. of Bashkortostan	10	5	92	2	-	-	109	8	2	-	-	-	10		119
TOTAL		72	70	202	3	5	4	356	249	4	3	0	23	279	1	636
PER CENT		11.3	11.0	31.8	0.5	0.8	0.6	56.0	39.2	0.6	0.5	0.0	3.6	43.9	0.2	100.0

Table 5.4.9

RABIES CASES 1. 7.02 - 30. 9.02

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		
SPA SPAIN															
52 MELILLA (NORTH AFRICA	1	-	-	-	-	-	1						0		1
SVN SLOVENIA															
009 BREZICE							0	1	-	-	-	-	1		1
SWI SWITZERLAND AND LIECHTENSTEIN															
08 GENEVE							0	-	-	-	-	1	1		1
TUR TURKEY															
05 AMASYA	2	-	-	-	-	-	2						0		2
09 AYDIN	2	-	19	-	1	-	22	1	-	-	-	1	2		24
10 BALIKESIR	1	-	-	-	-	-	1						0		1
21 DIYARBAKIR	-	-	1	-	-	-	1						0		1
25 ERZURUM	1	-	-	-	-	-	1						0		1
33 ICEL	1	-	-	-	-	-	1						0		1
34 ISTANBUL	2	-	1	-	-	-	3						0		3
35 IZMIR	5	-	3	-	-	-	8	2	-	1	-	-	3		11
41 KOCAELI	1	-	-	-	-	-	1						0		1
45 MANISA	2	-	1	-	-	-	3						0		3
46 KAHRAMANMARAS	-	-	1	-	-	-	1						0		1
48 MUGLA	-	-	3	-	-	-	3	1	-	-	-	-	1		4
54 SAKARYA	1	-	-	-	-	-	1						0		1
55 SAMSUN	1	-	-	-	-	-	1						0		1
58 SIVAS	2	-	-	-	-	-	2	-	-	1	-	-	1		3
63 SANLIURFA	-	-	2	-	-	-	2						0		2
66 YOZGAT	1	-	-	-	-	-	1						0		1
TOTAL	22	0	31	0	1	0	54	4	0	2	0	1	7	0	61
PER CENT	36.1	0.0	50.8	0.0	1.6	0.0	88.5	6.6	0.0	3.3	0.0	1.6	11.5	0.0	100.0

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RABIES CASES EUROPE
3 rd QUARTER 2002
2154 CASES REPORTED

15 BAT RABIES CASES INCLUDED

ICE (rabies free)

NOR (rabies free)

SWE (rabies free)

FIN (rabies free)

RUS (636)

EST (103)

LVA (109)

LTU (235)

Baltic Sea

DEN (0)

RUS

BYE (228)

IRE (rabies free)

UNK (1)

POL (196) (3)

DEU (0) (4)

NET (3)

BEL (rabies free)

LUX (rabies free)

(1) (imported dog case)

FRA (2)

UKR (312) (1)

KAZ

Caspian Sea

Sea of Azov

CZH (0)

SVK (21)

MLD (8)

AUT (0)

HUN (36)

ROM (24)

Black Sea

GEO

AZE

ARM

AZE

SWI (1)

ITA (rabies free)

SVN (1)

CRO (103)

BIH (13)

FRY (47)

BUL (4)

IRN

TUR (61)

POR (rabies free)

SPA

NORTH AFRICA (1)

TYM (no data)

(0) ALB

GRE (rabies free)

IRQ

SYR

Mediterranean Sea

CYP (rabies free)

LBN

150 km

WHO Coll. Centre Wusterhausen / DEU

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