

RABIES BULLETIN EUROPE

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1. INTRODUCTION

This BULLETIN describes the **reported rabies cases in Europe** for the **Fourth Quarter 1998**, subsequently referred to as "*This Quarter*".

In SECTION 2 a **summary of the rabies situation** in general is given.

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

In the **Miscellaneous SECTION (4)** under 4.1 a **review** is given of **all rabies cases** received at the WHO Collaborating Centre for Rabies Surveillance and Research, **from the beginning of the data col-**

lection in 1977 up to date. In this connection TABLES of quarterly data have been produced and a graph with annual data (ANNEX 3). Data on wildlife, including bat rabies and human rabies have been analysed..

4.2 points out the **visualisation of the rabies epizootic in Switzerland and Europe** (data of the RABIES BULLETIN EUROPE) in the Internet, which was developed by a Swiss group of scientists.

Under 4.3 an article on Human Rabies Prevention - United States, 1999, has been commented in regard to the recommendation of the Advisory Committee on Immunization Practices (ACIP). **Bat ra-**

bies handling in the USA has been singled out for possible application in Europe as well.

The **rabies case data** are tabulated for the **Fourth Quarter 1998** 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 **Fourth Quarter 1998** is shown on maps of the Russian Federation, Turkey and Europe in the ANNEX. Also in the ANNEX is a graph which refers to the summary article under 4.1 of this BULLETIN.

2. SUMMARY OF RABIES IN EUROPE

2.1 Fourth Quarter 1998

During "*This Quarter*", **1893 rabies cases** were reported in Europe. Of these 1127 were in wild animals, 765 in domestic animals and 1 in a human.

Of the **1127 cases in wild animals**, 957 (50.6% of total) were foxes, 3 wolves, 101 raccoon dogs, 2 wild cats, 1 lynx, 3 badgers, 4 stone martens, 14 pine martens, 1 polecat, 2 ferrets, 1 fish otter, 5 other

wild carnivores, 6 roe deer, 1 moose, 1 wild boar, 1 hedge hog, 3 bats, 1 hamster, 2 Norwegian rats, 3 wild rabbits, 12 other wild animals and 3 unspecified animals. Of the **765 domestic animals**, 200 were dogs, 185 cats, 25 horses, 325 bovines, 20 sheep, 3 goats and 7 pigs.

The **1 human case** mentioned was reported from the Russian Federation.

All data above are pre-

sented in TABLES 5.1 and 5.3 of SECTION 5 and in the TABLES of the individual countries.

Compared to the previous quarter (1439 cases) an increase is noticed (by 454 cases) during "*This Quarter*". That is expected as **wildlife or more exactly fox-mediated rabies is seasonal** and, the increase in autumn/winter is connected to the dispersal of young foxes born in spring of

the year which causes an increased contact rate and thus, the possibility to pass on the disease. Most of the countries recorded this increase.

Turkey, the only country in Europe with **dog-mediated rabies** and not showing obvious seasonality of the disease recorded a slight decrease of cases (from 29 cases in animals in the previous quarter to 27 in "*This Quarter*").

There were **3 cases in insectivorous bats**, and **2 sheep** died infected with the bat rabies virus prevalent in Europe. The countries affected were: Denmark (2), Germany (1), The Netherlands (1) and Poland (1).

Because of the distinct epidemiological features of the disease with the European bat rabies virus, these cases are marked in a different colour on the map in the ANNEX.

Rabies-free countries in Europe during "*This Quarter*" were: Albania, Finland, Greece, Iceland, Ireland, Italy, Macedonia, Norway, Portugal, the mainland and islands of Spain, Sweden, Switzerland, the United Kingdom of Britain and Northern Ireland.

There were **no cases reported** from Belgium, the Grand Duchy of Luxembourg, the Spanish territory of North Africa and Slovenia, but the last

indigenously acquired case (terrestrial or bat) was less than two years ago.

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

2.2 Development and Trends in 1998

Rabies case data summarizing the year 1998 can be found in TABLES 5.2, 5.4 and 5.5 of SECTION 5.

A special description of the development and trends in 1998 has been left out as the subject has been included in the review article under 4.1 of this BULLETIN.

3. RABIES IN INDIVIDUAL COUNTRIES

3.1 Albania ALB

by Kristaq Berxholi

The country remained rabies-free.

Surveillance:

A total of 20 animals was examined for rabies (10 foxes, 4 dogs, 3 cats, 3 minks) but revealed negative results.

Summary 1998

See article „Evidence of Freedom from Rabies in Albania „RABIES BULLETIN EUROPE" 3/98, pp 9-10.

3.2 Austria AUT

by Helmut Schnabl

Of 6395 animal samples examined for rabies "*This Quarter*", only 1 case in a fox was diagnosed positive. The case occurred in the federal province of Burgenland in the very east of the country.

Summary 1998

The total of cases amounted to 3 cases (3 foxes) compared to 8 (7 foxes, 1 bovine) in the previous year. In all infected areas of Austria

oral vaccination of foxes against rabies is practised.

3.3 Belgium BEL

by L. Hallet

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

Summary 1998

In 1998 only 1 fox was diagnosed rabid in the region of Bastogne in the province of Luxembourg.

The Institute Louis Pasteur of Bruxelles investi-

gated 933 samples for rabies with negative results. Of these 560 were foxes (60%), 189 bovines, 35 cats, 29 dogs, 58 small ruminants, 6 horses, 1 donkey and 55 others (12 stone martens, 9 badgers, 2 ferrets, 1 polecat, 10 bats, 2 pine martens, 3 rats, 9 cervides, 1 mouse weasel, 2 squirrels, 1 duck and 3 wild rabbits). See as well FIGURE 3.3.1 showing the distribution of samples in Belgium.

There were 3 campaigns of oral vaccination of foxes against rabies in 1998:

- During March an area of 6042 km² was covered and

100,720 vaccine baits were distributed by helicopter (a density of 16.7 vaccine baits per km²).

- In the beginning of May a manual distribution campaign was carried out to reach the fox cubs at the den, in an area close to 4600 km². At 3699 dens with 15,089 entrances, 36,049 vaccine baits were deposited.

- Finally, a second campaign with helicopter was carried out in November. It covered 5939 km² dropping 100,840 vaccine baits (density 17 per km²)

3 rabies cases were reported in Bulgaria.

Summary 1998

11 cases were reported in 1998 compared to 15 cases in the previous year. The animal species affected by the disease was not mentioned.

3.6 Belarus BYE

by S.N. Shpilevsky

During "*This Quarter*", 15 cases of rabies were reported in 12 districts of 4 regions for the month of October only.

Summary 1998

The total number of rabies amounted to 97 with the reports on November and December still missing.

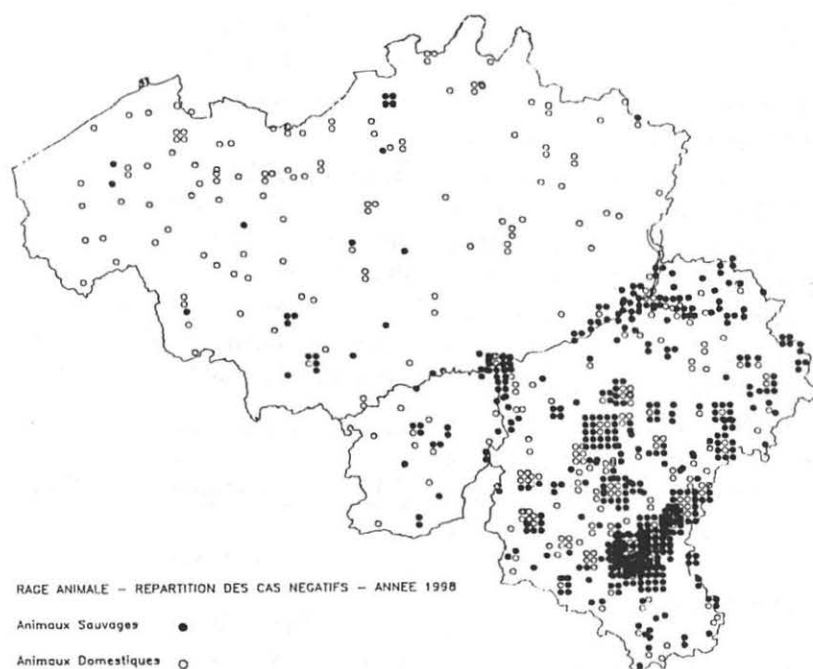
3.7 Croatia CRO

by Danijela Lamer

During "*This Quarter*", a total number of 147 cases of rabies has been diagnosed in wild and domestic animals, on the territories of 38 municipalities. That represents an increase of 21 cases (+16.7%) compared to the same period in 1997, and 90 cases more (+157.9%) than in the previous quarter.

Out of the total 129 were wild animals (123 foxes, 1 wild cat, 1 fish otter, 1 marten and 3 wild rabbits) and 18 domestic animals (8 dogs, 2 cats, 2 bovines, 1 horse, 3 sheep and 2 goats).

FIGURE 3.3.1



3.4 Bosnia and Hercegovina BIH

No data.

3.5 Bulgaria BUL

by L. Lavchev

During "*This Quarter*",

Summary 1998

A total of 388 cases was reported in 1998, 41 cases less than in 1997.

3.8 Czech Republic CZH

by Oldrich Matouch

A total of 30 rabies cases were reported during "*This Quarter*", 20 cases more than during the previous quarter and 3 cases less than during the fourth quarter 1997.

All rabies cases occurred in wild animals (28 foxes, 2 roe deer).

The North Bohemia region and especially the district Litoměřice (12 cases) was the most affected area.

An oral vaccination campaign was carried out in October covering an area of 31,500 km². 560,4000 Lysvulpen (BIOVETA SAD-Bern) vaccine doses were deposited manually in 46 districts. Aerial distribution was performed in 6 highly affected districts in North Bohemia in an area of 4950 km² using 120,000 vaccine baits.

Summary 1998

In 1998, a total of 8127 animals belonging to 53 species were examined for rabies in the Czech Republic. Rabies was diagnosed in 85 cases, 153 less than in 1997. This is the lowest annual figure during the last thirty years.

The highest incidence was registered in foxes - 77

cases (90.6%). The other animals involved were roe deer (2), marten (1), badger (1), cat (3) and dog (1).

Concentration of rabies cases was noticed in North Bohemia mainly in the districts Ustí n.L. (17) and Litoměřice (14).

3.9 Denmark DEN

by Eric Stougaard and S. Ammendrup

During "*This Quarter*", 2 sheep were diagnosed rabid in the vicinity of the sheep case which occurred during the previous quarter and which turned out to be infected with the bat virus EBL1 genotype.

Remark:

The two above mentioned sheep cases of rabies infection of "*This Quarter*" are considered to be related to the EBL1 genotype. Besides the rabies infection, which could be detected by conventional immunofluorescence technique (SANOFI conjugate) on smears from different parts of the brain, both sheep also showed evidence of listeriosis.

Summary 1998

In 1998, 15 rabies cases occurred in Denmark, 3 in sheep and 12 in bats. In 1997 8 cases in bats were recorded; in 1996 no rabies cases.

**3.10 Germany, DEU
Federal Republic**

by Winfried W. Müller
and Hartmut Schlüter

During "*This Quarter*", 38 rabies cases in terrestrial animals (30 foxes, 1 badger, 1 stone marten, 4 roe deer, 2 bovines) and 1 bat were reported.

There were two new outbreaks after a long period of quiescence in the states of Hessen (19 cases) and Sachsen (9 cases). Rabies cases in the focus of Nordrhein-Westfalen were reduced compared to the previous quarter. One case each was reported in the states of Saarland and Rheinland-Pfalz.

The bat rabies case occurred in the state of Brandenburg.

Summary 1998

The annual total amounted to 108, 22 cases more than in 1997.

There were 4 bat rabies cases included in the total, 1 more than in 1997.

3.11 Estonia EST

by Matti Nautras

In 9 infected districts of Estonia 28 rabies cases were diagnosed during "*This Quarter*". There were 20 cases in wild animals registered (9 foxes, 1 moose, 10 raccoon dogs) and 8 in domestic animals (2 dogs, 4 cats, 2 bovines).

Summary 1998

The total in 1998 amounted to 170, 20 cases more than in 1997. 14 of 15 districts were affected by the disease recording 2 to 39 cases during the year.

3.12 Finland FIN

by Riitta Heinonen

The country remained rabies-free.

Surveillance:

A total of 111 animals were examined by immunofluorescence test on brain tissue during "*This Quarter*", all with negative results. Of the animals 46 were raccoon dogs, 38 foxes, 1 ermine, 7 brown bears, 1 badger, 1 polecat, 1 American mink, 8 other wild carnivores, 1 elk, 3 dogs, 3 cats, 1 bovine.

3.13 France FRA

by Michel F.A. Aubert

One rabies case in a cat was recorded during "*This Quarter*" close to the northern national border with Germany.

Surveillance:

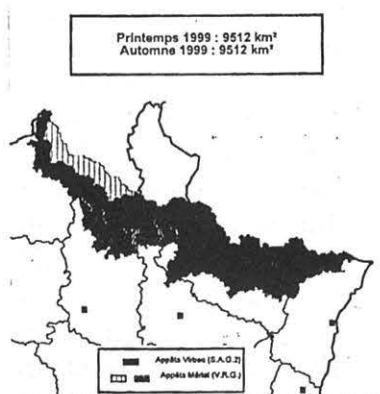
During "*This Quarter*", 1029 samples were examined for rabies with negative results.

Summary 1998

In France 4 rabies cases were registered in 1998: 1 dog, 1 cat, 1 fox, 1 bat.

