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 **Second 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 an article refers to the oral vaccination of foxes against rabies. It is a study using an increased vaccine bait application after failure of the method. The case history of a rabid dog in the south of France under 4.2 highlights the problem of movement of dogs which pass the European borders uncontrolled.

The **rabies case data** are tabulated for the **Second 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 Second Quarter 1998** is shown on maps of the Russian Federation, Turkey and Europe in the ANNEX.

2. SUMMARY OF RABIES IN EUROPE

During ***"This Quarter"***, **1207 rabies cases** were reported **in Europe**. Of these 745 were in wild animals (61.7%) and 462 in domestic animals.

Of the **745 cases in wild animals**, 634 (52.5% of total) were foxes, 6 wolves, 1 jackal, 50 raccoon dogs, 8 badgers, 2 stone martens, 10 pine martens, 5 polecats, 4 ferrets, 1 fish otter, 1 large weasel, 6 roe deer, 2 moose, 4 insectivorous bats, 2 beavers, 1 black rat, 1 house mouse, 1 vole, 1 hare, 1 other wild animal and 4 unspecified animals. Of the **462 domestic animals**, 210 were dogs, 102 cats, 12 horses, 1 donkey, 95 bovines, 30 sheep, 1 goat and 11 pigs.

There were **no human cases** reported.

The **4 bat rabies cases** occurred in Denmark (2), the Netherlands (1) and Slovakia (1). Because of the distinct epidemiological features of the disease in these animals, the cases are marked in a different colour in the map of the ANNEX.

The **dog-mediated** rabies is only found in Europe in Turkey. Out of 38 animals affected during ***"This Quarter"*** there was no wild animal involved (29 dogs, 1 cat, 5 bovines, 2 sheep, 1 other domesticated animal).

There has been a reduction of cases from 1711 cases of the previous quarter to 1207 during ***"This Quarter"***. It is the expected seasonal decrease in **fox-mediated rabies countries** (though Turkey is included in the total). However, there were 119 more cases compared to the second quarter 1997 (1088 - corrected figure).

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

Macedonia, the United Kingdom of Britain and Northern Ireland.

There were **no cases reported** from the Grand Duchy of Luxembourg and Switzerland, but the last indigenously acquired case (terrestrial or bat) was less than two years ago.

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

3. RABIES IN INDIVIDUAL COUNTRIES

3.1 Albania ALB

by K. Berxholi

The country remained rabies-free.

Surveillance:

A total of 40 animals was examined for rabies (18 foxes, 3 dogs, 4 cats, 1 badger, 1 weasel, 13 bats) but reveiled negative results.

Apart from terrestrial animals the surveillance is also focused on bats. A collaboration with zoologists at the Natural Science Museum in Tirana has been established to determine the bat species.

3.2 Austria AUT

by Helmut Schnabl

Of 4196 animal samples examined for rabies ***"This Quarter"***,1 case was diagnosed positive.

The case occurred in the Federal Province of Burgenland (in the community of Wulkaprodersdorf) in the east of the country in a fox.

3.3 Belgium BEL

by L. Hallet

During ***"This Quarter"***, there was only 1 fox diagnosed positive for rabies in the east of Belgium.

Surveillance:

The following animals were investigated for rabies with negative results from 01.01.98 to 31.05.1998 - 163 foxes, 84 bovines, 12 cats, 15 dogs, 29 small ruminants, 2 horses, 6 stone martens, 4 badgers, 1 ferret, 1 polecat, 1 pine marten, 4 cervines, 2 bats, 1 rat, 1 hare.

3.4 Bosnia and Hercegovina BIH

No data.

3.5 Bulgaria BUL

by L. Lavchev

During ***"This Quarter"***, four cases of rabies were reported from Bulgaria, all in the north of the country. There were no details in regard to animal species involved.

3.6 Belarus BYE

by S.N. Shpilevsky

During ***"This Quarter"***, 34 cases of rabies were reported from Belarus,7 cases more than during the previous quarter. The cases occurred in 19 foxes, 8 dogs, 2 cats, 3 horses and 2 bovines.

Out of 6 administrative regions of the country 4 were affected by rabies including 19 districts.

3.7 Croatia CRO

by Sanja Šeparović

During ***"This Quarter"***, 26 municipalities in Croatia recorded a total number of 38 rabies cases in animals, 36 cases less if compared to the same quarter 1997, or 109 cases less in comparison with the 1st quarter 1998.

Of 31 wild animals rabies was diagnosed in 29

foxes (76.3% of total), 1 jackal and 1 marten.

Of 7 domestic animals rabies was diagnosed in 3 cats, 2 dogs, 1 goat and 1 bovine.

3.8 Czech Republic CZH

by Oldrich Matouch

During *"This Quarter"*, a total of 2190 samples (1807 wild and 383 domestic animals) were examined for rabies in the Czech Republic. 16 of them (14 foxes, 1 badger and 1 cat) were rabies positive. These were 13 cases less than in the previous quarter and 43 cases less than during the second quarter 1997.

A significant improvement of the rabies situation was noticed in all districts of North Bohemia where the aerial distribution with an increased number of vaccine baits was practiced. Cases were still concentrated in the districts of Ústí n.L. (5) and Děčín (3). Another active focus was localized in the district of Jihlava (6 cases) in South Moravia.

The oral vaccination campaign was carried out in April 1998 using 650,000 Lysvulpen (SAD Bern) vaccine baits in an area of 31,000 km².

3.9 Denmark DEN

by Eric Stougaard

Two bat rabies cases were diagnosed during *"This Quarter"*, in the capital of the country Koebenhagen (Copenhagen).

3.10 Germany, DEU Federal Republic

by Winfried W. Müller and Hartmut Schlüter

A total of 15 rabies cases in animals was reported during *"This Quarter"*, the same number of cases as in the same period of the previous year. They all occurred in the west of the country in three federal states: Nordrhein-Westfalen (13), Rheinland-Pfalz (1) and Saarland (1).

3.11 Estonia EST

by Matti Nautras

In 12 infected districts of Estonia 66 cases were diagnosed rabid during *"This Quarter"*. There were 53 cases in wild animals (37 foxes, 13 raccoon dogs, 2 badgers, 1 ferret) and 13 in domestic animals (4 dogs, 7 cats, 1 bovine, 1 sheep).

In the districts Harjumaa (north) and Tartumaa (east) were 23 and 13 cases reported respectively, in all other districts between 1 and 6 cases.

3.12 Finland FIN

by Riitta Heinonen

The country remained rabies-free.

Surveillance in the 1st and 2nd quarter 1998

A total of 317 animals were examined by immunofluorescence test on brain tissue, all with negative results. They were: 113 arctic foxes, 128 raccoon dogs, 3 badgers, 13 pine martens, 1 polecat, 6 lynx, 1 brown bear, 26 other wild carnivores, 11 farmed pine martens, 7 cats, 5 dogs, 2 bovines and 1 insectivorous bat.

3.13 France FRA

by Michel F.A. Aubert

There was 1 dog diagnosed rabid in the département Gard during *"This Quarter"*. See details in the article under 4.2 of the Miscellaneous Section.

3.14 Federal Republic of Yugoslavia FRY

by Milijana Simić

11 rabies cases (7 foxes, 2 roe deer, 1 dog, 1 cat) were registered during *"This Quarter"* in the Federal Republic of Yugoslavia, 24 cases less than in the previous quarter and 12 cases less than in the second quarter 1997.

3.15 Greece GRE

The country remained rabies-free.

3.16 Hungary HUN

by Bálint Kerekes

During *"This Quarter"*, 91 rabies cases in animals were registered, 119 cases less than during the previous quarter and 6 cases less than during the second quarter 1997.

The rabies situation remained as previously described with an improved situation in the western part of the country where oral vaccination of foxes is practiced.

3.17 Iceland ICE

The country remained rabies-free.

3.18 Ireland IRE

The country remained rabies-free.

3.19 Italy ITA

by Santino Prosperi

The country remained rabies-free.

3.20 Lithuania LTU

by K. Lukauskas and A. Dranseika

During *"This Quarter"*, the rabies cases in Lithuania increased by 2 compared to the previous quarter. Of a total of 41 cases, 29 were diagnosed in wild animals (22 foxes, 2 raccoon dogs, 2 polecats, 2 pine martens and 1 roe deer) and 12 in domestic animals (6 bovines, 2 cats, 3 dogs and 1 horse.

The most affected districts during *"This Quarter"* were Kaisedorys and Raseiniai with 5 and 7 cases respectively. All other infected districts recorded between 1 and 4 cases.

Twenty-five thousands dogs and two thousands cats were vaccinated against rabies parenterally.

