RABIES BULLETIN EUROPE

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Contents

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Dear Readers,

Computer age facilitates new techniques. In this and subsequent issues approaches to desk top publishing are made. The aim is to improve the presentation of Text and Tables and, later on to incorporate Figures and Graphics. We apologize if the publication might be slightly delayed due to these efforts.

The Editors

1. Introduction

This Bulletin describes the reported rabies cases in Europe for **Quarter 4, 1989,** subsequently referred to as ***"This Quarter"***.

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

In SECTION 3 (3.1-3.27) the situation for individual countries is described. Data for the European part of the Union of Soviet Socialist Republics in the 3rd and 4th quarter 1989 have not yet arrived, the first two quarters are included in the summary presentations.

In the Miscellaneous SECTION under 4.1 an article on bat rabies surveillance in Europe is given. Articles 4.2 and 4.3 are reports on an imported human rabies case in Yugoslavia and an imported dog rabies case in Milan/Italy respectively. A note on urban fox population increase and spread of rabies in the north of France is commented on under 4.4.

The rabies case data are tabulated for the fourth quarter 1989 in SECTION 5.

SECTION 6 lists the official contributors to the BULLETIN.

The geographical distribution of rabies cases in Europe for ***"This Quarter"*** is shown on maps of Europe and Turkey in the ANNEX.

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2. Summary of Rabies in Europe

The following summarizes Rabies in Europe, Fourth Quarter 1989 and comments on rabies developments and rabies trends in 1989.

Fourth Quarter 1989

During ***"This Quarter"***, 5780 rabies cases were reported in Europe. Of these were 4431 cases in wild animals (76.7% of total) and 1349 in domestic animals. Of the cases in wild animals 3958 (68.5% of total) were foxes, 1 wolf, 58 raccoon dogs, 64 badgers, 153 other mustelids, 1 raccoon, 180 deer, 6 wild boars, 2 hedgehogs, 5 bats, 2 house mice and 1 hamster. Of the 1349 domestic animals 197 were dogs (of which 111 - 56% of all dogs - were reported from Turkey, a country with dog-mediated rabies), 283 cats, 546 cattle, 263 sheep, 20 goats, 31 horses, 5 pigs, 3 other domesticated carnivores and 1 domesticated rabbit. These data are summarized in Table 1/Section 5. Table 4/Section 5 lists other animal species, less frequently involved in rabies.

Rabies-free countries in Europe participating in the surveillance were: Bulgaria, Greece, Iceland, Ireland, Norway, Portugal, Sweden and the United Kingdom of Britain and Northern Ireland. There were no cases reported from Denmark and Finland, but their last indigenously acquired case was recorded less than two years ago.

Bat rabies was reported from the Netherlands (4 cases) and France (1 case).
There was no human rabies case reported during the said period.

Comments on Developments and Trends in 1989

Rabies Data summarizing the year 1989 can be found in Tables 2, 3 and 5 of SECTION 5.
The number of rabies cases in 1989 totals 22616 (except for the 2 missing quarters of the Union of Soviet Socialist Republics). In 1988 there were 16078 rabies cases reported not including the Soviet Union (SSR).

The four quarters of 1989 compare as follows:

1st quarter	7455
2nd quarter	4845
3rd quarter	4536
4th quarter	5780

Wildlife or fox-mediated Rabies. The wildlife rabies epizootic of central Europe has mainly the red fox as reservoir and this is also the animal that passes the infection on to other animals (wild and domestic). The epidemiological situation undergoes changes according to the density of the fox population or while moving into new areas. Nevertheless the front wave of the epizootic in Europe has not much changed since 1982 and additionally, several areas have become rabies-free due to efforts in controlling the disease by oral vaccination.

In 1989 there has been a quite often drastic increase of cases in Europe (Austria, Belgium, Czechoslovakia, German Democratic Republic, Federal Republic of Germany, France, Luxembourg, Poland and Yugoslavia). This could be due to the generally noticed fact of very high fox populations and might be caused by two consecutive mild winters and high rodent populations.

Hungary, the Netherlands, Romania, Spain and Switzerland (though registering a new outbreak in the north of the country) had little changes compared to the previous year.

Finland, which was reinfected after many years in 1988 registered the last cases in February 1989 after a very efficient effort to eliminate the rabies focus by means of oral vaccination of foxes and raccoon dogs. Italy, reinfected in 1988 from the Yugoslavian border used the same strategy and seems close to become rabies-free again.