To protect the north-eastern border with Belgium, Luxembourg, and Germany 2 oral vaccination campaigns are planned for 1999 (see figure).

FIGURE 3.13.1



Programme de vaccination orale pour 1999

Source:

Bulletin Epidemiologique Mensuel de la Rage Animale en France, Vol. 28, Nr. 10, 11, 12, 1998.

3.14 Federal Republic FRY of Yugoslavia

by Milijana Simić

29 rabies cases (in 16 foxes, 3 dogs, 8 cats and 2 sheep) were registered during "*This Quarter*" in the Federal Republic of Yugoslavia, 17 cases more than in the previous quarter.

Summary 1998

The annual total amounted to 87 cases, 11 cases less than in the previous year.

3.15 Greece GRE

The country remained rabies-free.

3.16 Hungary HUN

by Bálint Kerekes

During "*This Quarter*", 147 rabies cases in animals were reported, 41 cases more than in the previous quarter and 27 cases less than in the fourth quarter 1997.

Animal distribution involved in the disease as well as case distribution geographically were similar to the previous quarter.

Summary 1998

There was a total of 554 rabies cases in 1998, 17 cases less than in 1997 and 803 cases less than in 1996. This large reduction was possible partly due to the fact that the oral vaccination area could be extended to the west of Hungary up to the River Danube in the centre of the country.

3.17 Iceland ICE

The country remained rabies-free.

3.18 Ireland IRE

The country remained rabies-free.

3.19 Italy ITA

by Santino Prosperi

The country remained rabies-free.

Surveillance and Oral Vaccination in 1998

Surveillance was carried out in the North East Alpine Regions: 2876 wild animals (2553 foxes) and 221 domestic animals were examined in Trentino Alto Adige, Veneto and Friuli Venezia Giulia with negative results.

On 22 January 1998, an Ordinance of the Ministry of Health made the vaccination compulsory for dogs, cattle, sheep, goats and equines in areas at risk of Friuli Venezia Giulia Region.

Oral vaccination of foxes was carried out in spring in the provinces of Trieste, Gorizia and Udine in an area of 1,600 km² using 25,000 vaccine baits.

3.20 Lithuania LTU

by K. Lukauskas and A. Dranseika

During "*This Quarter*", a total of 86 cases of rabies were diagnosed, 56 in wild animals (24 foxes, 29 raccoon dogs, 3 pine martens) and 30 in domestic animals (23 bovines, 4 cats, 2 dogs, 1 goat).

There was an increase of 29 cases compared to the previous quarter. In the fourth quarter 1997, 86 cases were

reported as in "*This Quarter*".

The most affected districts during "*This Quarter*" were Marijampolė, Pakruojis, Raseiniai, Širvintos, Utenos and Šalšinkai.

More than 20 thousand dogs and other domestic animals were vaccinated against rabies.

Oral vaccination of foxes was practised in October. 100.000 vaccine baits Lysvulpen were distributed in 27 districts applying a density of 15-20 vaccine baits per km².

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

Summary 1998

The annual total amounted to 223 cases. 43 cases more than in previous year.

3.21 Luxembourg LUX

by Joseph Kremer

During "*This Quarter*", no rabies case was diagnosed.

Summary 1998

The year 1998 was the first year without a rabies case since 1972. However, as there are often cases occurring in neighbouring countries close to the national border, veterinary authorities decided in cooperation with the department of forestry to organize 2 oral vaccination campaigns in 1998 covering the entire country.

RABORAL vaccine baits were used. They were distributed by helicopter.

58 suspect animals were examined for rabies with negative results. They were 37 wild animals (27 foxes, 2 stone martens, 1 pine marten, 2 wild boars, 4 roe deer, 1 fallow deer) and 21 domestic animals (5 bovines, 3 sheep, 1 horse, 3 dogs, 9 cats).

3.22 Latvia LVA

by J. Rimeicāns and E. Jēgers

43 rabies cases were registered during "*This Quarter*" in 16 districts. 26 cases of the total were diagnosed in wild animals (60.5% of total) - 19 foxes, 6 raccoon dogs, 1 wolf. Of 17 rabies cases in domestic animals 7 were cats, 6 dogs, 3 bovines and 1 horse. The most affected district was Valmiera with 11 cases.

Summary 1998

The annual total amounted to 210 cases, 69 more than in the previous year.

3.23 Moldova MLD

by Vasile Bahau, A. Ganea and V. Kilyary

During "*This Quarter*", 27 samples (17 domestic and 10 wild animals) were investigated for rabies. 12 of these were diagnosed rabid: Belcy (town) - 1 dog, Syngereya - 4 bovines, Dondushany - 1 fox, New

Aneny - 2 foxes, Shtefan Voda - 1 cat, Kaushany - 2 foxes, Grigoriopol - 1 cat.

Summary 1998

The total number of rabies cases amounted to 37, 15 more than in the previous year.

Since 1994 it is intended to carry out oral vaccination of foxes in the country however, it can not be materialized because of financial restraint.

3.24 Netherlands NET

by G. Visser

During "*This Quarter*", 18 animals (1 fox, 1 dog, 3 cats and 13 bats) were investigated for rabies. One bat from an unknown location was found to be positive for rabies.

Summary 1998

In 1998, 142 animals (10 foxes, 6 dogs, 5 cats, 1 cow, 1 polecat, 1 ferret, 1 squirrel and 117 bats) were investigated for rabies. Of the 117 bats, 100 were wild animals, 6 were from a bat colony in the Artis Zoo in Amsterdam, 11 were Rousettes from the Blijdorp Zoo in Rotterdam.

Rabies was diagnosed in 7 bats. Six bats were wild bats, one was a Rousettus from the Rotterdam Zoo. The colony of Rousettes to which the positive animal belonged, was eliminated in February 1998.

3.25 Norway NOR

by Eivind Liven

The country remained rabies-free.

3.26 Poland POL

by Andrzej Komorowski

During "*This Quarter*", 343 rabies cases in animals were registered in Poland including 1 bat rabies case. There were 14 cases less than in the previous quarter and 10 cases more than in the fourth quarter 1997.

Summary 1998

The total number of cases amounted to 1332, 163 cases less than in 1997. Oral vaccination, started in 1993, has nearly freed the western half of the country. Rabies cases have also been reduced by more than half when compared to the total of 1992 (3084 cases) prior to vaccination.

3.27 Portugal POR

The country remained rabies-free.

3.28 Romania ROM

by Nicolai Popărlan

During "*This Quarter*", 14 rabies cases were recorded in Romania in 5 foxes, 1 other wild animal, 4 cats and 4 bovines.

The cases occurred in 7 provinces throughout the country.

Summary 1998

The annual total amounted to 50 cases, 16 cases more than in 1997.

3.29 Russia RUS (European part only)

by V.A.Vedernikov, V.A.Sedov,
P.N.Pitalev, V.E.Semljanova,
A.N.Guljukin,
B.L.Cherkasskiy,
V.Y. Ladnyi, V.V.Seliverstov,
V.F.Pilinin, and S.A. Kolomizev

During "*This Quarter*", 780 rabies cases in animals were reported.

Of the total number of cases 483 were in domestic animals - 136 dogs, 99 cats, 209 cattle, 20 horses, 12 sheep, 7 pigs. Of 297 wild animals rabies was diagnosed in 275 foxes, 6 raccoon dogs, 5 corsac foxes (*Vulpes corsac* L.), 2 pine martens, 2 wolves, 2 rats, 1 ferret, 1 hamster, 1 hedgehog, 1 wild boar, 1 monkey.

Most affected were the Republic of Bashkortostan with 149 cases, the Kursk Region with 117 cases, the Orenburg Region with 113 cases, and the Belgorod Region with 56 cases.

There was 1 human case reported in the Tver Region.

Summary 1998

The annual total amounted to 2305 cases, 1229 cases more than in 1997.

There were 4 human cases compared to 10 in 1997.

3.30 Spain SPA

by Carlos Abellán García

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

There were no cases in the Spanish territory of North Africa, however, the last case in this area was less than two years ago to gain the status of rabies-free.

Summary 1998

The annual total amounted to 7 cases, all in the Spanish territory of North Africa. These were 2 cases more than in the previous year.

3.31 Slovak Republic SVK

by Jozef Sokol and Bohuslav Lovas

A total of 144 rabies cases in animals was reported in the Slovak Republic during "*This Quarter*". Of these were

120 (83.3%) wild animals (116 foxes, 1 badger, 2 stone martens, 1 lynx) and 24 (16.7% of total) domestic animals (8 dogs, 12 cats, 4 bovines).

An oral vaccination campaign of foxes against rabies was carried out in November 1998 in 7 districts of the Bratislava Region. The vaccine KAMARK was distributed by hand and a total of 12.000 vaccine baits was used.

Summary 1998

The annual total amounted to 414 cases, 155 cases more than in 1997.

3.32 Slovenia SVN

by Zoran Kovač

During "*This Quarter*", there was no rabies case diagnosed in Slovenia.

Summary 1998

A total of 14 rabies cases was recorded in 1998, 15 cases less than in the previous year.

3.33 Sweden SWE

The country remained rabies-free.

3.34 Switzerland SWI

by Urs Breitenmoser

The country remained rabies-free.

Surveillance

A total of 110 animals (87 foxes) were examined during "*This Quarter*" with negative results. Included were 2 bats (1 *Pipistrellus nathusii*, 1 *Myotis daubentoni*).

Summary 1998

By the end of the fourth quarter of 1998, Switzerland reached the status „rabies-free". The last recorded case of rabies had been a dog from Morocco delivered to the Swiss Rabies Centre for diagnosis on 21 December 1997, and reported to be positive for rabies on 7 January 1998. During the years 1997 and 1998, both, the surveillance and the vaccination campaigns (until spring 1998) had been continued in the areas where rabies had been endemic at the end of the epizootic. With Switzerland becoming rabies free, an epizootic came to an end that had lasted for more than 30 years - the first case of rabies was discovered in the north-eastern part of the country on 3 March 1967 - and had caused several human casualties and killed thousands of domestic and wild animals.

3.35 Turkey TUR

by Celal Özcan

During "*This Quarter*", 27 rabies cases in animals were reported in Turkey. All cases were in domestic animals: 23 dogs and 4 bovines.

In 14 infected provinces (II) 1 to 7 rabies cases were reported.

Summary 1998

The total of cases amounted to 128 (104 dogs, 19 bovines, 2 sheep, 1 cat, 1 horse, 1 donkey), 14 cases less than in the previous year.

27 provinces were affected. Istanbul, Izmir, Bursa reported 35, 26 and 10 cases respectively, all others between 1 and 9.

From the distribution of animals involved in the disease it can be seen: Turkey is the only European country with dog-mediated rabies.

3.36 Macedonia TYM

The country remained rabies-free.

3.37 Ukraine UKR

No data.

3.38 United Kingdom UNK

by W.J. Pollitt

The country remained rabies-free.

Surveillance 1998Third Quarter 1998

Reports of suspect rabies outside quarantine were investigated on 2 occasions during the third quarter of 1998. One case, that of a cat,

was resolved by veterinary staff and a further suspect case in a cat was resolved by laboratory investigation.

80 bats were examined for rabies during the period, all with negative results.

Fourth Quarter 1998

Three suspect cases, a dog, a fox and a cat, were resolved by laboratory investigation during this quarter.

38 bats were examined during this quarter, all with negative results.

4. MISCELLANEOUS ARTICLES

4.1 Review of Reported Rabies Case Data in Europe to the WHO Collaborating Centre Tübingen from 1977 to 1998

by W.W. Müller

WHO Collaborating Centre for Rabies Surveillance and Research
at the Federal Research Centre for Virus Diseases of Animals, Institute of Immunology,
P.O. Box 1149, D-72001 Tübingen, FRG

Every two years a review of the data material reported to the WHO Reference Centre, Tübingen, from the beginning in 1977 is given in this BULLETIN. The last review appeared in RABIES BULLETIN EUROPE 4/96. The **data are partly supplemented** if they were received late for the quarters to be published or when data could be improved upon. The contributors are again asked to see if they can further improve data of their country back to 1977.

In this issue the following analysis of the data material has been prepared:

TABLES OF QUARTERLY FIGURES

TABLE 4.1.1 (pages 13-17) summarizes a total of **22 years of rabies cases in animals (including bats and humans arranged according to quarters)**.

GRAPH WITH ANNUAL FIGURES

On a map of Europe (ANNEX 3) **continuous columns indicate the annual development of rabies** in Europe and individual countries over 22 years. Figures below 100 are given in digits.

Commentary:

In the summary report of issue 4/96 it was reported on the beginning of wildlife or fox-mediated rabies in Europe around 1939, on the effects of the biology of foxes and of the influence of rabies itself on the seasonality of the disease, and above all of

the impact of oral vaccination of foxes against rabies.

Any of the seasonal features are interfered with if oral vaccination is practised. An appropriate number of protected foxes in an evenly vaccinated area hinders the spread of the disease by interrupting the chain of infection. However, the density of the fox population greatly influences success and set-back of the control measure.

The latter fact has led to alternative practices in adjusting the method of oral vaccination such as vaccine baits per annum and area (km²) were to be increased compared to what was practised initially (15 vaccine baits per km² twice a year). The subject was dealt with in this BULLETIN in issues 1/95, pp 14-15, 4/95 pp 13-16, 1/96 pp 10-13 and 2/98 pp 9-12.