Oral vaccination of foxes was practiced in May 1998. 100,000 vaccine baits (Lysvulpen) were distributed by hand in 23 districts (15-20 per km²).

There were no human cases reported in the country.

3.21 Luxembourg LUX

by Joseph Kremer

There was no rabies cases reported in the Grand Duchy of Luxembourg during *"This Quarter"*. The last case occurred in December 1997.

Surveillance: 10 foxes and 1 marten were examined for rabies with negative result.

3.22 Latvia LVA

by J. Rimeicāns and Z. Andersons

A total of 53 rabies cases were registered during *"This Quarter"* in 20 infected districts, 25 cases more than during the previous quarter. 36 cases were in wild animals (67.9% of total). Of these were 26 foxes, 8 raccoon dogs, 1 badger and 1 moose. Of 17 rabid domestic animals there were 6 dogs and 11 cats.

The most affected district was Valmiera with 12 cases.

3.23 Moldova MLD

by Vasile Bahau

During *"This Quarter"*, out of 21 samples of 14 regions of the country examined for rabies by the Central Veterinary Laboratory (7 dogs, 5 cats, 5 wild animals, 4 others) 7 animals were rabid: Chisinau municipality - 1 fox, Dubasari district - 1 fox, Glodem district - 1 fox and 1 cat, Orhei district - 1 fox, Soroca district - 1 cat, Anenii Noi district - 1 bovine.

3.24 Netherlands NET

by G. Visser

During *"This Quarter"*, 1 bat rabies case was recorded in the northern province of Groningen.

Surveillance: 36 animal samples were examined for rabies with negative result: 33 bats, 2 foxes, 1 dog. Amongst the bats were 4 from the Amsterdam zoo (Artis) and 3 from the zoo in Rotterdam (Blijdorp).

3.25 Norway NOR

by Gudbrand Bakken

The country remained rabies-free.

3.26 Poland POL

by Andrzej Komorowski

During *"This Quarter"*, 252 rabies cases in animals were registered, 128 cases less than in the previous quarter and 112 cases less than in the second quarter 1997.

There were only scattered cases in the western half of the country where oral vaccination of foxes is practiced compared to the eastern half with the majority of cases.

3.27 Portugal POR

The country remained rabies-free.

3.28 Romania ROM

by Niculai Popârlan

During *"This Quarter"*, 10 rabies cases were recorded in Romania in 5 foxes, 1 other wild animal, 1 dog and 3 cats.

The cases occurred in 6 provinces in the northern half of the country.

Additional information on the rabies situation in Romania

by Elena Constantinoiu and Ghită Sanda
Central Laboratory for Veterinary Diagnosis

Rabies in Romania is diagnosed in both domestic and wild animals.

Considering the development of rabies between 1991 and 1997 there was a peak of the total of the annual rabies cases in 1993 with 107 cases while there was the lowest figure in 1996 with 23 cases. Usually the cases in wild animals exceed those in domestic animals. The fox is the most affected wild animal, the dog in the domestic animals.

When in 1993 the rabid domestic animals exceeded the wild animals, some human cases were recorded as well.

Rabies prevention is practiced as follows:

- there is compulsory vaccination of dogs
- in heavily rabies-infected areas pasture animals are being vaccinated
- stray dogs are being castrated stopping them from reproducing
- fox population are being decimated by shooting.

Oral vaccination of foxes is intended to be started in 1998. The Ministry of Health and the Ministry of Waters, Forestry and Environmental Protection initiated a *National Program for Rabies Prevention, Surveillance and Control.*

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.V.Seliverstov, V.F.Pilinin, and S.A. Kolomizev

During *"This Quarter"*, 444 rabies cases in animals were reported. Of the total number of cases 273 were in domestic animals - 123 dogs, 42 cats, 63 bovines, 8 horses, 26 sheep, 11 pigs. Of 171 wild animals rabies was diagnosed in 149 foxes, 6 wolves, 3 raccoon dogs, 3 ferrets, 2 badgers, 2 beavers, 1 weasel, 1 otter, 1 rat, 1 mouse, 1 hare, 1 elk.

Most affected were the Kursk Region with 44 cases, Novgorod Region with 40 cases, Bashkortostan with 37 cases, and the Republic of Kalmykiya with 31 cases. All other infected regions reported between 3 and 25 cases.

3.30 Spain SPA

by Carlos Abellán García

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

There were 4 cases in dogs, 1 in Ceuta and 3 in Melilla in the Spanish territory of North Africa.

3.31 Slovak Republic SVK

by Jozef Sokol and Bohuslav Lovas

During *"This Quarter"*, there were 73 rabies cases in animals in the Slovak Republic. Of these 55 (75,3% of total) were in wild animals (52 foxes, 1 pine marten, 1 vole, 1 insectivorous bat) and 18 in domestic animals (12 dogs, 5 cats, 1 bovine).

3.32 Slovenia SVN

by Zoran Kovač

A total of 4 rabies cases was reported during *"This Quarter"* from Slovenia, all in foxes and all in the center of the country.

3.33 Sweden SWE

The country remained rabies-free.

3.34 Switzerland SWI

by Urs Breitenmoser

During *"This Quarter"*, no rabies case was diagnosed in Switzerland. A total of 175 animals (116 foxes) was examined. There was no rabies case in Switzerland in the previous quarter (1/98) or in the second quarter of 1997.

In early May 1998, an area of some 1400 km² was vaccinated in the north of the country (cantons of Basel-Stadt, Basel-Landschaft, Solothurn and Aargau). This was the last vaccination campaign planned for Switzerland.

4 bats (1 *Pipistrellus pipistrellus*, 1 *pipistrellus* sp., 1 *Vespertilio murinus*, 1 *Nyctalus noctula*) were examined in this quarter, all were found to be negative for rabies.

3.35 Turkey TUR

by Celal Özcan

During *"This Quarter"*, 38 rabies cases were reported in Turkey in domestic animals only - 29 dogs, 1 cat, 5 bovines, 2 sheep, 1 donkey.

Except for Istanbul with 10 cases, 15 other provinces (Il) throughout the country reported 1 to 5 cases.

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 1998

First Quarter 1998

Reports of suspect rabies outside quarantine were investigated on 3 occasions during the first quarter of 1998. One case, that of a dog, was resolved by veterinary staff and two cats were found to be negative following 15 days observation in an isolation facility.

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

Second Quarter 1998

Two suspect cases in cats were resolved by veterinary staff during this quarter.

33 bats were examined during this quarter all with negative results.

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4. MISCELLANEOUS ARTICLES

4.1 Increased Vaccine Bait Application after Failure of oral Vaccination of Foxes against Rabies - an Experience in Baden-Württemberg, Germany

by W.W. Müller* and D.-E. Wiebe**

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Introduction

When oral vaccination of foxes was applied in the field in 1978 in Switzerland and 1983 in Germany the impact of improving the rabies situation made many European countries join in the 1980's, nurturing the idea that with the method one could speak of eradicating the disease rather than controlling it. Today, this seems possible if one looks at the present development of fox-mediated rabies in Europe.

However, in the beginning of the 1990's several countries experienced set-backs with the method. When areas could not be vaccinated comprehensively, residual foci initiated new outbreaks or reinfections occurred from infected neighbouring areas. Quite often money could not be secured to guarantee the regular bi-annual vaccinations on a large and long enough scale with 15 vaccine baits distributed per km².

One problem became quickly obvious: there were wide-spread high density fox populations in Europe, especially in countries practicing oral vaccination (see articles in issues 1/95, page 14 and 1/96, page 10 of this BULLETIN). More foxes equal more vaccine baits was then a logical conclusion and alternative methods were considered to improve the fox population immunity.

Often the seroconversion rate was improved sufficiently by increasing the vaccine baits per km². For example where originally 15 per km² were used, the number was increased up to 30. In some attempts 3 instead of 2 vaccination campaigns were carried out annually. The third or summer campaign was designed to reach the rabies susceptible young foxes of the spring. The latter aim was tested in Switzerland by hand-placing vaccine baits around dens in an additional May/June campaign (see article in issue 4/95, page 13 of this BULLETIN).

To consider success or limits of the oral vaccination *Schenzle* developed a mathematical model by relating vaccination, fox population density and course of rabies (see article in issue 1/96, page 10 of this BULLETIN). The basic data for the model came from Baden-Württemberg.

The results of the model in summary are: to avoid failure in eradicating the disease, a critical point of fox population immunity must be reached. And, at the end of the oral vaccination campaigns,

when the fox population is high, the level of the population immunity must be kept high as well to take care of possible residual foci.