Urban or Dog-mediated Rabies. There is only one country in Europe showing a clear picture of urban rabies: Turkey. The number of cases has declined since 1981.

Bat Rabies.
Bat rabies continues mainly in areas without terrestrial rabies. Cases are declining since 1987. Seven countries reported bat rabies in 1989 - the Netherlands (22), the Federal Republic of Germany (9), Spain (5), France (2), Denmark, German Democratic Republic and Czechoslovakia 1 case each.

Human Rabies.
There was one imported case each reported in 1989 in Czechoslovakia and Yugoslavia and there were 5 indigenously acquired cases in the Union of Soviet Socialist Republics (in two quarters).

3. Rabies in Individual Countries

3.1 Austria AUT

by Helmut Schnabl

During *"This Quarter"*, 610 rabies cases in animals were registered. This amounted to an increase of 107% compared to the third quarter 1989 (295 animals) and an increase of 86% compared to the fourth quarter 1988 (328 animals). Of 589 rabid wild animals (97% of total) 519 were foxes, 13 badgers, 3 polecats, 1 was a large weasel, 31 were stone martens and 22 roe deer; of 21 rabid domestic animals (3% of total) 3 were dogs, 10 cats, 2 cattle, 5 sheep and 1 was a horse.

The distribution of rabies cases by Bundesländer (federal provinces) and Bezirke (districts) was as follows:

Burgenland: all the Bezirke except Rust
Kärnten: Bezirke St.Veit/Glan, Völkermarkt,Wolfsberg
Niederösterreich: Krems-Stadt, Gmünd, Horn, Krems-Land, Neunkirchen, Melk, Wiener Neustadt, Zwettl
Oberösterreich: Braunau/Inn, Freistadt, Gmunden, Grieskirchen, Kirchdorf/Krems, Perg, Ried/Innkreis, Wels-Land, Vöcklabruck
Salzburg: Salzburg Umgebung and Tamsweg
Steiermark: Bruck/Mur, Fürstenfeld, Graz/Umgebung, Hartberg, Leoben, Liezen, Mürzzuschlag, Murau, Radkersburg, Voitsberg, Weiz

Free of rabies were the Bundesländer Wien, Vorarlberg and Tirol.

Summary 1989
17958 samples suspected of being rabid were examined in 1989 nearly 20% more than during the previous year (15132 samples).

1890 animals were diagnosed rabid in 1989, 6% more than during 1988 (1786 cases).

Of the 1831 rabid wild animals 1618 were foxes (1988: 1512 foxes), 68 badgers (78), 84 stone martens (36), 54 roe deer (65), 5 polecats (7), 1 boar and 1 large weasel (1988 1 fallow deer and 1 chamois). Of 59 rabid domestic animals were 5 dogs (1988 - 5 dogs as well), 34 cats (15), 12 cattle (46), 7 sheep (17), 1 horse (1988 - 1 pig and 1 goat).

3.2 Belgium BEL

by J. Tambeur

232 rabies cases were confirmed during *"This Quarter"* in 186 localities of the provinces Hainaut, Liége, Luxembourg and Namur. Of these were 121 cases in domestic animals (2 dogs, 10 cats, 81 cattle, 4 horses, 23 small ruminants and 1 pig) and 111 cases in wild animals (104 foxes, 4 mustelids and 3 roe deer).

There was an increase of cases by 9.5% compared to the previous quarter and by 5.5% compared to the fourth quarter 1988. However, there was a decrease of cases by 15.5% in foxes as compared to the fourth quarter 1988.

There was a total of 842 cases in 1989, an increase of 64% compared to the previous year. That was due to a great number of cases in spring and in autumn.

The oral vaccination of foxes was carried out during autumn 1989 and is going to be repeated in spring and autumn 1990 covering each time the total infected area of the country which amounts to 10200 km².

3.3 Bulgaria BUL

The country remained rabies-free.

3.4 Czechoslovakia CZE

by M. Olach and J. Neumann

During *"This Quarter"* 338 cases of rabies were diagnosed on the territory of Czechoslovakia. Of these 312 occurred in wildlife (92.3%) and 26 in domestic animals (7.7%). Of the total number of wild animals the disease was found in 287 foxes (92%), 6 badgers (1.9%), 9 martens (2.9%), 8 roe deer (2.6%), 1 wild boar (0.3%) and 1 hamster (0.3%). Of 26 cases in domestic animals 17 occurred in cats, 5 in dogs, 3 in sheep and one case in cattle.
In comparison with the same quarter of 1988 there was a decrease by 78 cases (18.7%).