The year 1997 brought a drastic reduction of the total of reported rabies cases in Europe from 8083 (corrected FIGURE) in 1996 to 5076 (see TABLE 1 and the GRAPH in the ANNEX). As the European countries have different policies and financial resources of practising oral vaccination, the total of cases amounted in 1998 to 6250, an increase of 1174 (23%) compared to 1997. It is interesting to note that one country alone, the Russian Federation, though the largest in Europe and not practising oral vaccination extensively, recorded an increase of 1229 cases from 1997 to 1998. On the other hand the trend of

TABLE 4.1.1 continued

EUR										EUR																	
LOC. CODE	QUARTER				YEAR 1992	QUARTER				YEAR 1993	QUARTER				YEAR 1994	QUARTER				YEAR 1995	QUARTER				YEAR 1996	LOC. CODE	
	1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4			
ALB	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	ALB	
AUT	586	283	122	126	1117	103	100	199	273	675	104	50	31	69	254	40	17	15	23	95	9	1	2	2	14	AUT	
BEL	24	6	1	3	34	1	-	-	1	2	3	7	13	38	61	79	43	33	58	213	22	9	5	8	44	BEL	
BIH	7	1	-	-	8	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	BIH
BUL	-	-	-	22	22	3	-	-	-	3	5	1	2	5	13	4	1	1	4	10	11	3	3	15	32	BUL	
BYE	-	-	-	-	0	36	36	19	17	108	-	-	19	21	40	-	6	14	14	34	12	17	20	95	144	BYE	
CRO	57	27	27	82	193	119	36	46	157	358	191	95	82	172	540	168	56	65	130	419	230	66	67	125	488	CRO	
CZH	239	107	67	138	551	120	84	107	111	422	95	55	30	41	221	42	31	50	55	178	66	50	46	75	237	CZH	
DEN	-	-	-	-	0	-	1	-	-	1	-	-	3	-	3	1	-	-	-	1	-	-	-	-	-	0	DEN
DEU	536	270	310	309	1425	207	89	159	390	845	379	263	281	455	1378	376	204	152	124	856	65	26	29	33	153	DEU	
EST	30	19	21	40	110	42	32	40	46	160	31	28	28	21	108	12	19	27	16	74	23	24	23	29	99	EST	
FIN	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	FIN
FRA	589	325	186	185	1285	114	66	54	27	261	42	29	18	11	100	21	10	3	6	40	5	4	6	5	20	FRA	
FRY	18	23	19	79	139	40	12	17	14	83	20	8	5	13	46	20	12	10	48	90	24	23	17	28	92	FRY	
GRE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	GRE
HUN	240	107	190	355	892	461	170	220	272	1123	245	133	148	423	949	373	157	214	390	1134	586	247	264	260	1357	HUN	
ICE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	ICE
IRE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	IRE
ITA	11	4	6	2	23	6	29	19	28	82	10	14	6	6	36	5	2	2	2	11	1	-	-	-	1	ITA	
LTU	17	13	23	35	88	27	23	27	23	100	15	11	12	25	63	15	14	15	36	80	15	13	31	45	104	LTU	
LUX	1	-	-	1	2	-	1	-	-	1	-	-	-	1	1	2	4	-	9	15	11	4	2	-	-	17	LUX
LVA	35	33	32	25	125	25	31	63	75	194	65	78	56	79	278	60	58	50	54	222	34	62	50	40	186	LVA	
MLD	-	-	-	-	0	3	-	-	-	3	1	-	-	-	1	-	-	-	1	1	2	1	3	7	13	MLD	
NET	-	2	6	-	8	1	4	5	-	10	-	-	1	-	1	2	1	1	-	4	-	-	5	-	5	NET	
NOR	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	NOR
POL	645	367	776	1296	3084	802	572	693	578	2645	541	399	596	691	2227	558	420	375	620	1973	647	867	529	483	2526	POL	
POR	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	POR
ROM	17	14	10	14	55	22	26	17	12	77	12	8	6	6	32	16	6	4	4	30	12	9	5	16	42	ROM	
RUS	341	190	141	230	902	334	208	91	136	769	162	173	107	225	667	277	129	167	534	1107	765	438	227	354	1784	RUS	
SPA	5	4	1	2	12	3	2	-	-	5	-	-	2	1	3	4	1	-	1	6	-	-	-	1	1	1	SPA
SVK	136	39	52	94	321	113	99	109	168	489	170	151	96	147	564	63	47	57	99	266	96	82	63	103	344	SVK	
SVN	93	40	43	58	234	80	88	104	234	506	271	149	131	288	839	435	129	166	354	1084	165	51	17	14	247	SVN	
SWE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	SWE
SWI	39	42	20	26	127	13	28	56	78	175	100	44	45	36	225	14	5	2	2	23	2	2	1	1	6	SWI	
TUR	67	105	67	81	320	56	84	79	68	287	72	77	9	12	170	36	47	59	26	168	28	42	32	23	125	TUR	
TYM	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	TYM
UKR	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	UKR
UNK	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	1	-	1	-	2	UNK
TOT.	3733	2022	2120	3203	11078	2731	1821	2124	2708	9384	2534	1773	1727	2786	8820	2623	1419	1482	2610	8134	2831	2042	1447	1763	8083	TOT.	

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TABLE 4.1.1 continued

LOC. CODE	QUARTER				YEAR 1987	QUARTER				YEAR 1988	QUARTER				YEAR 1989	QUARTER				YEAR 1990	QUARTER				YEAR 1991	LOC. CODE	
	1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4			
ALB	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	ALB	
AUT	461	570	432	579	2042	681	457	320	328	1786	594	391	295	610	1890	908	572	406	628	2514	839	580	508	533	2460	AUT	
BEL	53	46	55	88	242	44	66	185	220	515	244	154	212	232	842	94	24	11	15	144	12	4	4	9	29	BEL	
BIH	3	6	2	16	27	23	12	3	22	60	20	7	5	14	46	14	8	19	34	75	14	11	1	-	26	BIH	
BUL	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	6	BUL	
BYE	-	-	-	-	0	-	-	-	-	0	-	-	-	196	196	33	37	58	47	175	39	20	44	-	103	BYE	
CRO	53	26	29	62	170	123	53	53	89	318	157	81	83	201	522	151	91	81	159	482	237	83	40	60	420	CRO	
CZH	400	458	335	337	1530	353	296	305	336	1290	499	423	282	259	1463	305	291	238	264	1098	451	272	186	188	1097	CZH	
DEN	1	11	32	4	48	-	-	-	-	0	-	-	-	-	1	-	-	-	-	0	-	-	-	-	-	0	DEN
DEU	1658	1230	1295	1301	5484	1211	820	1217	1771	5019	2010	1335	1612	1866	6823	1698	1078	1354	1444	5574	1230	884	779	706	3599	DEU	
EST	-	-	-	-	0	-	-	-	-	0	-	-	-	164	164	53	36	84	98	271	86	68	55	-	209	EST	
FIN	-	-	-	-	0	-	19	20	24	63	6	-	-	-	6	-	-	-	-	0	-	-	-	-	-	0	FIN
FRA	660	478	432	498	2068	559	408	472	784	2223	1252	940	942	1080	4214	1132	715	507	630	2984	656	512	516	482	2166	FRA	
FRY	39	28	15	32	114	37	14	14	25	90	27	13	18	23	81	4	9	9	11	33	21	9	6	18	54	FRY	
GRE	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	GRE
HUN	568	276	241	381	1466	411	157	236	372	1176	350	138	224	349	1061	366	153	240	333	1092	325	139	184	233	881	HUN	
ICE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	ICE
IRE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	IRE
ITA	-	-	-	-	0	-	-	2	19	21	38	9	6	2	55	-	-	-	-	0	-	-	1	3	4	4	ITA
LTU	-	-	-	-	0	-	-	-	-	0	-	-	-	101	101	31	14	33	51	129	20	12	-	-	-	32	LTU
LUX	11	4	4	4	23	2	1	-	1	4	5	8	47	79	139	40	13	5	6	64	2	4	2	8	16	LUX	
LVA	-	-	-	-	0	-	-	-	-	0	-	-	-	247	247	77	79	72	78	306	-	-	-	283	283	LVA	
MLD	-	-	-	-	0	-	-	-	-	0	-	-	-	9	9	3	1	4	5	13	9	2	7	-	-	18	MLD
NET	-	7	70	9	86	-	17	30	5	52	1	7	10	5	23	-	4	15	3	22	-	-	12	-	12	NET	
NOR	-	-	1	2	3	-	-	-	-	0	-	-	-	-	0	-	1	-	-	1	-	-	-	-	-	0	NOR
POL	317	345	496	528	1686	424	231	401	462	1518	457	293	445	696	1891	664	317	461	603	2045	508	378	642	759	2287	POL	
POR	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	POR
ROM	18	10	13	9	50	11	5	8	17	41	9	5	3	10	27	8	8	10	27	53	11	14	9	28	62	ROM	
RUS	-	-	-	-	0	-	-	-	-	0	-	-	-	1635	1635	537	365	218	334	1454	700	205	149	333	1387	RUS	
SPA	1	2	6	1	10	2	-	2	-	4	-	1	4	1	6	-	1	5	-	6	-	2	2	4	8	8	SPA
SVK	65	46	58	84	253	102	53	55	80	290	70	47	54	79	250	76	54	67	90	287	82	64	56	60	262	SVK	
SVN	42	53	76	117	288	164	128	176	337	805	356	175	108	122	761	84	48	59	55	246	68	50	30	40	188	SVN	
SWE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	SWE
SWI	24	26	24	25	99	40	11	28	16	95	13	8	29	10	60	5	5	4	11	25	25	29	24	27	105	SWI	
TUR	354	242	199	210	1005	207	220	137	146	710	162	118	157	147	584	153	165	138	127	583	89	142	108	89	428	TUR	
TYM	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	TYM
UKR	-	-	-	2	2	-	-	-	-	0	-	-	-	1280	1280	389	194	250	541	1374	234	116	138	-	488	UKR	
UNK	-	1	-	-	1	-	1	-	1	2	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	UNK
TOT.	4728	3865	3816	4289	16698	4394	2969	3664	5055	16082	6270	4154	4536	9417	24377	6825	4283	4348	5594	21050	5658	3600	3503	3869	16630	TOT.	

TABLE 4.1.1 continued

EUR						EUR						EUR															
LOC. CODE	QUARTER				YEAR 1982	QUARTER				YEAR 1983	QUARTER				YEAR 1984	QUARTER				YEAR 1985	QUARTER				YEAR 1986	LOC. CODE	
	1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4			
ALB	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	ALB	
AUT	259	290	154	259	962	406	375	264	329	1374	401	441	303	277	1422	385	524	428	407	1744	367	348	297	375	1387	AUT	
BEL	135	139	128	273	675	208	119	80	109	516	129	87	112	177	505	91	49	137	169	446	116	62	80	84	342	BEL	
BIH	-	-	-	17	17	42	30	5	14	91	12	7	4	18	41	11	4	5	8	28	8	11	2	8	29	BIH	
BUL	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	BUL	
BYE	12	18	22	26	78	17	13	10	10	50	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	BYE	
CRO	260	57	33	78	428	146	104	47	212	509	366	190	104	191	851	233	95	63	135	526	138	52	20	57	267	CRO	
CZH	473	410	325	445	1653	600	437	357	427	1821	669	493	503	441	2106	510	391	277	282	1460	308	262	294	381	1245	CZH	
DEN	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	1	9	10	-	3	97	5	105	DEN	
DEU	2242	1646	1974	2645	8507	2754	1866	2014	2529	9163	2662	1931	2180	2298	9071	1989	1747	2197	2337	8270	1829	1391	1647	1963	6830	DEU	
EST	2	2	5	4	13	1	3	5	4	13	-	-	-	1	1	-	-	-	1	1	-	-	-	1	1	EST	
FIN	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	1	1	-	-	-	-	0	FIN	
FRA	1023	874	771	738	3406	802	464	637	760	2663	1006	687	551	627	2871	579	425	505	504	2013	688	602	605	570	2465	FRA	
FRY	131	34	16	41	222	71	21	17	33	142	67	30	21	68	186	40	23	23	12	98	31	9	10	36	86	FRY	
GRE	1	-	-	-	1	1	-	-	-	1	-	-	-	-	0	-	1	-	-	-	1	-	-	-	-	0	GRE
HUN	601	246	187	339	1373	413	129	174	260	976	465	156	183	371	1175	361	157	164	351	1033	368	172	240	484	1264	HUN	
ICE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	ICE
IRE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	IRE
ITA	112	82	88	63	345	93	115	127	113	448	128	141	54	31	354	49	45	25	3	122	10	17	2	-	29	ITA	
LTU	6	5	9	9	29	5	3	5	5	18	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	LTU	
LUX	33	24	41	107	205	35	15	20	36	106	36	9	9	10	64	5	10	24	28	67	10	13	47	67	137	LUX	
LVA	5	6	7	9	27	5	13	7	9	34	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	LVA	
MLD	4	2	2	2	10	3	4	2	2	11	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	MLD	
NET	-	-	-	-	0	1	-	1	13	15	42	16	2	5	65	7	9	-	-	16	-	-	-	1	1	NET	
NOR	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	NOR	
POL	143	99	195	190	627	138	96	259	343	836	382	284	395	455	1516	258	161	349	306	1074	227	145	306	409	1087	POL	
POR	-	-	-	-	0	-	-	-	-	0	-	-	1	-	1	-	-	-	-	-	0	-	-	-	-	0	POR
ROM	32	20	20	19	91	23	14	9	15	61	90	16	17	18	141	22	25	8	23	78	25	24	12	12	73	ROM	
RUS	95	44	35	72	246	61	34	25	86	206	-	-	-	-	0	-	-	-	2	2	-	-	-	-	0	RUS	
SPA	1	-	-	-	1	5	2	2	1	10	-	-	1	3	4	7	-	7	3	17	2	2	1	5	10	SPA	
SVK	77	50	45	64	236	59	29	71	110	269	133	70	46	89	338	64	41	40	45	190	85	61	33	66	245	SVK	
SVN	283	174	77	74	608	122	96	34	155	407	216	179	64	66	525	67	36	21	57	181	56	18	13	30	117	SVN	
SWE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	SWE
SWI	381	305	258	285	1229	213	204	269	378	1064	370	269	179	110	928	87	96	140	89	412	76	46	41	35	198	SWI	
TUR	503	645	529	495	2172	483	511	549	389	1932	337	426	381	316	1460	334	336	325	289	1284	271	348	311	336	1266	TUR	
TYM	-	1	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	TYM
UKR	92	61	88	98	339	61	47	46	112	266	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	UKR	
UNK	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	1	-	-	1	UNK
TOT.	6907	5234	5009	6352	23502	6768	4744	5036	6454	23002	7511	5432	5110	5572	23625	5099	4175	4739	5061	19074	4615	3586	4059	4925	17185	TOT.	