Vaccination Strategy and Results

When in 1992 the rabies cases in Baden-Württemberg exceeded those of the previous year by more than double, the vaccine baits per km² were increased up to 20 per km². In spite of a reduction of cases in 1993 and 1994 a drastic change in the vaccination strategy was adopted for 1995 (see TABLE 4.1.1).

According to how serious an epidemiological situation was judged a third or summer vaccination was practiced and, a single vaccination campaign could be repeated within a short time span (2-4 weeks) using during the first campaign 20 vaccine baits per km² and during the second 15. However, the second campaign was carried out mostly in the infected area only. The safety distance to the infected zone was always at least 20 km, and adjusted when needed.

The conditions of the 4 vaccination areas in TABLE 4.1.1 were different therefore varying strategies were chosen.

Area N had a rather high rabies incidence and has an open border to the infected states (Bundesländer) of Hessen and Bayern. Today there is still a threat from this border area.

Area E recorded a residual focus with a strong tendency of spreading. It is interesting that in this area with a high fox population density and no vaccination for some time the focus could be stopped within approx. one year, obviously due to the very intensive vaccination efforts as indicated in the table.

Areas SW and **SE** have both a long natural border. In one case it is the river Rhine, in the other lake Constance (Bodensee). The SE area has a very high fox density; eradication efforts with oral vaccination had been started as far back as 1984.

The intensive vaccination was started in 1995 - at present (September 1998) there are no rabies case reported in Baden-Württemberg for more than 2 years. Usually, the vaccination is continued for approx. two years after the last rabies case unless there is further reinfection to be feared as in the case of area N in TABLE 4.1.1.

In TABLE 4.1.2 the results of 7 years of rabies antibody testing is summarized and the annual fox hunting bag mentioned. It can be seen that the percentage of immunized foxes decreased from 1991 to 1994, while the hunting bag increased. Though the hunting bag increased even more during the years 1995 to 1997, the percentage of immunized foxes could be kept up at a high level, obviously due to the intensified vaccination efforts.

Conclusions and Discussion

When for 1995 in Baden-Württemberg a new strategy of oral vaccination of foxes against rabies was planned it resulted from the fact that rabies was diminishing but it could not be eradicated and, the fox hunting bag was increasing. It can be concluded at this point that the method of alternative vaccine bait application as decided was successful.

TABLE 4.1.1: **Vaccination Strategy in the State of BADEN-WÜRTTEMBERG**

Vaccination Areas[1]		Rabies Cases 1994	1995 Sp[2]	1995 Su[2]	1995 Au[2]	1996 Sp	1996 Su	1996 Au	1997 Sp	1997 Au	1998[3] Sp	1998[3] Au
N	Results[4]		2x[5]	1x	2x	2x	-	2x	2x	2x	2x	2x
			388/504 = 77%			446/579 = 77%			311/408 = 76%		6)	
5510 km²	Rabies Cases	43	13			4			-		-	
E	Results		-	2x	2x	2x	1x	2x	2x	2x	2x	2x
			134/176 = 76%			368/483 = 76%			301/398 = 76%		6)	
4160 km²	Rabies Cases	1	18			6			-		-	
SW	Results		2x	1x	2x	1x	-	1x	1x	1x	-	-
			99/120 = 83%			82/102 = 80%			71/94 = 76%		6)	
3780 km²	Rabies Cases	23	-			-			-		-	
SE	Results		2x	1x	2x	1x	-	1x	1x	1x	-	-
			294/396 = 74%			111/136 = 82%			47/60 = 78%		6)	
4200 km²	Rabies Cases	10	-			1			-		-	
B-W	Total Cases	77	31			11			-		-	

1) N - North, E - East, SW - South West, SE - South East
2) Sp - Spring, Su - Summer, Au - Autumn
3) 30 September 1998
4) Foxes with antibodies/Total examined per annum
5) Total area twice or second time infected area only
6) No results yet

TABLE 4.1.2:
Seroconversion and Hunting Bag in the State of Baden-Württemberg 1991 - 1997

Year	Foxes with Antibodies / Total examined	%	Fox Hunting Bag*
1991	644/895	72	52 305
1992	869/1266	69	57 634
1993	546/898	61	74 445
1994	493/852	58	68 509
1995	915/1196	77	95 907
1996	1007/1300	77	79 868
1997	730/960	76	79 243

**Source: Wildforschungsstelle (wildlife research) of Baden-Württemberg*

The long time study of rabies antibody determination seems to confirm the model of *Schenzle* that a critical point of fox population immunity must be reached in order to eradicate the disease. It can be seen from TABLE 4.1.2 that the percentage of immunized foxes increased from 1994 in the following three years by nearly 20% and is thus, no doubt, above the critical point.

What we do not know is: could we have achieved the same result with a lower percentage of immunized foxes, which would be interesting from a cost-benefit point of view.

It should be mentioned here that several countries participating in the European rabies surveillance have reported that increased vaccine bait application was practiced and quite successfully, as can be seen from the map in the ANNEX of this BULLETIN, when compared to previous years. Therefore, there is not only one ideal recommendation.

However, certain points may be considered from the Baden-Württemberg experience:

- **The vaccination area**. The size of the areas described here is definitely at the lower limit. The motto is: the larger the better! In smaller areas (because of lack of money) a successful strategy is doubtful. The rabies focus itself should be in the middle as there is a lot of movement of unvaccinated and vaccinated foxes at the border of the vaccination area, which leads to a reduction of the percentage of immunized foxes.

- **Natural boundaries**. It is useful to integrate high mountains, large rivers or lakes into the vaccination areas. Of course, it is equally useful to border on other vaccination areas.

- **Hunting bag**. Whoever decides on a vaccination area should look for data regarding hunting bag. Fox biotopes can be quite different. It is important to know about the hunting habits in an area as they can be quite different.

- **Increased vaccine application.** The following indications have to be considered when high fox populations are to be expected: 1. The finishing off of an eradication programme. 2. An area in danger of reinfection. 3. An area infected for the first time. 4. Known good fox biotopes.

(Data collected in connection with the Ministry of Agriculture of the State of Baden-Württemberg, Germany).

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4.2 A Rabid Dog in the South of France

by Y. Rotivel*, H. Bourhy*, O. Lemarignier**, J. Reynes***, S. Wirth*, H. Tsiang*
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A dog died on the 28th May in Nîmes, a town located in the South of France, 800 km away from rabies infected districts. As the dog had previously bitten the veterinarian while being examined on the 27th of May, the brain was sent to the Pasteur Institute in Paris for rabies diagnosis. Rabies antigen -nucleoprotein- was found by direct immunofluorescence and by enzyme immunodiagnosis in the brain of the animal. The brain material was inoculated into neuroblastoma cells. A sequencing of the isolate was performed. It was found to be a canine strain with close relationship to a strain previously isolated from a human patient bitten in Egypt in 1979 (1).

The questioning of the bitten veterinarian reveiled the following case history of the dog. On the 27th of May, a woman with two young children brought the dog to the veterinarian. She had found the dog on the 26th of May in a public square in Nîmes. She left incognito and was never found again, despite local and national advertisement. The dog died the following day in the premises of the local Society for Animal Protection. Laboratory investigations were carried out in the Rabies Unit at the Pasteur Institute in Paris on the 5th of June.

Rabies is almost eliminated from France. Since the introduction of oral immunization of the wild fauna in 1986, the number of rabies cases has been decreasing from more than 4000 in 1989 to 2 in 1997 (2). The two cases which have been reported in 1997, occurred in a bat in Meurthe et Moselle and in a fox in Moselle, in the Eastern part of France, next to the German border (3). From January to May 1998, only one rabid fox in Moselle and one rabid bat in Finistère, in the extreme west of France, were found (4).

However, there are the imported rabies cases. From 1968 to 1997, 16 dogs and 1 cat have been reported in different parts of the French territory (5).

As far as human rabies is concerned, 19 imported cases have been reported from 1968 to 1997 (6).

Here are some comments concerning human and veterinary medicine.

Although the last two imported dog cases, Vaucluse 1995 and Gard 1998, occurred in non-enzootic areas, diagnosis was rapidly performed and the epizootic rapidly controlled. No further animal or human cases occurred. Vaccination of humans and non-vaccinated domestic animals with contacts or possible contacts to the rabid animal was carried out.

The occurrence of such cases stresses the failures in the sanitary policy at the French border and moreover at the European Union border. Animals as well as humans cross borders without any effective sanitary control, while canine and fox rabies are still enzootic in a number of areas in Europe, the Middle East and North Africa.

As far as human health is concerned, the occurrence of scattered rabies cases in non-enzootic areas leads to as many post-exposure treatment (PET) as carried out in known enzootic regions. In terms of public health, this means: higher cost for human rabies prophylaxis. In the above described case, the Rabies Treatment Center of Montpellier applied 10 PETs to subjects exposed to the rabid dog. During the following months, the number of PETs applied in the Rabies Treatment Center of Montpellier were 5 times higher than usual.