There was no case of rabies reported in man during *"This Quarter"*.

Summary 1989
The total number of cases

reached 1713, i.e. 16.8% more than in 1988 (1580). In Bohemia and Moravia there were 1462 cases (85.4%), in Slovakia 250 (14.6%).

Of the total number of affected animals the disease in wild animals represents 94.5% (1619 cases) and in domestic animals 5.4% (93 cases). The infection was confirmed in 1542 foxes (90%), 13 badgers, 37 martens, 22 female roe deer, 1 raccoon dog, 1 wolf, 1 wild boar, 1 hamster and one bat. Of 93 rabid domestic animals were 61 cats, 20 dogs, 2 cattle, 7 sheep, 1 goat, 1 Vietnamese pig and 1 domestic rabbit.

The highest number of rabies cases was found in the region of West Bohemia (416), followed by North Bohemia(273), Central Bohemia (202), North Moravia (199). The highest incidence was registered in the district of Chomutov (75), Karlovy Vary (68), Tachov (66), Blansko (60), Klatovy (52), Domazlice (46).
The peak incidence was in the 1st quarter in March (241 cases), the lowest incidence was registered in July (87) and in December (85).

At present rabies on the territory of Czechoslovakia is registered in 344 foci involving 86 districts.

Oral imunisation of foxes has been started in three districts of West Bohemia (Klatovy, Domazlice, Tachov) in spring of 1989. This activity is carried out in connection with trans-border immunisation trials in Bavaria and is done in cooperation with the WHO Rabies Centre in Tübingen. 80,000 Tübingen vaccine baits have been distributed in the course of two campaigns in spring and autumn 1989.

3.5 Denmark DEN

by Eric Stougaard

During ***"This Quarter"*** no case of rabies was reported.

The country remained rabies-free in terrestrial animals during 1989. There was only one rabid bat registered.

3.6 Germany, Democratic Republic DDR

by Eberhard Karge

During ***"This Quarter"***, 978 rabies cases were diagnosed in the Democratic Republic of Germany, 40 cases less than during the previous quarter but 131 cases more than during the fourth quarter 1988. Of the 978 cases 649 (66.4%) were in wild animals (554 foxes, 10 badgers, 30 stone martens, 3 polecats, 1 raccoon, 47 roe deer, 1 red deer, 2 fallow deer, 1 wild boar) and 329 (33.6%) were in domestic animals (25 dogs, 75 cats, 113 cattle, 111 sheep, 1 goat, 3 horses).

There was a considerable concentration of cases on the right bank of the river Elbe and north of the river Havel, especially in the Bezirk (department) Potsdam. Further concentrations were seen in the south of the country along the border with Czechoslovakia, and here especially in the Bezirk Dresden.

Summary 1989
The annual total for 1989 amounted to 3596 cases, 1206 more than during the previous year.

Only one bat rabies case was reported during the year.

In October 1989 a first trial of **oral immunisation of foxes** against rabies was started covering an area of ca. 3000 km². It comprises the island of Rügen and 4 northern districts (Kreise) along the border with the Federal State of Schleswig-Holstein (DEU). SAD type vaccine was developed in the German Democratic Republic which meets WHO requirements. 15-20 vaccine baits per km² were distributed by hunters voluntarily.

3.7 Germany, Federal Republic DEU

by Winfried W. Müller

4th Quarter 1989
A total of 888 rabies cases was reported during ***"This Quarter"***, 294 cases more than during the previous quarter and 35 less than during the fourth quarter 1988. 84.1% of the cases were in wild animals (639 foxes, 20 badgers, 29 stone martens, 53 roe deer, 1 red deer, 3 fallow deer, 2 wild boar), 15.9% in domestic animals (2 dogs, 25 cats, 7 horses, 71 cattle, 33 sheep, 3 goats).

Close to 50% of all cases occurred in the Bundesland (federal state) Hessen. The Bundesländer Hessen, Rheinland-Pfalz and Baden-Württemberg experienced a substantial increase to the previous quarter. All other Bundesländer remained stable.

Summary 1989
The annual total amounted to 3228 cases showing an increase of 600 cases (22.8% compared to 1988.