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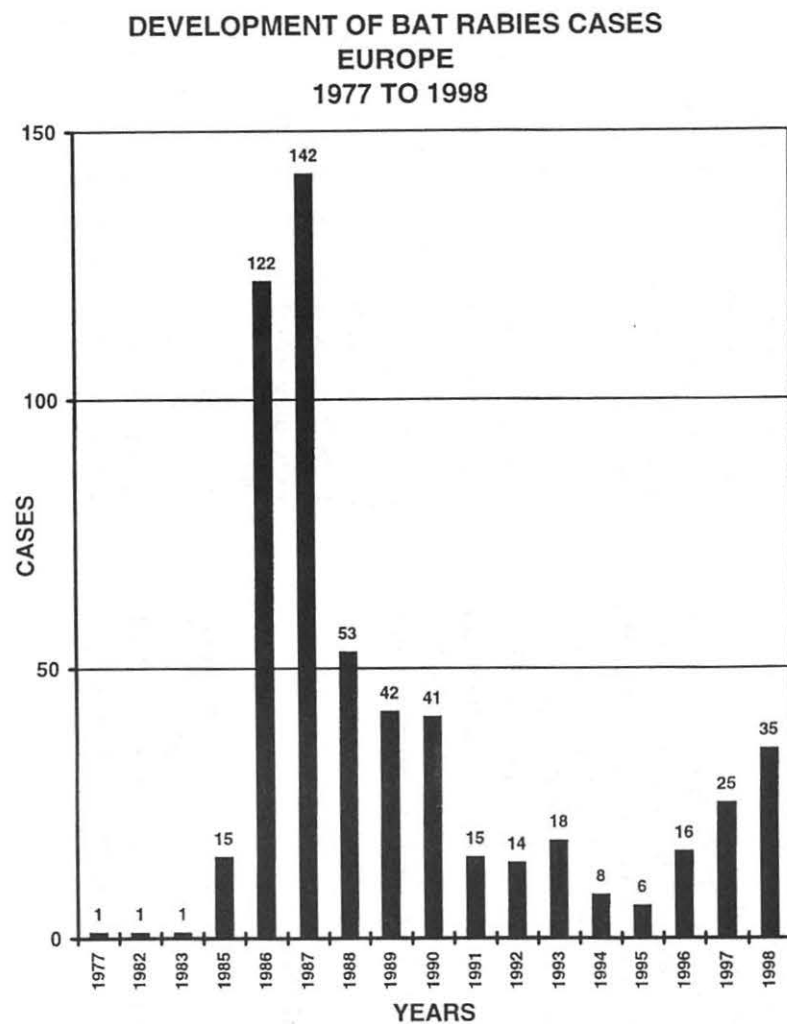
TABLE 4.1.1

EUR											EUR																
LOC. CODE	QUARTER				YEAR 1977	QUARTER				YEAR 1978	QUARTER				YEAR 1979	QUARTER				YEAR 1980	QUARTER				YEAR 1981	LOC. CODE	
	1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4		1	2	3	4			
ALB	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	ALB	
AUT	852	683	508	1015	3058	1136	1139	868	901	4044	789	529	404	296	2018	250	288	167	111	816	197	209	188	185	779	AUT	
BEL	36	13	6	13	68	25	15	13	8	61	8	5	4	8	25	11	23	2	11	47	24	23	36	91	174	BEL	
BIH	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	BIH
BUL	-	-	-	-	0	1	-	-	-	1	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	BUL
BYE	-	-	-	-	0	25	7	14	8	54	20	27	22	29	98	28	18	15	14	75	16	8	10	14	48	BYE	
CRO	-	4	-	5	9	-	-	-	23	23	16	29	28	41	114	55	16	19	57	147	87	30	28	42	187	CRO	
CZH	113	87	127	101	428	179	132	150	157	618	120	166	156	221	663	417	274	208	227	1126	248	235	208	321	1012	CZH	
DEN	-	-	3	3	6	14	24	69	56	163	37	41	46	41	165	22	11	2	2	37	2	1	-	-	3	DEN	
DEU	2388	1407	1450	1493	6738	1423	966	1277	1355	5021	1640	1314	1477	2141	6572	2549	1790	2109	2213	8661	2097	1507	1790	1933	7327	DEU	
EST	-	-	-	-	0	5	-	12	5	22	2	2	4	6	14	6	3	3	5	17	4	3	3	3	13	EST	
FIN	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	FIN
FRA	572	356	354	386	1668	384	289	212	317	1202	533	394	344	435	1706	589	381	275	375	1620	552	412	550	827	2341	FRA	
FRY	7	9	-	100	116	-	-	-	248	248	87	55	30	40	212	87	44	31	33	195	78	23	6	56	163	FRY	
GRE	5	2	-	2	9	1	-	1	-	2	-	-	-	2	2	-	-	-	-	0	-	-	3	-	3	GRE	
HUN	221	166	99	250	736	629	169	192	311	1301	546	159	222	355	1282	381	142	191	204	918	314	122	194	372	1002	HUN	
ICE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	ICE
IRE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	IRE
ITA	3	26	39	29	97	83	82	39	46	250	30	28	17	4	79	3	2	2	5	12	55	120	113	79	367	ITA	
LTU	-	-	-	-	0	-	-	12	13	25	1	2	8	17	28	7	3	8	6	24	2	1	5	5	13	LTU	
LUX	10	6	9	9	34	22	16	16	8	62	3	3	4	13	23	8	1	1	13	23	16	18	25	27	86	LUX	
LVA	-	-	-	-	0	4	3	3	5	15	3	5	4	7	19	14	6	12	9	41	8	4	4	7	23	LVA	
MLD	-	-	-	-	0	4	2	7	7	20	10	5	4	3	22	3	6	5	3	17	7	2	2	3	14	MLD	
NET	1	-	1	-	2	-	-	-	-	0	-	1	-	-	1	-	-	-	-	0	-	-	-	-	-	0	NET
NOR	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	1	15	-	1	17	1	-	-	-	-	1	NOR
POL	297	252	395	343	1287	335	197	251	356	1139	215	189	287	350	1041	275	183	224	263	945	198	67	81	103	449	POL	
POR	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	POR
ROM	33	20	11	49	113	-	-	-	-	0	35	23	15	14	87	124	72	69	70	335	26	20	50	32	128	ROM	
RUS	-	-	-	-	0	191	97	89	147	524	125	100	63	98	386	124	72	69	70	335	52	37	21	60	170	RUS	
SPA	-	1	4	1	6	1	-	-	2	3	-	-	1	-	1	1	-	-	-	1	1	-	-	-	-	1	SPA
SVK	55	47	29	36	167	43	30	22	34	129	23	35	37	29	124	18	27	25	16	86	24	19	17	28	88	SVK	
SVN	3	-	-	7	10	-	-	-	33	33	22	36	14	18	90	82	142	123	246	593	521	805	216	224	1766	SVN	
SWE	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	0	-	-	-	-	-	0	SWE
SWI	330	207	211	293	1041	265	204	232	351	1052	365	312	318	375	1370	376	250	277	287	1190	383	353	349	328	1413	SWI	
TUR	-	-	889	316	1205	313	410	387	372	1482	517	454	316	308	1595	507	486	483	612	2088	497	638	587	538	2260	TUR	
TYM	7	3	-	8	18	-	-	-	9	9	1	-	-	1	2	-	-	-	-	0	-	-	-	-	-	0	TYM
UKR	-	-	1	1	2	80	78	100	155	413	181	123	103	83	490	104	70	55	78	307	53	43	36	68	200	UKR	
UNK	1	-	-	1	2	-	-	-	1	1	-	-	-	-	0	-	-	-	-	0	-	-	1	-	-	1	UNK
TOT.	4934	3289	4136	4462	16821	5163	3860	3966	4928	17917	5294	4014	3913	4921	18142	5953	4276	4321	4875	19425	5463	4700	4523	5346	20032	TOT.	

TABLE 4.1.1 continued

EUR					EUR						
LOC. CODE	QUARTER				YEAR 1997	QUARTER				YEAR 1998	LOC. CODE
	1	2	3	4		1	2	3	4		
ALB	-	-	-	-	0	-	-	-	-	0	ALB
AUT	5	2	1	-	8	1	1	-	1	3	AUT
BEL	6	1	-	2	9	-	1	-	-	1	BEL
BIH	-	-	-	-	0	-	-	-	-	0	BIH
BUL	5	8	1	1	15	4	4	-	3	11	BUL
BYE	26	26	-	10	62	27	34	21	15	97	BYE
CRO	174	74	54	127	429	147	38	56	147	388	CRO
CZH	117	59	29	33	238	29	16	10	30	85	CZH
DEN	-	1	6	1	8	1	2	10	2	15	DEN
DEU	32	16	13	25	86	33	15	21	39	108	DEU
EST	26	47	44	33	150	40	66	36	28	170	EST
FIN	-	-	-	-	0	-	-	-	-	0	FIN
FRA	2	-	-	1	3	2	1	-	1	4	FRA
FRY	43	23	12	20	98	35	11	12	29	87	FRY
GRE	-	-	-	-	0	-	-	-	-	0	GRE
HUN	176	97	124	174	571	210	91	106	147	554	HUN
ICE	-	-	-	-	0	-	-	-	-	0	ICE
IRE	-	-	-	-	0	-	-	-	-	0	IRE
ITA	-	-	-	-	0	-	-	-	-	0	ITA
LTU	19	19	56	86	180	39	41	57	86	223	LTU
LUX	-	-	1	1	2	-	-	-	-	0	LUX
LVA	30	47	41	23	141	28	53	86	43	210	LVA
MLD	5	2	5	10	22	12	7	6	12	37	MLD
NET	-	1	8	4	13	1	1	4	1	7	NET
NOR	-	-	-	-	0	-	-	-	-	0	NOR
POL	515	364	283	333	1495	380	252	357	343	1332	POL
POR	-	-	-	-	0	-	-	-	-	0	POR
ROM	5	15	6	8	34	23	10	3	14	50	ROM
RUS	258	198	190	430	1076	568	444	512	781	2305	RUS
SPA	-	1	3	1	5	3	4	-	-	7	SPA
SVK	108	35	54	62	259	87	73	110	144	414	SVK
SVN	11	5	11	2	29	7	4	3	-	14	SVN
SWE	-	-	-	-	0	-	-	-	-	0	SWE
SWI	-	-	-	1	1	-	-	-	-	0	SWI
TUR	19	47	43	33	142	34	38	29	27	128	TUR
TYM	-	-	-	-	0	-	-	-	-	0	TYM
UKR	-	-	-	-	0	-	-	-	-	0	UKR
UNK	-	-	-	-	0	-	-	-	-	0	UNK
TOT.	1582	1088	985	1421	5076	1711	1207	1439	1893	6250	TOT.

FIGURE 4.1.1



4th Quarter: October-December 1998

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recording a decrease of cases due to oral vaccination continues.

Up to date, 4 countries can be reported in Europe which became rabies-free due to oral vaccination: Finland during the first quarter 1991, the Netherlands during the second quarter 1991, Italy during the fourth quarter 1997, and during "*This Quarter*" Switzerland. However, there are new candidates, for example, Austria, Belgium, France, the Grand Duchy of Luxembourg, etc.

BAT RABIES

Of the total number of bat rabies cases recorded from 1977 to 1998 the cases have been singled out by **country** (TABLE 4.1.2) and **year** (FIGURE 4.1.1, page 17).

TABLE 4.1.2

<u>Country</u>	<u>Number of Cases</u>
Czech Republic	1
Denmark	194
France	5
Germany	97
Netherlands	233
Poland	8
Spain	8
Slovakia	2
Switzerland	2
Ukraine	4
United Kingdom	1
<hr/>	
Total	555

Commentary

Bat rabies has its own cycle. The epizootic in Europe occurs mainly in areas without fox-mediated rabies. Within the

different bat populations approx. 95% of all cases occur in the species *Eptesicus serotinus*. Unfortunately, the species designation is usually not supplied during reporting.

Until recently, there was no evidence that the European bat rabies virus would occur in terrestrial animals as contact between the insectivorous bats and domestic or wild mammals must be considered unusual. During the third and fourth quarters 1998 3 cases of sheep rabies in Denmark were diagnosed for the first time to be infected with the European Bat Lyssavirus strain EBL1.

For the distribution of cases the map produced for the summary article in issue 4/96 of this BULLETIN still stands.

TABLE OF HUMAN RABIES CASES

Unfortunately, **human rabies cases are not reported regularly** by all countries participating in the European surveillance. The cases received have been singled out by year and country (see TABLE 4.1.3, page 19).

Commentary

In countries of western and central Europe a tendency can be noticed that hardly any indigenously acquired human cases occur.

The 29 cases imported to Europe indicate a risk for travellers in other rabies infected continents.