The district of Nîmes, the Gard, was officially declared an infected département on June the 8th. From the 8th of June to the 17th of July 1998, the total number of animal specimens sent for rabies diagnosis to the National Reference Center has been 1.6 times higher compared to the same period in 1997. The number of specimens from the Gard district has been 12 times higher than in the previous year (Fig. 4.2.1). An increased surveillance in the Gard district has been applied for 6 weeks. We would like to state that according to the variability of the incubation period of rabies this time should be extended to at least 6 months.

In conclusion:

- international transport, especially of dogs and cats, should be well monitored;
- human post exposure treatment should be applied in non-enzootic areas, when the origin of the biting rabid animal cannot be reliably established;
- pre-exposure immunization of individuals in danger of exposure, especially veterinarians and laboratory workers, should be monitored.

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FIGURE 4.2.1

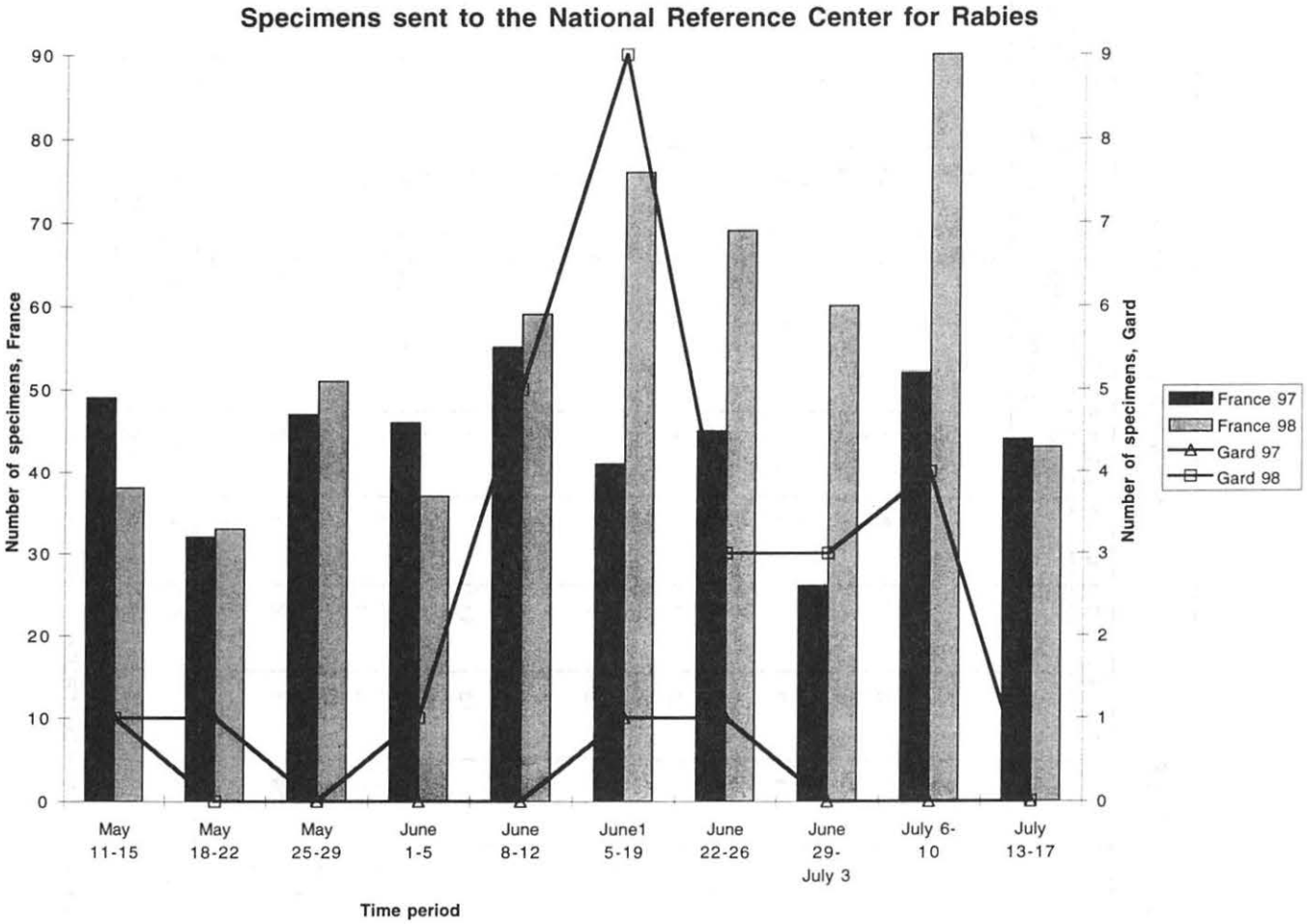
Specimens sent to the National Reference Center for Rabies
Number of specimens, France
Number of specimens, Gard
Time period
France 97
France 98
Gard 97
Gard 98
May 11-15
May 18-22
May 25-29
June 1-5
June 8-12
June1 5-19
June 22-26
June 29- July 3
July 6- 10
July 13-17

TABLE 5.1

EUR EUROPE 2/98 RABIES CASES 1. 4.98 - 30. 6.98

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
ALB ALBANIA *							0						0		0
AUT AUSTRIA							0	1	-	-	-	-	1		1
BEL BELGIUM							0	1	-	-	-	-	1		1
BIH BOSNA I HERCEGOWIN**							0						0		0
BUL BULGARIA							0	-	-	-	-	4	4		4
BYE BELARUS	8	2	2	3	-	-	15	19	-	-	-	-	19		34
CRO CROATIA	2	3	1	-	1	-	7	29	-	1	-	1	31		38
CZH CZECH REPUBLIC	-	1	-	-	-	-	1	14	1	-	-	-	15		16
DEN DENMARK							0	-	-	-	-	2	2		2
DEU FED.REP.OF GERMANY	-	-	-	-	1	-	1	14	-	-	-	-	14		15
EST ESTONIA	4	7	1	-	1	-	13	37	2	1	-	13	53		66
FIN FINLAND *							0						0		0
FRA FRANCE	1	-	-	-	-	-	1						0		1
FRY FED.REP.OF YUGOSLA	1	1	-	-	-	-	2	7	-	-	2	-	9		11
GRE GREECE *							0						0		0
HUN HUNGARY	8	10	4	-	-	-	22	66	-	1	2	-	69		91
ICE ICELAND *							0						0		0
IRE IRELAND *							0						0		0
ITA ITALY *							0						0		0
LTU LITHUANIA	3	2	6	1	-	-	12	22	-	4	1	2	29		41
LUX LUXEMBOURG *							0						0		0
LVA LATVIA	6	11	-	-	-	-	17	26	1	-	1	8	36		53
MLD MOLDOVA	-	2	1	-	-	-	3	4	-	-	-	-	4		7
NET NETHERLANDS							0	-	-	-	-	1	1		1
NOR NORWAY *							0						0		0
POL POLAND	8	12	11	-	-	-	31	184	2	10	1	24	221		252
POR PORTUGAL *							0						0		0
ROM ROMANIA	1	3	-	-	-	-	4	5	-	-	-	1	6		10
RUS RUSSIAN FEDERATION	123	42	63	8	26	11	273	149	2	5	1	14	171		444
SPA SPAIN 1)	4	-	-	-	-	-	4						0		4
SVK SLOVAK REPUBLIC	12	5	1	-	-	-	18	52	-	1	-	2	55		73
SVN SLOVENIA							0	4	-	-	-	-	4		4
SWE SWEDEN *							0						0		0
SWI SWITZERLAND + LIEC*							0						0		0
TUR TURKEY	29	1	5	-	2	1	38						0		38
TYM MAKEDONIJA *							0						0		0
UKR UKRAINE **							0						0		0
UNK UNITED KINGDOM *							0						0		0
TOTAL	210	102	95	12	31	12	462	634	8	23	8	72	745	0	1207
PER CENT	17.4	8.5	7.9	1.0	2.6	1.0	38.3	52.5	0.7	1.9	0.7	6.0	61.7	0.0	100.0