There were 9 bat rabies cases in 1989; all identified bats were *Eptesicus serotinus*.

Seven of them were located as previously in the coastal regions of North and Baltic Sea but three *Eptesicus serotinus* were diagnosed in Berlin-West.

Further investigations of 13 *Myotis daubentoni*, 8 *Eptesicus serotinus* and 1 *Plecotus auritus* in Berlin-West (from 12.7.89 to 12.9.89) revealed negative results.

The field trial of **oral vaccination of foxes** against rabies was continued. Though with little success in Hessen, in 5 Bundesländer (Niedersachsen, Nordrhein-Westfalen, Rheinland-Pfalz, Baden-Württemberg and Bayern) a 76% reduction of rabies cases was achieved when compared with 1983, the start of the trial. Many areas have become rabies-free.
In Schleswig-Holstein a cordon vaccination successfully withstood a reinfection at the border to the German Democratic Republic where an outbreak occurred with great tendency to spread.
Some of the set-backs of the trial in 1989 might be due to a high fox population caused by two consecutive mild winters, and high rodent populations.

Bait delivery by single engine aircraft has successfully been tried at various places in Germany since 1987. Results on seroconversion and bait uptake in foxes were quite encouraging, and at least equal to hand distribution. Air-baited areas were freed and kept free from rabies. Therefore air-borne baiting will probably be t h e method of choice in future.

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3.8 Finland FIN

by Bengt Westerling

During *"This Quarter"* there were no cases of rabies detected in Finland.

During the said period the brains of 390 animals were examined for rabies by immunofluorescence; among them 8 dogs, 16 cats, 251 raccoon dogs, 87 foxes and 21 other predators of various species.

Summary 1989
In 1989, rabies was diagnosed in 4 raccoon dogs and 2 foxes **- the last case on the 16th of February.**

From the whole country 1290 animals were examined for rabies by direct immunofluorescence on brain tissue, among them 62 dogs, 137 cats, 246 foxes, 629 raccoon dogs, 55 badgers and 83 predators of other species.

The field trial on **oral immunization of raccoon dogs and foxes** with Tübingen baits, which was started in 1988, was continued. In mid-April 119,100 baits were distributed over an approx. 8000 km² large area, of which 500 km² were baited **by air.**

The surveillance results indicate a seroconversion rate of >70% in adult raccoon dogs and foxes but only < 20% of the cubs born the same spring were proven seropositive. This in spite of a high incidence of tetracycline deposition in jaw bones and teeth. As the latter constitute a majority of the summer population, the time of year chosen for the bait distribution was too early in order to produce a satisfactory immunity level in the total population.
In late September a third distribution campaign was executed, covering the 1700 km² large area estimated to have been infected. 30,000 Tübingen baits were distributed: 22,000 by air and 8,000 by local hunters over 1200 km² and 500 km² respectively. For the time being no definite results can be presented.

Of the animals examined during 1989, 366 raccoon dogs, 125 foxes and 44 badgers emanated from the field trial area, which constitutes about 6.3 animals per 100 km² .

3.9 France FRA

by Jean Blancou

1080 rabies cases were registered during *"This Quarter"*, 138 cases more than during the previous quarter. 792 cases were noted in the fox (73.3%), 47 in other wild animals and 241 in domestic animals (11 dogs, 38 cats, 88 cattle, 91 small ruminants, 12 horses, 1 rabbit).

The départements registering the greatest number of cases during *"This Quarter"* were Nièvre (150 cases) and Oise (116 cases).

A general tendency was seen during *"This Quarter"* in-as-much as rabies progressed towards west in the départements Seine-Maritime and Eure.

The **rabies totals in 1989** amounted to 4214 cases.

3.10 Greece GRE

by A. Saravanos

The country remained rabies-free.

3.11 Hungary HUN

by Laszlo Koltai

During *"This Quarter"*, 349 rabies cases were diagnosed in Hungary, 23 cases less than during the same period last year (372). 81% of all the cases were in foxes (87.4% in 4/88).

The most infected Komitate (provinces) were the following: Somogy (49 cases), Fejér (31), Borsod-Abanj-Zemplén (29) and Bacs-Kiskun (29).

The obligatory vaccination of dogs was still carried out during the fourth quarter. The number of dogs vaccinated in 1989 came to 1,499,561, 4.8% more than during the previous year.