TABLE 4.1.3

Human Rabies Cases in Europe 1977-1998

Country	Number of Cases	Imported Cases	Year
Austria	1		1979
Belarus	2		1989, 1993
Belgium	2	2 ¹⁾	1981, 1988
Bulgaria	1		1994
Czech Republic	1	1 ²⁾	1989
Estonia	4		1984, 1985, 1986, 1989
Finland	1 ³⁾		1985
France	10	10 ⁴⁾	1979, 1980, 1982, 1991, 1992, 1994, 1996(3), 1997
Germany	5	3 ⁵⁾	1978 ⁵⁾ , 1981, 1986 ⁵⁾ , 1990, 1996 ⁵⁾
Hungary	6	1 ⁶⁾	1978 ⁶⁾ , 1985(2), 1991, 1994(2)
Italy	1	1 ⁷⁾	1996 ⁷⁾
Latvia	1		1993
Lithuania	4		1992(2), 1993, 1997
Poland	7	1 ⁸⁾	1977, 1979(2), 1980, 1983 ⁸⁾ , 1984, 1985
Romania	40		'77(3), '83(2), '84, '85(4), '86(4), 87(4), '88(3), '89(4), 90(4), '91(8), '92(3)
Russia, European part	81		1985, 1989(6), 1990(11), 1991(16), 1992(9), 1993(5), 1994(4), 1995(10), 1996(5), 1997(10), 1998(4)
Slovakia	1		1990
Switzerland	3		1977
Turkey	40		1977(34), 1978(2), 1979(3), 1991
Ukraine	7		1977, 1989(2), 1990(4)
United Kingdom	9	9 ⁹⁾	1977(2), 1978, 1981, 1986, 1987, 1988(2), 1996
Yugoslavia	9	1 ¹⁰⁾	1977(2), 1978(2), 1979(2), 1980(2), 1989 ¹⁰⁾
Totals	236	29	

1) Imported from Ruanda and Zaire

2) Imported from Vietnam

3) Possibly of bat origin, but until now no confirmed bat rabies in the country

4) Imported from Tunisia, Egypt, Senegal, Mexico, Algeria (2), Madagascar, India

5) Imported from Egypt, India and Sri Lanka

6) Imported from Nigeria

7) Imported from Nepal

8) Imported from Sudan

9) Imported from India (4), Pakistan (2), Zambia, Bangladesh, Nigeria

10) Imported from Algeria

4.2 Animated Visualisation of the Rabies Epizootic in Europe since 1977

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The transmission of silvatic rabies between neighbouring fox territories and the near-extinction of the vector species by the disease, cause characteristic patterns of the spatial and temporal development of the epizootic. This pattern may be modified by geography and rabies control strategies. Since control strategies are often planned and their success is often controlled within relatively small administrative units, the large scale dependencies of obvious foci is not always recognised. Although the RABIES BULLETIN EUROPE (RBE) reports rabies data for many countries on a regular basis, it is not easy to interpret the information over longer time periods. A simple movie-like animation, projecting consecutive maps in high speed, may be of considerable help.

In the course of work related to public information campaigns on rabies in Switzerland, the Swiss Rabies Centre has produced animated visualisations of the rabies epizootic for Western and Central Europe and a more detailed version for Switzerland respectively. The European version, which is subject of this note, is based on the data published in the RBE since the first quarter 1977. Since the main objective of the work was a visualisation rather than data analyses, we chose to digitize the maps in the ANNEX of each issue of the RBE rather than using a database with locational information for each case, what would have caused considerably more work. Our method has three main disadvantages: a) we are not able to differentiate between species, b) we cannot differentiate single cases, when they occur within clusters of points overlapping

each other on the map, c) the maximum temporal resolution is restricted to the 3-month reporting period of the RBE.

Each quarterly map has been digitised by means of a desktop flatbed scanner with a resolution of 400 dpi. The scanned images had to be georeferenced with 60-70 reference points in order to fit a geographic coordinate system. We used the Geographic Information System ArcView® 3.1 (ESRI 1998) for this task. The georeferenced images could be vectorised thereafter and are ready to be overlaid on any geographic base map at any geographic projection. Within the Geographic Information System we produced new maps with identical extents for each quarter from 4/1977 to 2/1998, each showing cases for the last twelve months. These maps have been exported to the JPEG-format and combined into a GIF-movie with the help of a GIF-animator software.

The complete animation is downloadable from the homepage of the Swiss Rabies Centre (<http://www.cx.unibe.ch/ivv/rabies.htm>). You can use the files the way you like, if you cite the origin of the data as shown on the download-page.

The work has been financed by the Swiss Federal Office for Education and Science (No 97.0586, FAIR CT97-3515).

4.3 Handling of Bat Rabies in the USA in Human Rabies Prevention - United States, 1999 Recommendations of the Advisory Committee on Immunization Practices (ACIP)

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The Report

A report in *Morbidity and Mortality Weekly Report (MMWR)* published by Centers for Disease Control and Prevention of the U.S. Department of Health and Human Services in January 08, 1999/48 (RR-1); 1-21 refers to *Human Rabies Prevention - United States, 1999*. It has the following summary:

„These revised recommendations of the Advisory Committee on Immunization Practices update the previous recommendations on rabies prevention (MMWR 1991; 40 [No.RR-3]:1-14) to reflect the current status of rabies and antirabies biologics in the United States. This report includes new information about a human rabies vaccine approved for U.S. use in 1997, recommendations regarding exposure to bats, recommendations regarding an observation period for domestic ferrets, and changes in the local administration of rabies immune globulin.”

In an introduction it is said that there were in 1950, for example, 4979 cases of rabies among dogs, and 18 cases among humans. Between 1980 and 1997, 95-247 cases were reported each year among dogs, and on average only two human cases were reported each year in which rabies was attributable to variants of the virus associated with indigenous dogs.

Of 36 human cases from 1980 through 1997 21 (58%) have been associated with bat variants, 12 (33%) of these appear to have

been related to rabid animals outside the United States.

The report gives details on the licensed rabies biologics in the United States for human use (3 vaccines, 2 types of rabies immune globulin), on the indications and use of pre-exposure and post-exposure vaccination, the epidemiological importance of the different animals of the United States involved in rabies, of vaccination and serologic testing, of possible adverse reactions after vaccination and application of immune globulins, and on precautions and contraindications for immunosuppressed persons. All statements refer to 117 references cited.

The editors of the *RABIES BULLETIN EUROPE* have singled out the recommendations on bat rabies of the report because of the wider occurrence and higher incidence of cases in the USA (an article of the *JAVMA*, Vol. 211, No. 12, 1997 reports 741 bat rabies cases in 1996) compared to Europe (16 cases in 1996) and therefore a greater experience in handling the disease.

Handling of Bat Rabies in the USA

Rabid bats have been documented in the 49 continental states, and bats are increasingly implicated as important wildlife reservoirs for variants of rabies virus transmitted to humans. Recent epidemiologic data suggest that transmission of rabies virus can occur from minor, seemingly unimportant, or unrecognized bites from bats. The limited injury inflicted by a bat bite (in contrast to lesions caused by terrestrial carnivores) and an often

inaccurate recall of the exact exposure history might limit the ability of health-care providers to determine the risk of rabies resulting from an encounter with a bat. Human and domestic animal contact with bats should be minimized, and bats should never be handled by untrained and unvaccinated persons or be kept as pets.

In all instances of potential human exposures involving bats, the bat in question should be safely collected, if possible, and submitted for rabies diagnosis. Rabies post-exposure prophylaxis is recommended for all persons with bite, scratch, or mucous membrane exposure to a bat, unless the bat is available for testing and is negative for evidence of rabies. Post-exposure prophylaxis might be appropriate even if a bite, scratch, or mucous membrane exposure is not apparent when there is reasonable probability that such exposure might have occurred.

On the basis of the available but sometimes conflicting information from the 21 bat-associated cases of human rabies reported since 1980, in 1-2 cases, a bite was reported; in 10-12 cases, apparent contact occurred but no bite was detected; and in 7-10 cases, no exposure to bats was reported, but an undetected or unreported bat bite remains the most plausible hypothesis. Clustering of bat-associated human cases within the same household has never been reported.

Consequently, post-exposure prophylaxis should be considered when direct contact between a human and a bat has occurred, unless the exposed person can be certain a bite, scratch, or mucous membrane exposure did not occur. In instances in which a bat is found indoors and there is no history of bat-human contact, the likely effectiveness of post-exposure prophylaxis must be balanced against the low risk such exposures appear to present. In this setting, post-exposure prophylaxis can be considered for persons who were in the same room as the bat and who might be unaware that a bite or direct contact had occurred (e.g., a sleeping person awakens to find a bat in the room or an adult witnesses a bat in the room with a previously unattended child, mentally

disabled person, or intoxicated person) and rabies cannot be ruled out by testing the bat. Post-exposure prophylaxis would not be warranted for other household members.

RBE's editor note:

What can be said on some of the differences and similarities of the USA and European bat rabies viruses:

1. The types of bat involved in both continents are insectivorous, however, the main carrier and other bats involved are of different species.
2. The virus in the USA is the Serotype 1 of the Lyssavirus Group, in Europe the Serotype 5 (Genotypes European Bat Lyssavirus 1 (EBL1) and 2 (EBL2)).
3. In the USA the virus is distributed throughout the continent, in Europe predominantly in coastal areas.
4. In the USA it is reported for some time that sporadic infection of terrestrial animals (and humans) occur. In Europe only recently (1998) the EBL1 virus was identified in Denmark in 3 sheep. However, two humans were reported from the Ukraine (EBL1) and Finland (EBL2) in 1985.

TABLE 5.1

EUR		EUROPE		4/98		RABIES CASES							1.10.98 - 31.12.98		
LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL
CODE	NAME	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS		
ALB	ALBANIA	*						0						0	0
AUT	AUSTRIA							0	1	-	-	-	-	1	1
BEL	BELGIUM	*						0						0	0
BIH	BOSNA I HERCEGOWIN**							0						0	0
BUL	BULGARIA							0					3	3	3
BYE	BELARUS	1)	1	3	1	-	-	5					10	10	15
CRO	CROATIA		8	2	2	1	5	18	123	-	2	-	4	129	147
CZH	CZECH REPUBLIC							0	28	-	-	2	-	30	30
DEN	DENMARK	2)	-	-	-	-	2	2						0	2
DEU	FED.REP.OF GERMANY		-	-	2	-	-	2	30	1	1	4	1	37	39
EST	ESTONIA		2	4	2	-	-	8	9	-	-	1	10	20	28
FIN	FINLAND	*						0						0	0
FRA	FRANCE		-	1	-	-	-	1						0	1
FRY	FED.REP.OF YUGOSLA		3	8	-	-	2	13	16	-	-	-	-	16	29
GRE	GREECE	*						0						0	0
HUN	HUNGARY		6	29	7	3	-	45	101	-	-	-	1	102	147
ICE	ICELAND	*						0						0	0
IRE	IRELAND	*						0						0	0
ITA	ITALY	*						0						0	0
LTU	LITHUANIA		2	4	23	-	1	30	24	-	3	-	29	56	86
LUX	LUXEMBOURG	*						0						0	0
LVA	LATVIA		6	7	3	1	-	17	19	-	-	-	7	26	43
MLD	MOLDOVA		1	2	4	-	-	7	5	-	-	-	-	5	12
NET	NETHERLANDS							0					1	1	1
NOR	NORWAY	*						0						0	0
POL	POLAND		4	10	60	-	1	75	205	1	11	-	51	268	343
POR	PORTUGAL	*						0						0	0
ROM	ROMANIA		-	4	4	-	-	8	5	-	-	-	1	6	14
RUS	RUSSIAN FEDERATION		136	99	209	20	12	483	275	-	3	-	19	297	781
SPA	SPAIN	*						0						0	0
SVK	SLOVAK REPUBLIC		8	12	4	-	-	24	116	1	2	-	1	120	144
SVN	SLOVENIA	*						0						0	0
SWE	SWEDEN	*						0						0	0
SWI	SWITZERLAND + LIEC*							0						0	0
TUR	TURKEY		23	-	4	-	-	27						0	27
TYM	MAKEDONIJA	*						0						0	0
UKR	UKRAINE	**						0						0	0
UNK	UNITED KINGDOM	*						0						0	0
TOTAL			200	185	325	25	23	765	957	3	22	7	138	1127	1893
PER CENT			10.6	9.8	17.2	1.3	1.2	40.4	50.6	0.2	1.2	0.4	7.3	59.5	100.0