* NO CASES ** NO DATA 1) NORTH AFRICA

TABLE 5.2

EUR EUROPE 1-2/98 RABIES CASES 1. 1.98 - 30. 6.98

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
ALB	ALBANIA *							0						0		0
AUT	AUSTRIA							0	2	-	-	-	-	2		2
BEL	BELGIUM							0	1	-	-	-	-	1		1
BIH	BOSNA I HERCEGOWIN**							0						0		0
BUL	BULGARIA							0	-	-	-	-	8	8		8
BYE	BELARUS	17	3	2	4	-	-	26	19	-	-	-	16	35		61
CRO	CROATIA	4	7	1	-	2	-	14	165	-	3	-	3	171		185
CZH	CZECH REPUBLIC	1	2	-	-	-	-	3	41	1	-	-	-	42		45
DEN	DENMARK							0	-	-	-	-	3	3		3
DEU	FED.REP.OF GERMANY	1	-	-	-	1	-	2	43	-	2	1	-	46		48
EST	ESTONIA	12	12	1	-	1	-	26	53	2	2	1	22	80		106
FIN	FINLAND *							0						0		0
FRA	FRANCE	1	-	-	-	-	-	1	1	-	-	-	1	2		3
FRY	FED.REP.OF YUGOSLA	4	5	-	-	-	-	9	34	-	-	2	1	37		46
GRE	GREECE *							0						0		0
HUN	HUNGARY	15	28	12	1	1	-	57	238	-	2	4	-	244		301
ICE	ICELAND *							0						0		0
IRE	IRELAND *							0						0		0
ITA	ITALY *							0						0		0
LTU	LITHUANIA	6	8	15	1	-	-	30	34	1	4	1	10	50		80
LUX	LUXEMBOURG *							0						0		0
LVA	LATVIA	10	13	-	-	-	-	23	36	3	-	1	18	58		81
MLD	MOLDOVA	2	2	1	-	-	-	5	14	-	-	-	-	14		19
NET	NETHERLANDS							0	-	-	-	-	2	2		2
NOR	NORWAY *							0						0		0
POL	POLAND	18	27	22	-	-	-	67	499	3	18	4	41	565		632
POR	PORTUGAL *							0						0		0
ROM	ROMANIA	2	4	-	-	18	-	24	8	-	-	-	1	9		33
RUS	RUSSIAN FEDERATION	255	106	145	14	53	13	586	386	3	8	1	28	426		1012
SPA	SPAIN 1)	7	-	-	-	-	-	7						0		7
SVK	SLOVAK REPUBLIC	16	8	1	-	-	-	25	132	-	1	-	2	135		160
SVN	SLOVENIA							0	11	-	-	-	-	11		11
SWE	SWEDEN *							0						0		0
SWI	SWITZERLAND + LIEC*							0						0		0
TUR	TURKEY	60	1	7	1	2	1	72						0		72
TYM	MAKEDONIJA *							0						0		0
UKR	UKRAINE **							0						0		0
UNK	UNITED KINGDOM *							0						0		0
TOTAL		431	226	207	21	78	14	977	1717	13	40	15	156	1941	0	2918
PER CENT		14.8	7.7	7.1	0.7	2.7	0.5	33.5	58.8	0.4	1.4	0.5	5.3	66.5	0.0	100.0

* NO CASES ** NO DATA 1) NORTH AFRICA

TABLE 5.3

EUR EUROPE 2/98	RABIES CASES 'OTHER ANIMAL SPECIES'												1. 4.98 - 30. 6.98	
LOCATION	OTH.DOM.ANIMALS		OTHER WILD ANIMALS										UNSPEC-IFIED	TOTAL
CODE NAME	DONKEY	PIG	JACKAL	WOLF	RACCOON DOG	INSECT BAT	BEAVER	BLACK RAT	HOUSE MOUSE	VOLE	HARE	OTHERS		
BUL BULGARIA	-	-	-	-	-	-	-	-	-	-	-	-	4	4
CRO CROATIA	-	-	1	-	-	-	-	-	-	-	-	-	-	1
DEN DENMARK	-	-	-	-	-	2	-	-	-	-	-	-	-	2
EST ESTONIA	-	-	-	-	13	-	-	-	-	-	-	-	-	13
LTU LITHUANIA	-	-	-	-	2	-	-	-	-	-	-	-	-	2
LVA LATVIA	-	-	-	-	8	-	-	-	-	-	-	-	-	8
NET NETHERLANDS	-	-	-	-	-	1	-	-	-	-	-	-	-	1
POL POLAND	-	-	-	-	24	-	-	-	-	-	-	-	-	24
ROM ROMANIA	-	-	-	-	-	-	-	-	-	-	-	1	-	1
RUS RUSSIAN FEDERATION	-	11	-	6	3	-	2	1	1	-	1	-	-	25
SVK SLOVAK REPUBLIC	-	-	-	-	-	1	-	-	-	1	-	-	-	2
TUR TURKEY	1	-	-	-	-	-	-	-	-	-	-	-	-	1
TOTAL	1	11	1	6	50	4	2	1	1	1	1	1	4	84
PER CENT	1.2	13.1	1.2	7.1	59.5	4.8	2.4	1.2	1.2	1.2	1.2	1.2	4.8	100.0

RABIES CASES 1. 4.98 - 30. 6.98

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
AUT AUSTRIA															
103 EISENSTADT - LAND							0	1	-	-	-	-	1		1
CZH CZECH REPUBLIC															
02 South Bohemia							0	1	-	-	-	-	1		1
04 North Bohemia							0	8	1	-	-	-	9		9
06 South Moravia	-	1	-	-	-	-	1	5	-	-	-	-	5		6
TOTAL	0	1	0	0	0	0	1	14	1	0	0	0	15	0	16
PER CENT	0.0	6.3	0.0	0.0	0.0	0.0	6.3	87.5	6.3	0.0	0.0	0.0	93.8	0.0	100.0
SVK SLOVAK REPUBLIC															
1 Bratislavsky kraj	1	-	-	-	-	-	1	18	-	-	-	-	18		19
2 Trnavsky kraj							0	2	-	-	-	-	2		2
3 Trenciansky kraj							0	4	-	-	-	-	4		4
4 Nitriansky kraj	-	1	-	-	-	-	1	8	-	-	-	-	8		9
5 Zilinsky kraj							0	-	-	1	-	-	1		1
6 Banskobystricky kraj	1	2	-	-	-	-	3	5	-	-	-	-	5		8
7 Presovsky kraj	5	1	-	-	-	-	6	8	-	-	-	2	10		16
8 Kosicky kraj	5	1	1	-	-	-	7	7	-	-	-	-	7		14
TOTAL	12	5	1	0	0	0	18	52	0	1	0	2	55	0	73
PER CENT	16.4	6.8	1.4	0.0	0.0	0.0	24.7	71.2	0.0	1.4	0.0	2.7	75.3	0.0	100.0
SVN SLOVENIA															
023 DOMZALE							0	2	-	-	-	-	2		2
043 KAMNIK							0	1	-	-	-	-	1		1
060 LITIJA							0	1	-	-	-	-	1		1
TOTAL	0	0	0	0	0	0	0	4	0	0	0	0	4	0	4

RABIES CASES 1. 4.98 - 30. 6.98

LOCATION CODE NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
BEL BELGIUM															
LX LUXEMBOURG							0	1	-	-	-	-	1		1
DEN DENMARK															
101 Copenhagen							0	-	-	-	-	2	2		2
DEU FEDERAL REPUBLIC OF GERMANY															
05 Nordrhein-Westfalen	-	-	-	-	1	-	1	12	-	-	-	-	12		13
06 Hessen							0	1	-	-	-	-	1		1
10 Saarland							0	1	-	-	-	-	1		1
TOTAL	0	0	0	0	1	0	1	14	0	0	0	0	14	0	15
PER CENT	0.0	0.0	0.0	0.0	6.7	0.0	6.7	93.3	0.0	0.0	0.0	0.0	93.3	0.0	100.0
FRA FRANCE															
30 GARD	1	-	-	-	-	-	1						0		1
NET NETHERLANDS															
04 GRONINGEN							0	-	-	-	-	1	1		1
SPA SPAIN															
51 CEUTA (NORTH AFRICA)	1	-	-	-	-	-	1						0		1
52 MELILLA (NORTH AFRICA	3	-	-	-	-	-	3						0		3
TOTAL	4	0	0	0	0	0	4	0	0	0	0	0	0	0	4