Summary 1989
The total number of rabies cases in 1989 amounted to 1061 (1988 = 1176). Of these were 857 cases in wild animals (286 foxes, 1 badger, 2 stone martens, 1 pine marten, 3 polecats, 8 roe deer, 1 wild boar, 1 hedgehog) and 204 in domestic animals (61 dogs, 79 cats, 52 cattle, 7 sheep, 1 goat, 1 pig).

3.12 Iceland ICE

The country remained rabies-free.

3.13 Ireland IRE

The country remained rabies-free.

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3.14 Italy ITA

by Santino Prosperi

During *"This Quarter"* only 2 rabies cases were diagnosed: one in a badger in the Gorizia province, the other in a dog in Milano that was imported from the Ivory Coast; this case is described separately (see under 4.3 of this BULLETIN).

The oral vaccination program for foxes was carried out as planned in the provinces of Trieste, Gorizia and Udine.

Summary 1989
During 1989, rabies surveillance was carried out in the Alpine Regions as follows:
1) 315 wild animals (302 foxes) and 110 domestic animals were examined in Piemonte, Valle d'Aosta and Liguria; all of them were negative.
2) 905 wild animals (865 foxes) and 252 domestic animals were examined in Lombardia; one dog imported from Ivory Coast was positive.
3) 3285 wild animals (2777 foxes) and 349 domestic animals were examined in Trentino Alto Adige, Veneto and Friuli Venezia Giulia; 49 foxes, 1 roe-deer, 4 badgers were positive.

During the period August-December of 1989 only one case of rabies in a badger was reported in the Friuli Venezia Giulia region. This indicates that the outbreak along the Italian-Yugoslavian border starting one year ago seems to come under control following three campaignes of **oral fox vaccinations.**

Additionally, an Ordinance of the Ministry of Health on February 25, 1989 has effected the **compulsory vaccination** of dogs, sheep, goats and equines of that region with ERA vaccine.

3.15 Luxembourg LUX

by Joseph Kremer

During *"This Quarter"*, rabies continued to be on the increase in the north and the centre of the country. There was a total of 79 rabies cases during the prevailing quarter.

Of these were 45 in domestic animals (38 cattle, 4 small ruminants, 1 dog and 2 cats) and 34 in wild animals (32 foxes, 2 stone martens).
Only the south of the country was spared by the disease.

Samples investigated with negative results were: 17 foxes, 3 stone martens, 2 roe-deer.

Summary 1989
In 1989 there was a total of 139 rabies cases as compared to only 4 cases during the previous year.
The following animals were affected by the disease in 1989:
Domestic Animals
56 cattle, 7 sheep, 3 cats, 1 dog

Wild Animals
66 foxes, 3 stone martens, 2 roe-deer, 1 badger.

Due to the deterioration of the rabies situation the Department of Veterinary Services of Luxembourg considers as measure of control two oral vaccination campaigns of foxes in 1990. Nevertheless, these vaccinations should be coordinated with the neighbouring countries as only **with a common strategy** can the disease be controlled successfully.

3.16 Netherlands NET

by J.H.M. Nieuwenhuijs

During *"This Quarter"* 135 animals were investigated for rabies. Four bats were found positive.

Summary 1989
In 1989 a total of 1082 animals were investigated (365 adult foxes, 405 young foxes, 6 stone martens, 15 badgers, 4 polecats, 1 mouse weasel, 2 bisons, 1 squirrel, 1 muskrat, 1 black rat, 1 house mouse, 1 owl, 248 bats, 7 dogs, 18 cats, 2 cattle, 3 horses, 1 sheep).

All rabies positive animals (22) were bats. Except for one bat, a *Myotis dasycneme*, the bats belonged to the species *Eptesicus serotinus*. In comparison with the number of investigated bats in 1988 (525) the number in 1989 (248) has decreased significantly.

The prevalence rate of rabid bats however has not changed (approx.10% of all investigated samples were rabies-positive). Most of the rabid bats were found in the province Noord-Holland. It is remarkable that no rabid bat was located in the province of Friesland, which was the most important province with regard to bat-rabies in 1987. Apart from three cases in Limburg in 1988 it can be stated that bat-rabies seems to remain located to the northern provinces of the Netherlands.

3.17 Norway NOR

by Gudbrand Bakken

The country including the Svalbard Islands remained rabies-free.