* NO CASES ** NO DATA 1) NO DATA FOR NOVEMBER AND DECEMBER 2) SHEEP INFECTED BY BAT RABIES VIRUS

TABLE 5.2

EUR		EUROPE						1998						RABIES CASES		1. 1.98 - 31.12.98	
LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL		
CODE	NAME	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL	
ALB	ALBANIA	*						0						0		0	
AUT	AUSTRIA							0	3	-	-	-	-	3		3	
BEL	BELGIUM							0	1	-	-	-	-	1		1	
BIH	BOSNA I HERCEGOWIN**							0						0		0	
BUL	BULGARIA							0	-	-	-	-	11	11		11	
BYE	BELARUS	1)	23	10	6	4	-	1	44	25	-	-	-	28	53	97	
CRO	CROATIA		15	10	4	1	8	-	38	337	-	6	-	7	350	388	
CZH	CZECH REPUBLIC		1	3	-	-	-	-	4	77	1	-	2	1	81	85	
DEN	DENMARK	2)	-	-	-	-	3	-	3	-	-	-	-	12	12	15	
DEU	FED.REP.OF GERMANY		2	2	2	1	1	-	8	86	1	3	6	4	100	108	
EST	ESTONIA		17	26	3	-	1	-	47	78	2	2	2	39	123	170	
FIN	FINLAND	*						0						0		0	
FRA	FRANCE		1	1	-	-	-	-	2	1	-	-	-	1	2	4	
FRY	FED.REP.OF YUGOSLA		7	16	-	-	2	-	25	59	-	-	2	1	62	87	
GRE	GREECE	*						0						0		0	
HUN	HUNGARY		23	69	20	5	1	-	118	426	-	5	4	1	436	554	
ICE	ICELAND	*						0						0		0	
IRE	IRELAND	*						0						0		0	
ITA	ITALY	*						0						0		0	
LTU	LITHUANIA		11	19	56	3	1	-	90	71	3	12	2	45	133	223	
LUX	LUXEMBOURG	*						0						0		0	
LVA	LATVIA		23	31	9	1	-	-	64	96	11	2	1	36	146	210	
MLD	MOLDOVA		4	5	5	-	-	-	14	23	-	-	-	-	23	37	
NET	NETHERLANDS							0						7	7	7	
NOR	NORWAY	*						0						0		0	
POL	POLAND		35	56	118	-	1	-	210	928	6	43	4	141	1122	1332	
POR	PORTUGAL	*						0						0		0	
ROM	ROMANIA		3	9	5	-	18	-	35	13	-	-	-	2	15	50	
RUS	RUSSIAN FEDERATION		473	285	522	36	73	20	1409	806	6	14	1	65	892	4 2305	
SPA	SPAIN	3)	7	-	-	-	-	-	7					0		7	
SVK	SLOVAK REPUBLIC		28	34	5	-	-	-	67	336	1	6	1	3	347	414	
SVN	SLOVENIA							0		14	-	-	-	14		14	
SWE	SWEDEN	*						0						0		0	
SWI	SWITZERLAND + LIEC*							0						0		0	
TUR	TURKEY		104	1	19	1	2	1	128					0		128	
TYM	MAKEDONIJA	*						0						0		0	
UKR	UKRAINE	**						0						0		0	
UNK	UNITED KINGDOM	*						0						0		0	
TOTAL			777	577	774	52	111	22	2313	3380	31	93	25	404	3933	4 6250	
PER CENT			12.4	9.2	12.4	0.8	1.8	0.4	37.0	54.1	0.5	1.5	0.4	6.5	62.9	0.1 100.0	

* NO CASES ** NO DATA 1) NO DATA FOR NOVEMBER AND DECEMBER 2) SHEEP INFECTED BY BAT RABIES VIRUS 3) NORTH AFRICA

TABLE 5.3

EUR		EUROPE		4/98		RABIES CASES 'OTHER ANIMAL SPECIES'								1.10.98 - 31.12.98		
LOCATION		OTH.DOM.A	OTHER WILD ANIMALS											UNSPECIFIED	TOTAL	
CODE	NAME	PIG	WOLF	RACCOON DOG	WILD CAT	LYNX	OTH.W. CARNIV	WILD BOAR	HEDGE HOG	INSECT BAT	HAMSTER	NORVEG RAT	WILD RABBIT	OTHER		
BUL	BULGARIA	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
BYE	BELARUS	-	-	-	-	-	-	-	-	-	-	-	-	10	-	10
CRO	CROATIA	-	-	-	1	-	-	-	-	-	-	-	3	-	-	4
DEU	FED.REP.OF GERMAN	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
EST	ESTONIA	-	-	10	-	-	-	-	-	-	-	-	-	-	-	10
HUN	HUNGARY	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
LTU	LITHUANIA	-	-	29	-	-	-	-	-	-	-	-	-	-	-	29
LVA	LATVIA	-	1	6	-	-	-	-	-	-	-	-	-	-	-	7
NET	NETHERLANDS	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
POL	POLAND	-	-	50	-	-	-	-	-	1	-	-	-	-	-	51
ROM	ROMANIA	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
RUS	RUSSIAN FEDERATIO	7	2	6	-	-	5	1	1	-	1	2	-	1	-	26
SVK	SLOVAK REPUBLIC	-	-	-	-	1	-	-	-	-	-	-	-	-	-	1
TOTAL		7	3	101	2	1	5	1	1	3	1	2	3	12	3	145
PER CENT		4.8	2.1	69.7	1.4	0.7	3.4	0.7	0.7	2.1	0.7	1.4	2.1	8.3	2.1	100.0

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TABLE 5.4

EUR		EUROPE			1998																			RABIES CASES		1. 1.98 - 31.12.98	
		OTHER DOM. ANIMAL			OTHER WILD ANIMALS																						
COUNTRY	DONKEY	PIG	OTH. DOM. HERBIVOR	JACKAL	WOLF	RACCOON DOG	WILD CAT	LYNX	RACCOON	OTH. WILD CARNIVOR	WILD BOAR	HEDGEHOG	INSECTIV BAT	SQUIRREL	BEAVER	HAMSTER	BLACK RAT	NORVEGIA RAT	HOUSE MOUSE	VOLE	OTH. SMAL RODENTS	WILD RABBIT	HARE	OTHER	UNSPECIFIED	TOTAL	
BUL	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	11	11
BYE	-	1	-	-	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	26	-	26
CRO	-	-	-	2	-	-	1	-	-	-	1	-	-	-	-	-	-	-	-	-	-	9	-	-	-	-	7
CZH	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
DEN	-	-	-	-	-	-	-	-	-	-	-	-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	12
DEU	-	-	-	-	-	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	4
EST	-	-	-	-	-	32	-	1	6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	39
FRA	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	1
FRY	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
HUN	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
LTU	-	-	-	-	-	45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	45
LVA	-	-	-	-	1	34	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	36
NET	-	-	-	-	-	-	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-	-	7
POL	-	-	-	-	-	131	-	-	-	-	1	-	7	1	-	1	-	-	-	-	-	-	-	-	-	-	141
ROM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
RUS	-	19	1	-	13	29	-	-	-	5	1	1	-	-	2	1	1	2	1	-	7	-	1	1	-	85	
SVK	-	-	-	-	-	-	-	1	-	-	-	-	1	-	-	-	-	-	-	-	1	-	-	-	-	-	3
TUR	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
TOT	1	20	1	2	15	272	2	2	6	5	3	1	32	1	2	2	2	2	1	1	7	3	1	31	11	426	
%	0.2	4.7	0.2	.5	3.5	63.8	.5	.5	1.4	1.2	0.7	.2	7.5	.2	.5	.5	0.5	0.5	0.2	.2	1.6	0.7	.2	7.3	2.6	100.	

TABLE 5.5: RABIES CASE RATES (% TOTAL) FOR INDIVIDUAL ANIMAL SPECIES AND FOR TOTAL CASES OF 10 EUROPEAN COUNTRIES RANKING HIGHEST IN 1998.

EUR		EUROPE											1998		1. 1.98 - 31.12.98	
LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL	
CODE	NAME	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
EUROPE																
TOTAL RABIES CASES		777	577	774	52	111	22	2313	3380	31	93	25	404	3933	4	6250
PER CENT INVOLVEMENT / COUNTRY																
RUS	RUSSIAN FEDERATION	60.9	49.4	67.4	69.2	65.8	90.9	60.9	23.8	19.4	15.1	4.0	16.1	22.7	100.0	36.9
POL	POLAND	4.5	9.7	15.2	-	0.9	-	9.1	27.5	19.4	46.2	16.0	34.9	28.5		21.3
HUN	HUNGARY	3.0	12.0	2.6	9.6	0.9	-	5.1	12.6	-	5.4	16.0	0.2	11.1		8.9
SVK	SLOVAK REPUBLIC	3.6	5.9	0.6	-	-	-	2.9	9.9	3.2	6.5	4.0	0.7	8.8		6.6
CRO	CROATIA	1.9	1.7	0.5	1.9	7.2	-	1.6	10.0	-	6.5	-	1.7	8.9		6.2
LTU	LITHUANIA	1.4	3.3	7.2	5.8	0.9	-	3.9	2.1	9.7	12.9	8.0	11.1	3.4		3.6
LVA	LATVIA	3.0	5.4	1.2	1.9	-	-	2.8	2.8	35.5	2.2	4.0	8.9	3.7		3.4
EST	ESTONIA	2.2	4.5	0.4	-	0.9	-	2.0	2.3	6.5	2.2	8.0	9.7	3.1		2.7
TUR	TURKEY	13.4	0.2	2.5	1.9	1.8	4.5	5.5	-	-	-	-	-	0.0		2.0
DEU	FED.REP.OF GERMANY	0.3	0.3	0.3	1.9	0.9	-	0.3	2.5	3.2	3.2	24.0	1.0	2.5		1.7
TOTAL FROM 10 COUNTRIES		731	533	758	48	88	21	2179	3164	30	93	21	341	3649	4	5832
EQUAL % TOTAL		94.1	92.4	97.9	92.3	79.3	95.5	94.2	93.6	96.8	100.0	84.0	84.4	92.8	100.0	93.3

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R A B I E S C A S E S															1.10.98 - 31.12.98	
LOCATION		D O M E S T I C A N I M A L S						W I L D A N I M A L S						HUMAN CASES	TOTAL	
CODE	NAME	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
AUT A U S T R I A																
108	OBERPULLENDORF							0	1	-	-	-	-	1		1
CZH C Z E C H R E P U B L I C																
00	District of Prague							0	1	-	-	-	-	1		1
01	Central Bohemia							0	2	-	-	2	-	4		4
02	South Bohemia							0	3	-	-	-	-	3		3
04	North Bohemia							0	17	-	-	-	-	17		17
06	South Moravia							0	5	-	-	-	-	5		5
TOTAL		0	0	0	0	0	0	0	28	0	0	2	0	30	0	30
PER CENT		0.0	0.0	0.0	0.0	0.0	0.0	0.0	93.3	0.0	0.0	6.7	0.0	100.0	0.0	100.0
DEN D E N M A R K																
065	RINGKOBING	-	-	-	-	2	-	2						0		2
DEU F E D . R E P . O F G E R M A N Y																
05	Nordrhein-Westfalen							0	8	-	-	-	-	8		8
06	Hessen	-	-	2	-	-	-	2	12	1	-	4	-	17		19
07	Rheinland-Pfalz							0	1	-	-	-	-	1		1
10	Saarland							0	1	-	-	-	-	1		1
12	Brandenburg							0	-	-	-	-	1	1		1
14	Sachsen							0	8	-	1	-	-	9		9
TOTAL		0	0	2	0	0	0	2	30	1	1	4	1	37	0	39
PER CENT		0.0	0.0	5.1	0.0	0.0	0.0	5.1	76.9	2.6	2.6	10.3	2.6	94.9	0.0	100.0
FRA F R A N C E																
57	MOSELLE	-	1	-	-	-	-	1						0		1
NET N E T H E R L A N D S																
99	NO LOCATION							0	-	-	-	-	1	1		1

R A B I E S C A S E S																1.10.98 - 31.12.98	
LOCATION CODE NAME		D O M E S T I C A N I M A L S						W I L D A N I M A L S						HUMAN CASES	TOTAL		
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL	
BYE B E L A R U S 1)																	
01	Brest Region	-	1	-	-	-	-	1	-	-	-	-	1	1		2	
02	Vitebsk Region	-	2	1	-	-	-	3	-	-	-	-	5	5		8	
04	Grodno Region	1	-	-	-	-	-	1	-	-	-	-	0	0		1	
05	Minsk Region	-	-	-	-	-	-	0	-	-	-	-	4	4		4	
TOTAL		1	3	1	0	0	0	5	0	0	0	0	10	10	0	15	
PER CENT		6.7	20.0	6.7	0.0	0.0	0.0	33.3	0.0	0.0	0.0	0.0	66.7	66.7	0.0	100.0	
RUS R U S S I A N F E D E R A T I O N																	
08	Pskov Region	1	1	-	-	-	-	2	1	-	-	-	1			3	
10	Vladimir Region	-	1	-	-	-	-	1	-	-	-	-	1			2	
12	Tver Region	3	-	-	-	-	-	3	5	-	-	-	3		1	12	
13	Kaluga Region	1	-	-	-	-	-	1	7	-	-	-	1			9	
15	Moscow Region	3	12	-	-	-	-	15	9	-	1	-	2			27	
16	Oryol Region	4	5	17	-	1	-	27	4	-	-	-	4			31	
17	Ruazan Region	1	1	-	-	-	-	2	-	-	-	-	1			3	
19	Tula Region	9	7	-	-	1	-	17	5	-	-	-	2			24	
26	Belgorod Region	4	7	29	-	1	-	41	14	-	1	-	15			56	
27	Voronezh Region	3	3	9	-	-	-	15	8	-	-	-	8			23	
28	Kursk Region	11	30	31	3	1	-	76	40	-	1	-	41			117	
29	Lipetsk Region	2	-	-	-	-	-	2	3	-	-	-	3			5	
30	Tambov Region	-	-	2	-	-	-	2	7	-	-	-	7			9	
31	Astrakhan Region	3	5	6	2	1	-	17	1	-	-	-	1			19	
32	Volgograd Region	6	-	14	-	1	-	21	3	-	-	-	1			25	
33	Samara Region	3	-	5	-	1	-	9	3	-	-	-	3			12	
34	Penza Region	3	2	2	1	-	-	8	16	-	-	-	16			24	
35	Saratov Region	2	-	7	-	-	-	9	9	-	-	-	9			18	
36	Ulyanovsk Region	1	1	1	-	-	-	3	5	-	-	-	5			8	
37	Rep. of Kalmykiya	5	-	1	-	-	4	10					0			10	
38	Rep. of Tatarstan	8	3	6	1	-	-	18	15	-	-	-	15			33	
39	Krasnodar Territory	3	1	1	-	-	-	5	1	-	-	-	1			6	
40	Stavropol Territory	8	5	5	1	-	2	21	3	-	-	-	3			24	
41	Rostov Region	1	2	4	-	-	-	7	10	-	-	-	2			19	
42	Orenburg Region	22	6	31	6	-	-	65	43	-	-	-	5			113	
44	Rep. of Bashkortostan	29	7	38	6	5	1	86	63	-	-	-	63			149	
TOTAL		136	99	209	20	12	7	483	275	0	3	0	19	297	1	781	
PER CENT		17.4	12.7	26.8	2.6	1.5	0.9	61.8	35.2	0.0	0.4	0.0	2.4	38.0	0.1	100.0	