RABIES CASES 1. 4.98 - 30. 6.98

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
BUL	**BULGARIA**															
04	V.TARNOVO							0	-	-	-	-	1	1		1
05	VIDIN							0	-	-	-	-	1	1		1
06	VRATZA							0	-	-	-	-	2	2		2
TOTAL		0	0	0	0	0	0	0	0	0	0	0	4	4	0	4
ROM	**ROMANIA**															
01	ALBA							0	1	-	-	-	-	1		1
04	BACAU	-	2	-	-	-	-	2	1	-	-	-	-	1		3
05	BIHOR	1	-	-	-	-	-	1	-	-	-	-	1	1		2
22	HUNEDOARA	-	1	-	-	-	-	1	1	-	-	-	-	1		2
34	SUCEAVA							0	1	-	-	-	-	1		1
38	VASLUI							0	1	-	-	-	-	1		1
TOTAL		1	3	0	0	0	0	4	5	0	0	0	1	6	0	10
TUR	**TURKEY**															
05	AMASYA	1	-	-	-	-	-	1						0		1
16	BURSA	4	-	-	-	-	-	4						0		4
27	GAZIANTEP	3	-	-	-	-	-	3						0		3
31	HATAY	3	-	-	-	-	-	3						0		3
34	ISTANBUL	6	1	2	-	1	-	10						0		10
35	IZMIR	5	-	-	-	-	-	5						0		5
36	KARS	-	-	1	-	-	-	1						0		1
44	MALATYA	-	-	1	-	-	-	1						0		1
45	MANISA	-	-	-	-	1	-	1						0		1
46	KAHRAMANMARAS	-	-	-	-	-	1	1						0		1
54	SAKARYA	2	-	-	-	-	-	2						0		2
55	SAMSUN	1	-	-	-	-	-	1						0		1
63	SANLIURFA	1	-	-	-	-	-	1						0		1
68	AKSARAY	1	-	-	-	-	-	1						0		1
69	BAYBURT	1	-	-	-	-	-	1						0		1
73	SIRNAK	1	-	1	-	-	-	2						0		2
TOTAL		29	1	5	0	2	1	38	0	0	0	0	0	0	0	38
PER CENT		76.3	2.6	13.2	0.0	5.3	2.6	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

RABIES CASES 1. 4.98 - 30. 6.98

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
BYE	BELARUS															
02	Vitebsk Region	5	1	2	3	-	-	11	10	-	-	-	-	10		21
03	Gomel Region	2	1	-	-	-	-	3						0		3
04	Grodno Region	1	-	-	-	-	-	1	4	-	-	-	-	4		5
05	Minsk Region							0	5	-	-	-	-	5		5
TOTAL		8	2	2	3	0	0	15	19	0	0	0	0	19	0	34
PER CENT		23.5	5.9	5.9	8.8	0.0	0.0	44.1	55.9	0.0	0.0	0.0	0.0	55.9	0.0	100.0
LTU	LITHUANIA															
33	Alytaus							0	2	-	-	-	-	2		2
41	Vilniaus							0	2	-	-	-	-	2		2
43	Zarasu							0	-	-	-	-	1	1		1
46	Jonavos							0	1	-	-	-	-	1		1
49	Kaisiadoriu	2	-	1	-	-	-	3	-	-	2	-	-	2		5
51	Marijampoles	-	-	1	-	-	-	1	1	-	-	-	-	1		2
54	Kelmes							0	1	-	-	-	-	1		1
55	Klaipedos	-	-	1	-	-	-	1						0		1
65	Pakruojo	-	-	1	-	-	-	1						0		1
66	Panevezio	-	1	-	-	-	-	1						0		1
67	Pasvalio							0	1	-	-	-	-	1		1
68	Plunges							0	-	-	-	1	-	1		1
72	Raseiniai	-	1	-	-	-	-	1	5	-	1	-	-	6		7
73	Rokiskio							0	1	-	-	-	-	1		1
77	Taurages	-	-	-	1	-	-	1	3	-	-	-	-	3		4
78	Telsiu							0	1	-	-	-	-	1		1
85	Salcininku	1	-	-	-	-	-	1	1	-	-	-	-	1		2
87	Silales							0	1	-	-	-	-	1		1
88	Silutes	-	-	2	-	-	-	2	1	-	-	-	-	1		3
89	Sirvintu							0	1	-	-	-	1	2		2
94	Jurbarko							0	-	-	1	-	-	1		1
TOTAL		3	2	6	1	0	0	12	22	0	4	1	2	29	0	41
PER CENT		7.3	4.9	14.6	2.4	0.0	0.0	29.3	53.7	0.0	9.8	2.4	4.9	70.7	0.0	100.0

CRO CROATIA RABIES CASES 1. 4.98 - 30. 6.98

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
002	BENKOVAC	-	-	-	-	1	-	1						0		1
004	BJELOVAR							0	3	-	-	-	-	3		3
011	CAKOVEC							0	-	-	1	-	-	1		1
018	DRNIS	-	-	1	-	-	-	1	1	-	-	-	-	1		2
023	DAKOVO							0	1	-	-	-	-	1		1
024	DURDEVAC	-	1	-	-	-	-	1						0		1
025	GARESNICA							0	1	-	-	-	-	1		1
031	IMOTSKI							0	1	-	-	-	-	1		1
034	JASTREBARSKO							0	2	-	-	-	-	2		2
039	KNIN							0	1	-	-	-	-	1		1
040	KOPRIVNICA							0	1	-	-	-	-	1		1
046	KUTINA							0	1	-	-	-	-	1		1
049	LUDBREG	1	-	-	-	-	-	1						0		1
052	NASICE							0	1	-	-	-	-	1		1
057	OGULIN							0	1	-	-	-	-	1		1
061	OSIJEK	1	-	-	-	-	-	1						0		1
067	PETRINJA							0	1	-	-	-	-	1		1
079	SLAVONSKI BROD							0	3	-	-	-	-	3		3
080	SLUNJ							0	1	-	-	-	-	1		1
083	SIBENIK							0	1	-	-	-	-	1		1
087	VARAZDIN							0	1	-	-	-	-	1		1
092	VRBOVEC	-	1	-	-	-	-	1	1	-	-	-	-	1		2
098	ZADAR							0	2	-	-	-	1	3		3
099	SVETI IVAN ZELINA							0	1	-	-	-	-	1		1
101	ZUPANJA							0	2	-	-	-	-	2		2
102	GRAD ZAGREB	-	1	-	-	-	-	1	2	-	-	-	-	2		3
TOTAL		2	3	1	0	1	0	7	29	0	1	0	1	31	0	38
PER CENT		5.3	7.9	2.6	0.0	2.6	0.0	18.4	76.3	0.0	2.6	0.0	2.6	81.6	0.0	100.0

RABIES CASES 1. 4.98 - 30. 6.98

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
EST	**ESTONIA**															
01	Harjumaa	1	5	-	-	-	-	6	11	-	-	-	6	17		23
03	Ida-Virumaa							0	1	-	-	-	-	1		1
04	Jogevamaa	-	1	-	-	-	-	1	3	-	-	-	1	4		5
05	Jaervamaa	1	-	-	-	-	-	1	4	-	-	-	1	5		6
06	Laeaenemaa	-	-	1	-	-	-	1	-	-	-	-	1	1		2
07	Laeaene-Virumaa	2	-	-	-	-	-	2	2	-	-	-	-	2		4
08	Polvamaa							0	-	-	-	-	1	1		1
09	Paernumaa	-	-	-	-	1	-	1	3	1	-	-	-	4		5
10	Raplamaa							0	1	-	-	-	1	2		2
12	Tartumaa							0	9	1	1	-	2	13		13
13	Valgamaa							0	1	-	-	-	-	1		1
14	Viljandimaa	-	1	-	-	-	-	1	2	-	-	-	-	2		3
TOTAL		4	7	1	0	1	0	13	37	2	1	0	13	53	0	66
PER CENT		6.1	10.6	1.5	0.0	1.5	0.0	19.7	56.1	3.0	1.5	0.0	19.7	80.3	0.0	100.0
LVA	**LATVIA**															
02	Aluksne							0	2	-	-	-	-	2		2
04	Bauska							0	1	-	-	1	2	4		4
05	Cesis							0	3	-	-	-	-	3		3
06	Daugavpils							0	1	-	-	-	-	1		1
07	Dobele							0	1	-	-	-	-	1		1
08	Gulbene							0	1	-	-	-	-	1		1
09	Jekabpils							0	1	-	-	-	-	1		1
11	Kraslava	-	1	-	-	-	-	1						0		1
12	Kuldiga	-	1	-	-	-	-	1						0		1
13	Liepaja	1	-	-	-	-	-	1						0		1
15	Ludza	-	1	-	-	-	-	1						0		1
17	Ogre	-	1	-	-	-	-	1	1	-	-	-	3	4		5
18	Preili							0	1	-	-	-	-	1		1
19	Rezekne	3	-	-	-	-	-	3	1	-	-	-	1	2		5
20	Riga	-	1	-	-	-	-	1						0		1
21	Saldus	-	1	-	-	-	-	1	4	-	-	-	-	4		5
23	Tukums	1	2	-	-	-	-	3						0		3
24	Valka	-	1	-	-	-	-	1	-	-	-	-	1	1		2
25	Valmiera	1	2	-	-	-	-	3	8	-	-	-	1	9		12
26	Ventspils							0	1	1	-	-	-	2		2
TOTAL		6	11	0	0	0	0	17	26	1	0	1	8	36	0	53
PER CENT		11.3	20.8	0.0	0.0	0.0	0.0	32.1	49.1	1.9	0.0	1.9	15.1	67.9	0.0	100.0