3.18 Poland POL

by Jan Kolacz

In 1989 a total of 1891 rabies cases was diagnosed in animals. This is an increase by 24.5% compared to 1988 (1518) and by 12.1% to 1987 (1686 cases).

The disease was predominant in wildlife (78.6% of total cases). Among 1497 rabid wild animals there were 1176 foxes (62.2% of total cases), 151 raccoon dogs (7,9%), 76 roe deer (4%), 35 martens (1,8%), 18 badgers and 31 others (8 different species).

Among 404 rabid domestic animals (21,3%), 172 were from farm animals (9%), 149 cats (7,9%) and 83 dogs (4,4%).

Only one province (there are a total of 49) was rabies free in 1989. It was Tarnow. The highest incidence of the disease was noticed in the following provinces: Bydgoszcz (8% of total cases recorded in the country), Poznan (7,2%), Gdansk (6,9%) and Olsztyn (5,4%).

Rabid foxes were reported from 47 provinces with the highest incidence rate in Poznan (6,9% of rabies cases recorded among foxes in the country), Bydgoszcz (6,8%), Gorzow (6,2%), Szczecin (5,6-%) and Opole (5,6%); and rabid cats from 36 provinces with the highest incidence in Poznan (15,4%); rabid dogs from 28 provinces; rabid farm animals mostly cattle from 26 provinces with the highest incidence in Gdansk (27,9%) and in Bydgoszcz (14,5%); and rabid raccoon dogs from 20 provinces with the highest incidence in Olsztyn (25,1% of rabies cases recorded among raccoon dogs in the country), Suwalki (15,2%), Gdansk (11,2%), Bydgoszcz (9,9%), and Torun (6,6%).

The red fox is still responsible for maintaining the current epidemic of rabies but the raccoon dog is the second species on the list of animals infected with this disease in Poland. The following are the rabies case rates (% of total) for raccoon dogs having been recorded during the years 1986-1989: 5,7%, 5,5%, 8,3%, and 7,9%.

The data collected from two provinces (Suwalki, Olsztyn) where rabid raccoon dogs have been reported for a longer period of time indicate that in 1989 the cases of these animals outnumbered those diagnosed in foxes.

Comparing the development of single animal species involved in the rabies epizootic in 1988 and 1989, an increase of the incidence rate can be noticed among cats (by 71,2%), dogs (by 43,1%), raccoon dogs (by 20,8%) and foxes (by 18.7%).

3.19 Portugal POR

The country remained rabies-free.

3.20 Romania ROM

by Nicolae Mogos

There were 6 rabies cases registered during *"This Quarter"* - 2 cats, 3 cattle and 1 fox.
Summary 1989
The total for 1989 amounted to 23 cases - 7 sheep, 5 cattle, 4 cats, 1 dog, 3 foxes and 3 not specified wild animals.

The distribution of cases was usually scattered and cases occurred throughout the country.

3.21 Spain SPA

by Jose Luis de Felipe Gardón

During *"This Quarter"* the mainland and islands of Spain remained rabies-free in terrestrial animals.
There was one rabid dog reported from Melilla, North Africa.
No case of bat rabies was noted.
In 1989, a total of 6 cases occurred in Spain: 5 bats on the mainland and 1 dog in the Spanish part of North Africa.

3.22 Union of Soviet Socialist Republics SSR

No data received.

3.23 Sweden SWE

The country remained rabies-free.

3.24 Switzerland SWI

by Andreas Kappeler

During *"This Quarter"*, the Swiss Rabies Center received 1083 animals for examination. 10 (0.9%) of these were positive for rabies compared to 29 (4.7% of 621) in the previous quarter and 16 (2.2% of 729) in the fourth quarter of 1988. 8 cases were observed in foxes, 2 in sheep. 6 bats examined with immunofluorescence and i.c.-inoculation into suckling mice revealed no rabies virus (see also 4.1 of Miscellaneous Section).

One rabies case has been observed in the Canton of Neuchatel, close to the French border. The remaining 9 were recorded in northwestern Switzerland. In the eastern part of this area oral vaccination campaigns had taken place only until autumn 1987. After a few cases in winter 1988/89, a serious outbreak occured during the summer months. With two vaccination campaigns in 1989, the number of cases now seems to be decreasing. Unfortunately, in December 1989 another case was recorded in a non-vaccinated part of the Canton of Aargau, 15 km from the nearest case in northwestern Switzerland. In January 1990, an emergency vaccination campaign took place in the area concerned. An even larger surface will be vaccinated in spring 1990.