1) NO DATA FOR NOVEMBER AND DECEMBER

R A B I E S C A S E S																1.10.98 - 31.12.98	
LOCATION		D O M E S T I C A N I M A L S						W I L D A N I M A L S						HUMAN CASES	TOTAL		
CODE	NAME	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL	
BUL																B U L G A R I A	
06	VRATZA							0	-	-	-	-	1	1		1	
12	MONTANA							0	-	-	-	-	1	1		1	
25	TARGOVITCHE							0	-	-	-	-	1	1		1	
TOTAL		0	0	0	0	0	0	0	0	0	0	0	3	3	0	3	
FRY																F E D . R E P . O F Y U G O S L A V I A	
02	Pancevo	-	1	-	-	2	-	3	2	-	-	-	-	2		5	
03	Novi Sad							0	5	-	-	-	-	5		5	
04	Zrenjanin	1	3	-	-	-	-	4	1	-	-	-	-	1		5	
06	Sombor	-	2	-	-	-	-	2	3	-	-	-	-	3		5	
07	Sabac	-	1	-	-	-	-	1	3	-	-	-	-	3		4	
09	Jagodina	-	1	-	-	-	-	1	2	-	-	-	-	2		3	
10	Zajecar	1	-	-	-	-	-	1						0		1	
12	Nis	1	-	-	-	-	-	1						0		1	
TOTAL		3	8	0	0	2	0	13	16	0	0	0	0	16	0	29	
PER CENT		10.3	27.6	0.0	0.0	6.9	0.0	44.8	55.2	0.0	0.0	0.0	0.0	55.2	0.0	100.0	
TUR																T U R K E Y	
01	ADANA	1	-	-	-	-	-	1						0		1	
02	ADIYAMAN	1	-	-	-	-	-	1						0		1	
16	BURSA	2	-	1	-	-	-	3						0		3	
20	DENIZLI	1	-	-	-	-	-	1						0		1	
31	HATAY	1	-	1	-	-	-	2						0		2	
34	ISTANBUL	3	-	-	-	-	-	3						0		3	
35	IZMIR	5	-	2	-	-	-	7						0		7	
41	KOCAELI	1	-	-	-	-	-	1						0		1	
43	KUETAHYA	1	-	-	-	-	-	1						0		1	
45	MANISA	3	-	-	-	-	-	3						0		3	
46	KAHRAMANMARAS	1	-	-	-	-	-	1						0		1	
55	SAMSUN	1	-	-	-	-	-	1						0		1	
61	TRABZON	1	-	-	-	-	-	1						0		1	
73	SIRNAK	1	-	-	-	-	-	1						0		1	
TOTAL		23	0	4	0	0	0	27	0	0	0	0	0	0	0	27	
PER CENT		85.2	0.0	14.8	0.0	0.0	0.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	

CRO

C R O A T I A

R A B I E S C A S E S

1.10.98 - 31.12.98

LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL	
CODE	NAME	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
001	BELI MANASTIR							0	5	-	-	-	1	6	6	
002	BENKOVAC							0	1	-	-	-	-	1	1	
004	BJELOVAR							0	6	-	-	-	-	6	6	
007	BUZET							0	1	-	-	-	-	1	1	
017	DONJI MIHOLJAC	1	-	-	-	-	-	1						0	1	
021	DUGO SELO							0	2	-	-	-	-	2	2	
024	DURDEVAC							0	6	-	-	-	-	6	6	
025	GARESINICA							0	2	-	-	-	-	2	2	
027	GOSPIC							0	2	-	-	-	-	2	2	
031	IMOTSKI							0	6	-	-	-	-	6	6	
033	IVANIC GRAD	1	1	-	-	-	-	2	9	-	-	-	-	9	11	
034	JASTREBARSKO							0	2	-	-	-	-	2	2	
040	KOPRIVNICA							0	4	-	-	-	-	4	4	
044	KRIZEVCI							0	6	-	-	-	-	6	6	
046	KUTINA							0	5	-	-	-	-	5	5	
050	MAKARSKA							0	1	-	-	-	-	1	1	
051	METKOVIC	-	-	1	-	5	-	6	3	-	-	-	-	3	9	
052	NASICE							0	1	-	-	-	-	1	1	
053	NOVA GRADISKA							0	3	-	-	-	-	3	3	
056	OBROVAC							0	2	-	-	-	-	2	2	
058	OMIS							0	1	-	-	-	3	4	4	
059	OPATIJA							0	5	-	-	-	-	5	5	
060	ORAHOVICA							0	2	-	-	-	-	2	2	
061	OSIJEK	1	1	-	-	-	-	2						0	2	
075	SENJ							0	1	-	-	-	-	1	1	
076	SINJ	1	-	1	-	-	-	2	1	-	-	-	-	1	3	
077	SISAK							0	12	-	1	-	-	13	13	
078	POZEGA							0	5	-	-	-	-	5	5	
079	SLAVONSKI BROD							0	9	-	-	-	-	9	9	
081	SOLIN	1	-	-	1	-	-	2						0	2	
083	SIBENIK	1	-	-	-	-	-	1						0	1	
088	VINKOVCI							0	1	-	-	-	-	1	1	
089	VIROVITICA	1	-	-	-	-	-	1	1	-	-	-	-	1	2	
092	VRBOVEC							0	4	-	-	-	-	4	4	
093	VRBOVSKO							0	1	-	-	-	-	1	1	
096	VUKOVAR							0	2	-	-	-	-	2	2	
098	ZADAR	1	-	-	-	-	-	1	4	-	-	-	-	4	5	
102	GRAD ZAGREB							0	7	-	1	-	-	8	8	
TOTAL		8	2	2	1	5	0	18	123	0	2	0	4	129	0	147
PER CENT		5.4	1.4	1.4	0.7	3.4	0.0	12.2	83.7	0.0	1.4	0.0	2.7	87.8	0.0	100.0

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R A B I E S C A S E S																1.10.98 - 31.12.98	
LOCATION CODE NAME		D O M E S T I C A N I M A L S						W I L D A N I M A L S						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	2	-	-	-	-	-	2	-	-	-	1	1	2		4	
04	Jogevamaa	-	1	-	-	-	-	1	1	-	-	-	1	2		3	
05	Jaervamaa	-	-	-	-	-	-	0	-	-	-	-	2	2		2	
07	Laaene-Virumaa	-	-	-	-	-	-	0	-	-	-	-	1	1		1	
08	Polvamaa	-	1	-	-	-	-	1	2	-	-	-	-	2		3	
09	Paernumaa	-	1	-	-	-	-	1	1	-	-	-	2	3		4	
10	Raplamaa	-	-	1	-	-	-	1	-	-	-	-	1	1		2	
12	Tartumaa	-	1	1	-	-	-	2	4	-	-	-	2	6		8	
13	Valgamaa	-	-	-	-	-	-	0	1	-	-	-	-	1		1	
TOTAL		2	4	2	0	0	0	8	9	0	0	1	10	20	0	28	
PER CENT		7.1	14.3	7.1	0.0	0.0	0.0	28.6	32.1	0.0	0.0	3.6	35.7	71.4	0.0	100.0	
LVA L A T V I A																	
01	Aizkraukle	-	-	-	-	-	-	0	-	-	-	-	1	1		1	
04	Bauska	1	-	-	-	-	-	1	-	-	-	-	0	1		1	
05	Cesis	-	-	-	-	-	-	0	1	-	-	-	-	1		1	
06	Daugavpils	-	-	-	-	-	-	0	1	-	-	-	-	1		1	
08	Gulbene	1	1	-	-	-	-	2	-	-	-	-	0	2		2	
10	Jelgava	1	-	-	-	-	-	1	-	-	-	-	2	2		3	
12	Kuldiga	2	-	-	-	-	-	2	1	-	-	-	1	2		4	
15	Ludza	-	-	1	-	-	-	1	-	-	-	-	1	1		2	
16	Madona	-	1	-	-	-	-	1	1	-	-	-	-	1		2	
18	Preiļi	-	-	1	-	-	-	1	-	-	-	-	-	0		1	
19	Rezekne	-	-	-	1	-	-	1	1	-	-	-	-	1		2	
21	Saldus	-	4	-	-	-	-	4	1	-	-	-	1	2		6	
22	Talsi	1	-	-	-	-	-	1	-	-	-	-	0	1		1	
23	Tukums	-	-	-	-	-	-	0	1	-	-	-	1	2		2	
24	Valka	-	-	-	-	-	-	0	3	-	-	-	-	3		3	
25	Valmiera	-	1	1	-	-	-	2	9	-	-	-	-	9		11	
TOTAL		6	7	3	1	0	0	17	19	0	0	0	7	26	0	43	
PER CENT		14.0	16.3	7.0	2.3	0.0	0.0	39.5	44.2	0.0	0.0	0.0	16.3	60.5	0.0	100.0	

RABIES CASES

1.10.98 - 31.12.98

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS					HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS		
HUN HUNGARY														
01 Budapest	-	1	-	-	-	-	1	1	-	-	-	-	1	2
02 Baranya	-	1	1	-	-	-	2	1	-	-	-	-	1	3
03 Bacs-Kiskun	1	5	2	-	-	-	8	21	-	-	-	-	21	29
04 Bekes	2	1	-	-	-	-	3	10	-	-	-	-	10	13
05 Borsod-Abauj-Zemlen	2	2	1	-	-	-	5	8	-	-	-	-	8	13
06 Csongrad	-	4	1	3	-	-	8	6	-	-	-	-	6	14
07 Fejer	-	-	-	-	-	-	0	1	-	-	-	-	1	1
09 Hajdu-Bihar	-	4	1	-	-	-	5	12	-	-	-	-	12	17
10 Heves	-	3	-	-	-	-	3	7	-	-	-	-	7	10
11 Komarom-Esztergom	-	-	-	-	-	-	0	1	-	-	-	-	1	1
12 Nograd	-	1	1	-	-	-	1	4	-	-	-	-	4	5
13 Pest	-	2	1	-	-	-	3	13	-	-	-	1	14	17
14 Somogy	-	1	-	-	-	-	1	1	-	-	-	-	1	2
15 Szabolcs-Szatmar-Bere	-	-	-	-	-	-	0	8	-	-	-	-	8	8
16 Jasz-Nagykun-Szolnok	-	1	-	-	-	-	1	6	-	-	-	-	6	7
17 Tolna	1	3	-	-	-	-	4	-	-	-	-	-	0	4
18 Vas	-	-	-	-	-	-	0	1	-	-	-	-	1	1
TOTAL	6	29	7	3	0	0	45	101	0	0	0	1	102	147
PER CENT	4.1	19.7	4.8	2.0	0.0	0.0	30.6	68.7	0.0	0.0	0.0	0.7	69.4	100.0
SVK SLOVAK REPUBLIC														
1 Bratislavsky kraj	-	-	-	-	-	-	0	7	-	-	-	-	7	7
2 Trnavsky kraj	-	-	-	-	-	-	0	8	-	-	-	-	8	8
3 Trenciansky kraj	-	-	-	-	-	-	0	16	-	-	-	-	16	16
4 Nitriansky kraj	1	2	-	-	-	-	3	7	-	-	-	-	7	10
5 Zilinsky kraj	-	3	2	-	-	-	5	13	-	2	-	1	16	21
6 Banskobystricky kraj	-	1	-	-	-	-	1	22	-	-	-	-	22	23
7 Presovsky kraj	5	2	2	-	-	-	9	33	1	-	-	-	34	43
8 Kosicky kraj	2	4	-	-	-	-	6	10	-	-	-	-	10	16
TOTAL	8	12	4	0	0	0	24	116	1	2	0	1	120	144
PER CENT	5.6	8.3	2.8	0.0	0.0	0.0	16.7	80.6	0.7	1.4	0.0	0.7	83.3	100.0