RABIES CASES 1. 4.98 - 30. 6.98

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
FRY	FEDERAL REPUBLIC OF YUGOSLAVIA															
03	Novi Sad							0	2	-	-	-	-	2		2
04	Zrenjanin	-	1	-	-	-	-	1						0		1
05	Subotica							0	-	-	-	1	-	1		1
06	Sombor							0	1	-	-	1	-	2		2
08	Pozarevac							0	2	-	-	-	-	2		2
11	Kraljevo	1	-	-	-	-	-	1	2	-	-	-	-	2		3
TOTAL		1	1	0	0	0	0	2	7	0	0	2	0	9	0	11
PER CENT		9.1	9.1	0.0	0.0	0.0	0.0	18.2	63.6	0.0	0.0	18.2	0.0	81.8	0.0	100.0
HUN	HUNGARY															
01	Budapest							0	2	-	-	-	-	2		2
02	Baranya	1	1	-	-	-	-	2	1	-	-	-	-	1		3
03	Bacs-Kiskun	-	1	-	-	-	-	1	1	-	-	-	-	1		2
04	Bekes	1	1	1	-	-	-	3	7	-	-	-	-	7		10
05	Borsod-Abauj-Zemplen	-	2	-	-	-	-	2	8	-	1	-	-	9		11
06	Csongrad	3	2	-	-	-	-	5	12	-	-	1	-	13		18
07	Fejer							0	1	-	-	-	-	1		1
09	Hajdu-Bihar	-	-	1	-	-	-	1	2	-	-	-	-	2		3
10	Heves							0	5	-	-	-	-	5		5
12	Nograd							0	2	-	-	-	-	2		2
13	Pest	2	2	-	-	-	-	4	14	-	-	-	-	14		18
14	Somogy	-	1	-	-	-	-	1						0		1
15	Szabolcs-Szat	-	-	1	-	-	-	1	3	-	-	-	-	3		4
16	Szolnok	1	-	1	-	-	-	2	6	-	-	-	-	6		8
17	Tolna							0	-	-	-	1	-	1		1
19	Veszprem							0	2	-	-	-	-	2		2
TOTAL		8	10	4	0	0	0	22	66	0	1	2	0	69	0	91
PER CENT		8.8	11.0	4.4	0.0	0.0	0.0	24.2	72.5	0.0	1.1	2.2	0.0	75.8	0.0	100.0
MLD	MOLDOVA															
01	MOLDOVA	-	2	1	-	-	-	3	4	-	-	-	-	4		7
TOTAL		0	2	1	0	0	0	3	4	0	0	0	0	4	0	7
PER CENT		0.0	28.6	14.3	0.0	0.0	0.0	42.9	57.1	0.0	0.0	0.0	0.0	57.1	0.0	100.0

POL POLAND	RABIES CASES													1. 4.98 - 30. 6.98	
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		
01 WARSZAWA							0	8	1	-	-	-	9		9
03 BIALA PODLASKA							0	14	-	-	-	1	15		15
05 BIALYSTOK	-	-	1	-	-	-	1	18	-	1	-	1	20		21
11 CHELM							0	16	-	-	-	2	18		18
13 CIECHANOW							0	9	-	1	-	1	11		11
17 ELBLAG	-	1	-	-	-	-	1	1	-	-	-	1	2		3
27 KATOWICE							0	-	-	1	-	-	1		1
29 KIELCE	1	-	-	-	-	-	1	11	-	-	-	-	11		12
35 KRAKOW							0	1	-	1	-	-	2		2
41 LESZNO	1	-	-	-	-	-	1						0		1
43 LUBLIN							0	6	-	-	-	-	6		6
45 LOMZA	-	1	2	-	-	-	3	3	-	-	-	1	4		7
49 NOWY SACZ	-	1	-	-	-	-	1	1	-	-	-	-	1		2
51 OLSZTYN	1	1	4	-	-	-	6	11	-	2	-	5	18		24
55 OSTROLEKA	-	-	1	-	-	-	1	7	-	1	-	-	8		9
59 PIOTRKOW TRYB	-	1	-	-	-	-	1						0		1
61 PLOCK							0	4	-	-	-	-	4		4
65 PRZEMYSL	-	1	-	-	-	-	1	3	-	-	-	-	3		4
67 RADOM	1	-	-	-	-	-	1	3	-	-	-	-	3		4
69 RZESZOW	-	2	-	-	-	-	2	16	-	-	-	-	16		18
71 SIEDLCE	-	2	-	-	-	-	2	6	-	-	-	-	6		8
75 SKIERNIEWICE							0	1	-	-	-	-	1		1
79 SUWALKI	-	1	3	-	-	-	4	18	-	1	-	10	29		33
83 TARNOBRZEG							0	3	-	1	-	-	4		4
85 TARNOW	1	-	-	-	-	-	1	6	-	1	-	-	7		8
87 TORUN	3	1	-	-	-	-	4	8	-	-	-	1	9		13
91 WLOCLAWEK							0	5	-	-	-	-	5		5
95 ZAMOSC							0	5	1	-	-	1	7		7
97 ZIELONA GORA							0	-	-	-	1	-	1		1
TOTAL	8	12	11	0	0	0	31	184	2	10	1	24	221	0	252
PER CENT	3.2	4.8	4.4	0.0	0.0	0.0	12.3	73.0	0.8	4.0	0.4	9.5	87.7	0.0	100.0

RUS RUSSIAN FEDERATION — RABIES CASES — 1. 4.98 - 30. 6.98

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
01	Arkhangelsk Region	2	-	-	-	-	-	2	3	-	-	-	-	3		5
07	Novgorod Region	2	-	-	-	-	-	2	33	-	-	-	5	38		40
08	Pskov Region	8	3	1	-	-	-	12	4	2	1	-	4	11		23
09	Bryansk Region							0	2	-	-	-	-	2		2
12	Twer Region							0	12	-	-	-	-	12		12
13	Kaluga Region	1	2	1	1	-	-	5	15	-	2	-	-	17		22
15	Moscow Region	7	4	-	-	-	-	11	10	-	-	-	1	11		22
16	Oryol Region	-	-	3	1	-	-	4	5	-	-	-	-	5		9
17	Ruazan Region	3	1	-	-	-	-	4						0		4
18	Smolensk Region	6	1	2	-	-	-	9	4	-	-	-	-	4		13
19	Tula Region	11	2	-	-	-	-	13	2	-	-	-	1	3		16
26	Belgorod Region	2	5	9	-	-	-	16	4	-	-	-	-	4		20
27	Voronezh Region	2	2	2	1	-	-	7						0		7
28	Kursk Region	14	8	-	-	2	1	25	17	-	2	-	-	19		44
29	Lipetsk Region	-	1	-	-	-	-	1	1	-	-	-	-	1		2
31	Astrakhan Region	9	4	4	2	2	-	21						0		21
32	Volgograd Region	3	-	6	-	4	-	13	1	-	-	-	1	2		15
33	Samara Region	1	-	1	-	-	-	2	2	-	-	-	-	2		4
34	Penza Region	1	-	2	1	-	4	8	11	-	-	-	-	11		19
35	Saratov Region							0	1	-	-	-	-	1		1
36	Ulyanovsk Region	-	1	-	-	-	-	1						0		1
37	Rep. of Kalmykiya	3	1	2	1	16	6	29	1	-	-	1	-	2		31
38	Rep. of Tatarstan	1	1	1	-	-	-	3	7	-	-	-	-	7		10
39	Krasnodar Territory	11	-	-	-	-	-	11	1	-	-	-	-	1		12
40	Stavropol Territory	3	-	2	1	1	-	7						0		7
41	Rostov Region	7	1	5	-	-	-	13	2	-	-	-	2	4		17
42	Orenburg Region	15	1	6	-	-	-	22	3	-	-	-	-	3		25
44	Rep. of Bashkortostan	11	4	13	-	1	-	29	8	-	-	-	-	8		37
46	Kaliningrad Region	-	-	3	-	-	-	3						0		3
TOTAL		123	42	63	8	26	11	273	149	2	5	1	14	171	0	444
PER CENT		27.7	9.5	14.2	1.8	5.9	2.5	61.5	33.6	0.5	1.1	0.2	3.2	38.5	0.0	100.0

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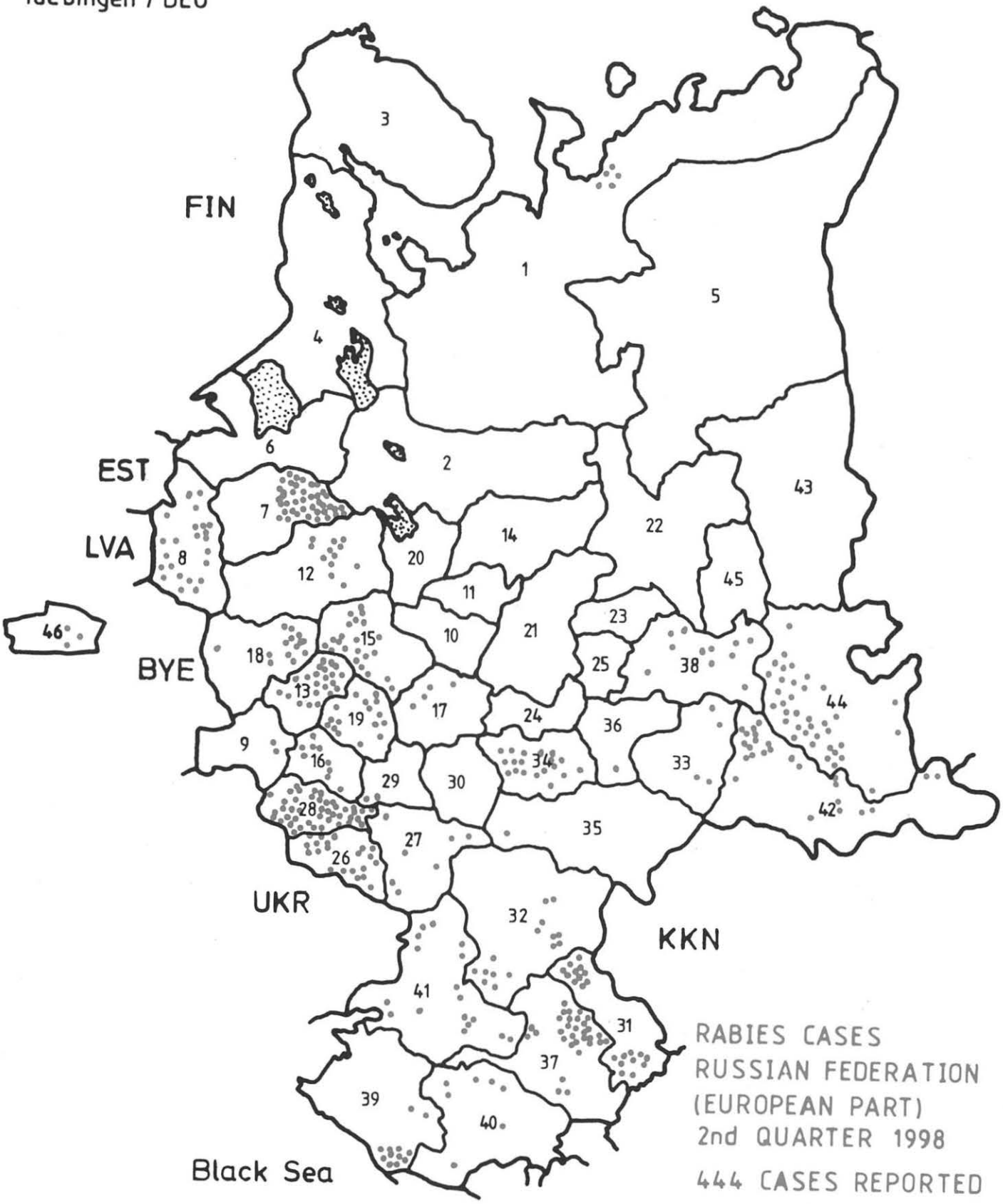

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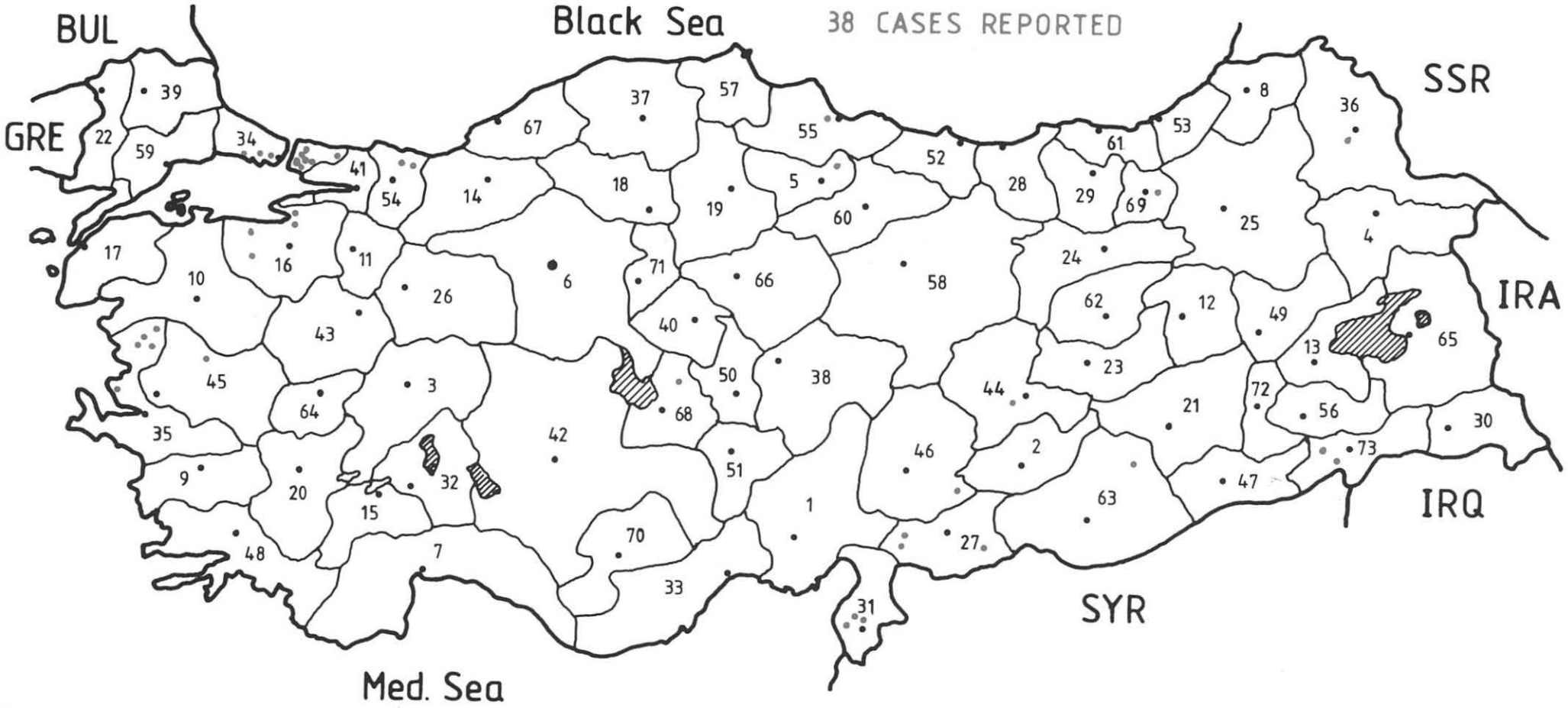
RABIES CASES TURKEY
2nd QUARTER 1998
38 CASES REPORTED



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RABIES CASES EUROPE
2nd QUARTER 1998

1207 CASES REPORTED
4 BAT RABIES CASES INCLUDED

ICE
(rabies free)

NOR
(rabies free)

FIN
(rabies free)

EST
(66)

SWE
(rabies free)

LVA
(53)

RUS
(444)

DEN
(2)

LTU
(41)

RUS

BYE
(34)

IRE
(rabies free)

UNK
(rabies free)

POL
(252)

NET
(1)

DEU
(15)

BEL
(1)

(0)

UKR
(NO DATA)

CZH
(16)

(1)
SVK
(72)

MLD
(7)

FRA
(1)

AUT
(1)

HUN
(91)

SWI
(0)

SVN
(4)

CRO
(38)

ROM
(10)

ITA
(rabies free)

BIH
(NO DATA)

FRY
(11)

BUL
(4)

TYM
(rabies free)

POR
(rabies free)

SPA
MAINLAND AND ISLANDS (rabies free)
NORTH AFRICA (4)

ALB
(rabies free)

TUR
(38)

GRE
(rabies free)

0 50 100 km

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