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RABIES CASES																1.10.98 - 31.12.98	
LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL		
CODE	NAME	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL	
LTU LITHUANIA																	
34	Anyksciu	-	-	2	-	-	-	2	-	-	-	-	3	3	5		
36	Birzu	1	-	-	-	-	-	1	-	-	-	-	-	0	1		
38	Varenos	-	-	-	-	-	-	0	1	-	-	-	-	1	1		
41	Vilniaus	1	-	-	-	-	-	1	-	-	-	-	-	0	1		
49	Kaistadoriu	-	-	1	-	1	-	2	-	-	-	-	1	1	3		
51	Marijampoles	-	-	3	-	-	-	3	6	-	-	-	2	8	11		
52	Kauno	-	-	-	-	-	-	0	-	-	-	-	1	1	1		
54	Kelmes	-	-	2	-	-	-	2	-	-	-	-	-	0	2		
55	Klaipedos	-	-	2	-	-	-	2	-	-	-	-	-	0	2		
59	Lazdiju	-	-	-	-	-	-	0	1	-	-	-	-	1	1		
65	Pakruojo	-	2	-	-	-	-	2	2	-	1	-	3	6	8		
67	Pasvalio	-	-	-	-	-	-	0	1	-	-	-	-	1	1		
68	Plunges	-	-	-	-	-	-	0	-	-	1	-	-	1	1		
72	Raseiniai	-	-	4	-	-	-	4	1	-	1	-	1	3	7		
73	Rokiskio	-	-	-	-	-	-	0	1	-	-	-	-	1	1		
77	Taurages	-	-	-	-	-	-	0	-	-	-	-	1	1	1		
79	Traku	-	-	2	-	-	-	2	1	-	-	-	-	1	3		
82	Utenos	-	2	2	-	-	-	4	3	-	-	-	11	14	18		
85	Salcininku	-	-	2	-	-	-	2	3	-	-	-	3	6	8		
88	Silutes	-	-	2	-	-	-	2	-	-	-	-	-	0	2		
89	Sirvintu	-	-	1	-	-	-	1	2	-	-	-	3	5	6		
94	Jurbarko	-	-	-	-	-	-	0	2	-	-	-	-	2	2		
TOTAL		2	4	23	0	1	0	30	24	0	3	0	29	56	0	86	
PER CENT		2.3	4.7	26.7	0.0	1.2	0.0	34.9	27.9	0.0	3.5	0.0	33.7	65.1	0.0	100.0	
ROM ROMANIA																	
05	BIHOR	-	1	-	-	-	-	1	-	-	-	-	-	0	1		
07	BOTOSANI	-	-	3	-	-	-	3	-	-	-	-	-	0	3		
11	CARAS-SEVERIN	-	2	-	-	-	-	2	2	-	-	-	-	2	4		
36	TIMIS	-	-	-	-	-	-	0	-	-	-	-	1	1	1		
37	TULCEA	-	1	1	-	-	-	2	-	-	-	-	-	0	2		
38	VASLUI	-	-	-	-	-	-	0	1	-	-	-	-	1	1		
40	VRANCEA	-	-	-	-	-	-	0	2	-	-	-	-	2	2		
TOTAL		0	4	4	0	0	0	8	5	0	0	0	1	6	0	14	
PER CENT		0.0	28.6	28.6	0.0	0.0	0.0	57.1	35.7	0.0	0.0	0.0	7.1	42.9	0.0	100.0	

RABIES CASES

1.10.98 - 31.12.98

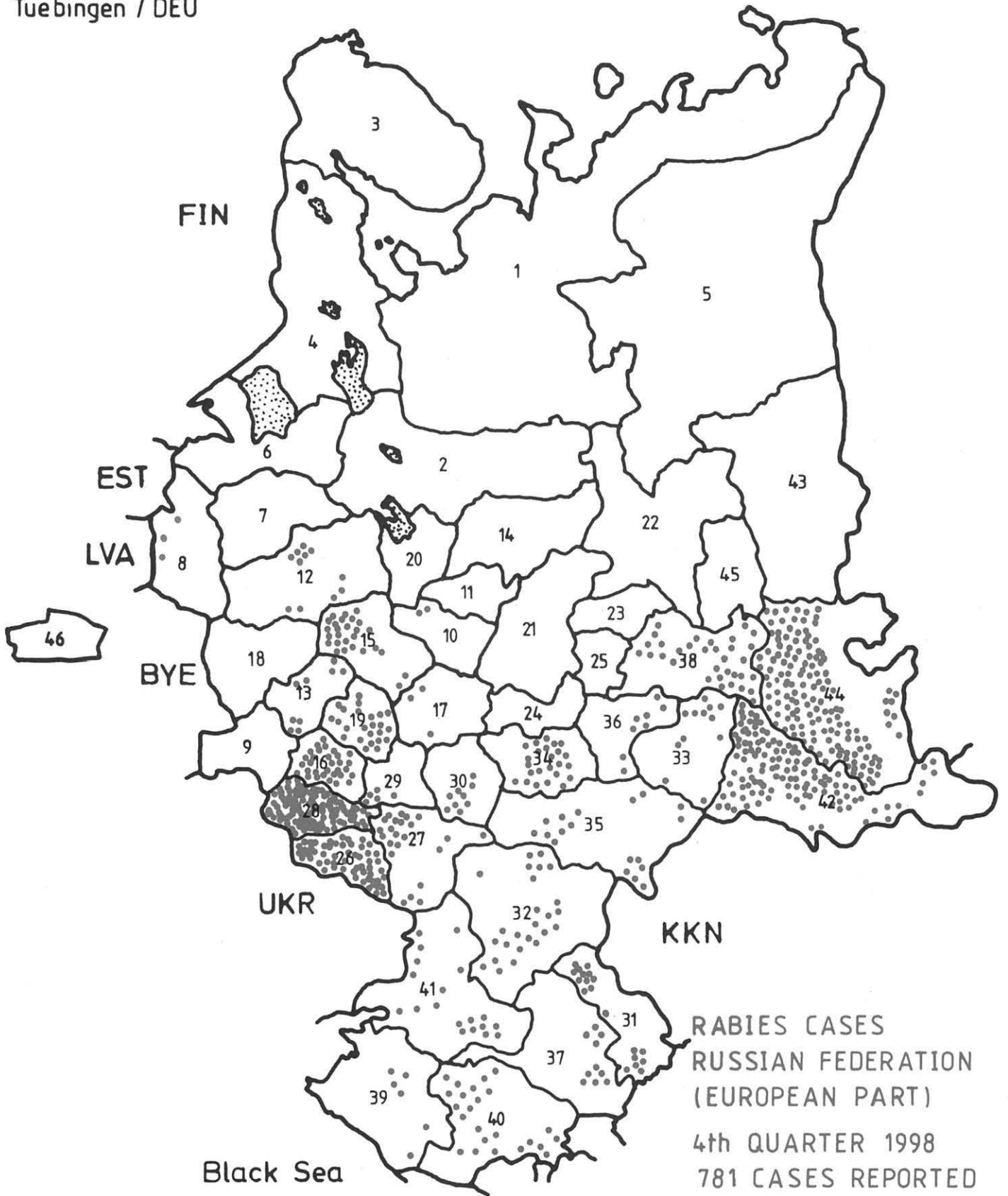
LOCATION CODE NAME		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS		
MLD MOLDOVA															
01	MOLDOVA	1	2	4	-	-	-	7	5	-	-	-	-	5	12
TOTAL		1	2	4	0	0	0	7	5	0	0	0	0	5	12
PER CENT		8.3	16.7	33.3	0.0	0.0	0.0	58.3	41.7	0.0	0.0	0.0	0.0	41.7	100.0
POL POLAND															
01	WARSZAWA							0	3	-	2	-	-	5	5
03	BIALA PODLASKA							0	3	-	-	-	1	4	4
05	BIALYSTOK	-	-	8	-	-	-	8	13	-	-	-	-	13	21
09	BYDGOSZCZ							0	2	-	-	-	-	2	2
11	CHELM							0	7	-	1	-	-	8	8
13	CIECHANOW	-	1	2	-	-	-	3	10	-	-	-	2	12	15
17	ELBLAG	-	-	2	-	-	-	2	2	-	-	-	-	2	4
29	KIELCE	-	1	-	-	-	-	1	9	-	-	-	-	9	10
31	KONIN							0	2	-	-	-	-	2	2
33	KOSZALIN							0	1	-	-	-	-	1	1
37	KROSNO							0	1	-	-	-	-	1	1
43	LUBLIN							0	7	-	-	-	1	8	8
45	LOMZA							0	3	-	-	-	1	4	4
47	LODZ							0	2	-	-	-	-	2	2
49	NOWY SACZ							0	2	-	-	-	-	2	2
51	OLSZTYN	-	-	5	-	1	-	6	16	-	2	-	13	31	37
55	OSTROLEKA	-	1	-	-	-	-	1	2	-	1	-	-	3	4
61	PLOCK	2	-	1	-	-	-	3	11	-	-	-	1	12	15
65	PRZEMYSL	1	-	-	-	-	-	1	4	-	-	-	-	4	5
67	RADOM							0	5	-	1	-	-	6	6
69	RZESZOW							0	18	-	1	-	-	19	19
71	SIEDLCE							0	9	-	1	-	-	10	10
73	SIERADZ							0	2	-	-	-	-	2	2
79	SUWALKI	-	1	22	-	-	-	23	26	1	1	-	24	52	75
83	TARNOBRZEG	1	-	-	-	-	-	1	7	-	-	-	-	7	8
85	TARNOW	-	1	-	-	-	-	1	6	-	-	-	-	6	7
87	TORUN	-	3	16	-	-	-	19	11	-	1	-	8	20	39
94	WLOCLAWEK	-	-	2	-	-	-	2	17	-	-	-	-	17	19
95	ZAMOSC	-	2	2	-	-	-	4	4	-	-	-	-	4	8
TOTAL		4	10	60	0	1	0	75	205	1	11	0	51	268	343
PER CENT		1.2	2.9	17.5	0.0	0.3	0.0	21.9	59.8	0.3	3.2	0.0	14.9	78.1	100.0

4th Quarter: October-December 1998

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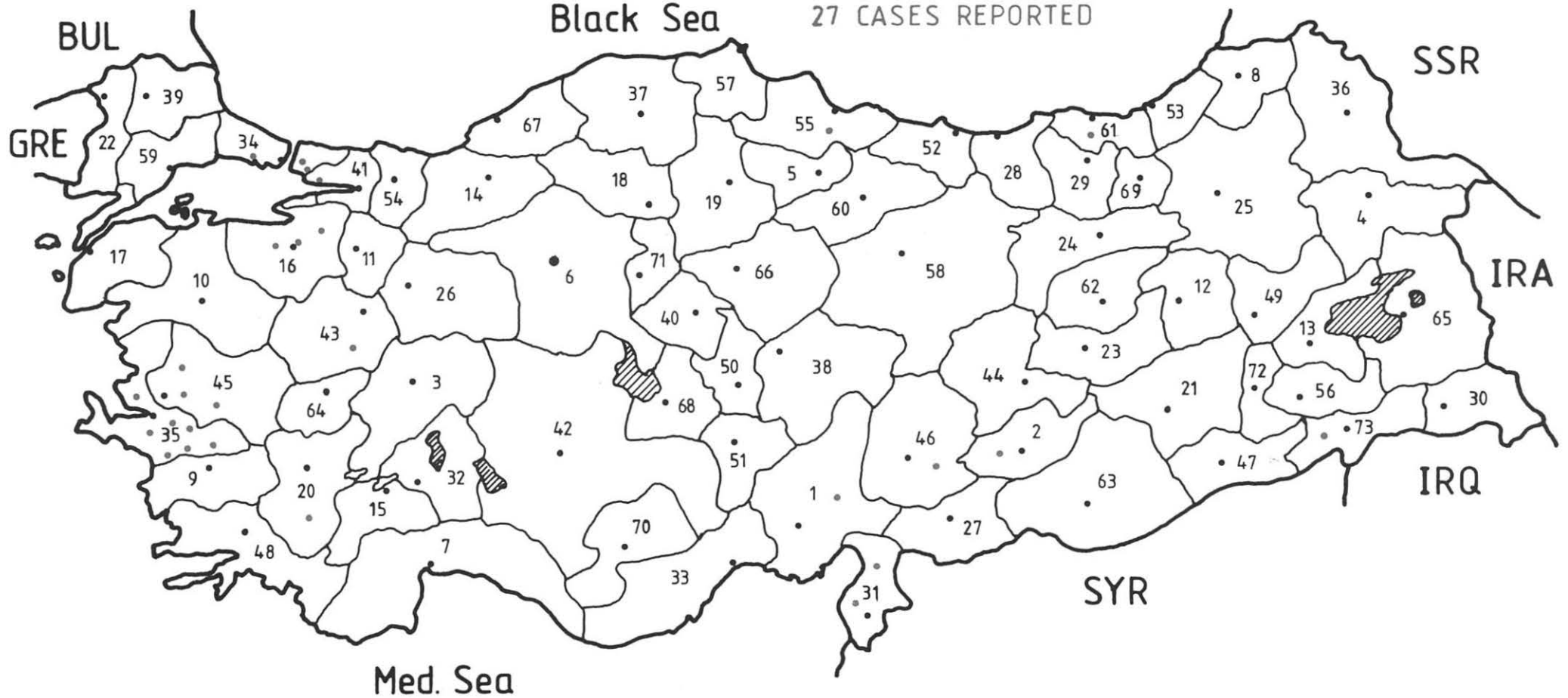
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WHO Coll. Centre
Tuebingen / DEU

RABIES CASES TURKEY
4th QUARTER 1998
27 CASES REPORTED



NOTE OF CORRECTION

The TABLES on pp 13-16 should be in the following order:

16, 15, 14, 13

ICE
(rabies free)

NOR
(rabies free)

FIN
(rabies free)

EST
(28)

RUS
(781)

SWE
(rabies free)

LVA
(43)

DEN
(2)

LTU
(86)

IRE
(rabies free)

RUS

BYE
(15)

UNK
(rabies free)

OF UNKNOWN
LOCATION

NET
(1)

POL
(342)

UKR
(no data)

BEL
(0)

DEU
(38)

CZH
(30)

SVK
(144)

MLD
(12)

FRA
(1)

AUT
(1)

HUN
(147)

ROM
(14)

(rabies free)
SWI

SVN
(0)

CRO
(147)

ITA
(rabies free)

BIH
(no data)

FRY
(29)

BUL
(3)

POR
(rabies free)

SPA
(MAINLAND AND ISLANDS RABIES FREE)

TYM
(rabies free)

ALB
(rabies free)

TUR
(27)

NORTH AFRICA
(1)

GRE
(rabies free)

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

0 50 100 km

RABIES CASES EUROPE
4th QUARTER 1998
1893 CASES REPORTED
5 BAT RABIES CASES INCLUDED