The two episodes have clearly shown that **oral vaccination belts** designed to protect rabies free areas **should be reasonably deep**, especially when there is a high incidence of cases in the area bordering the vaccination zone.

Summary 1989
In spite of the epizootic in northwestern Switzerland with it's 41 cases, the country recorded only 60 rabid animals in 1989. This is the lowest number since the appearence of the disease in 1967.
Since 1979, the year after the field trials on oral vaccination of foxes had started, the number of cases per year has been steadily decreasing.

No bite exposures of humans to proven rabid animals were recorded in the third quarter of 1989. The number of people treated for non-bite exposures is not recorded.

3.25 Turkey TUR

During *"This Quarter"*, 147 rabies cases were reported from Turkey. There were 144 cases in domestic animals: 111 dogs, 5 cats, 22 cattle, 3 small ruminants, 3 horses and 3 cases in wild animals: 1 wolf, 2 house mice. There has been a decrease by 10 cases compared to the previous quarter and there were only 2 cases more than during the fourth quarter 1988.
In 2 provinces, Istanbul and Zonguldak, 16 and 14 cases were reported, all other provinces reported less than 10 cases.
Summary 1989
The annual figure for 1989 amounts to 584 cases, thus, Turkey continues to report an annual figure lower than the previous year starting in 1981 with 2260 cases.
Turkey stands for a country in Europe with typical urban or **dog-mediated rabies**: 99% of all affected animals in 1989 were domestic animals.
The four provinces mostly affected in 1989 were Istanbul, Izmir, Sakarya and Samsun with 88, 41, 39 and 36 reported cases respectively.
All other infected provinces reported less than 30 cases.

3.26 United Kingdom UNK

by A.D. Hayward

The country remained rabies-free during *"This Quarter"*.
Surveillance during 3rd and 4th Quarter 1989:
Eight cases of suspected rabies in native animals were investigated during the third and fourth quarters of 1989. These involved 4 dogs, 2 foxes, a cat and a goat. Humans were bitten or scratched in three of these incidents, in these cases and two others, laboratory

tests for rabies were negative. One of the remaining three cases was resolved after observation of the suspect in isolation accommodation, and two by the diagnostic inquiry carried out by veterinary staff. A further 74 brains of animals that died while in quarantine during this period were examined with negative results.

Bats 1989

Between July and December 1989, 98 bat carcasses were presented for rabies tests, this brought the total of bats submitted during 1989 to 152 specimens, of which 12 could not be tested because of their condition. The 140 bats tested identified as:

Pipistrellus pipistrellus	66
Plecotus auritus	25
Eptesicus serotinus	5
Nyctalus noctula	5
Myotis natterii	3
Pipistrelle nathusii	2
Myotis daubentoni	1
Myotis mystacinus	1
Rhinolophus hipposideros	1
Awaiting identification	31

All were negative for rabies virus.

Total Investigations 1989:

A) Suspected Rabies Incidents Outside Quarantine

7 dogs, 4 foxes, 3 cats, 1 goat = Total 15

Negative results obtained after:

i) Laboratory examination of samples 11
ii) Veterinary examination3
iii) Observation in isolation premises 1

B) Suspected Rabies in Quarantine Premises - None.

C) Examination of Animals That Died in Quarantine

The brains of 69 dogs, 63 cats, 3 meerkats, 2 cynomologus monkeys and 1 pine marten that died while in quarantine-were examined for rabies with negative results.

3.27 Yugoslavia YUG

360 cases of rabies were reported in Yugoslavia during ***"This Quarter"*** were in foxes (95% of total), 2 in badgers, 3 in stone martens, 1 in a roe-deer, and 12 in domestic animals (4 dogs, 4 cats, 1 bovine, 1 horse, 2 sheep).

Most of the cases occurred in Croatia (201 cases), followed by Slovenia (122), Vojvodina (23) and Bosnia and Hercegovina (14).

While in previous quarters of 1989 Slovenia registered most of the rabies cases, the disease now seems to improve here. There have been **3 oral vaccination campaigns of foxes** against rabies with the SAD B19 vaccine produced in Tübingen at the WHO Reference Centre for Rabies Surveillance and Research (autumn 1988, spring, autumn 1989) which now may take its effect.

In 1989 there was a total of 1410 rabies cases, an increase of 10.7% compared to 1988 (1273 cases).

* * * * *

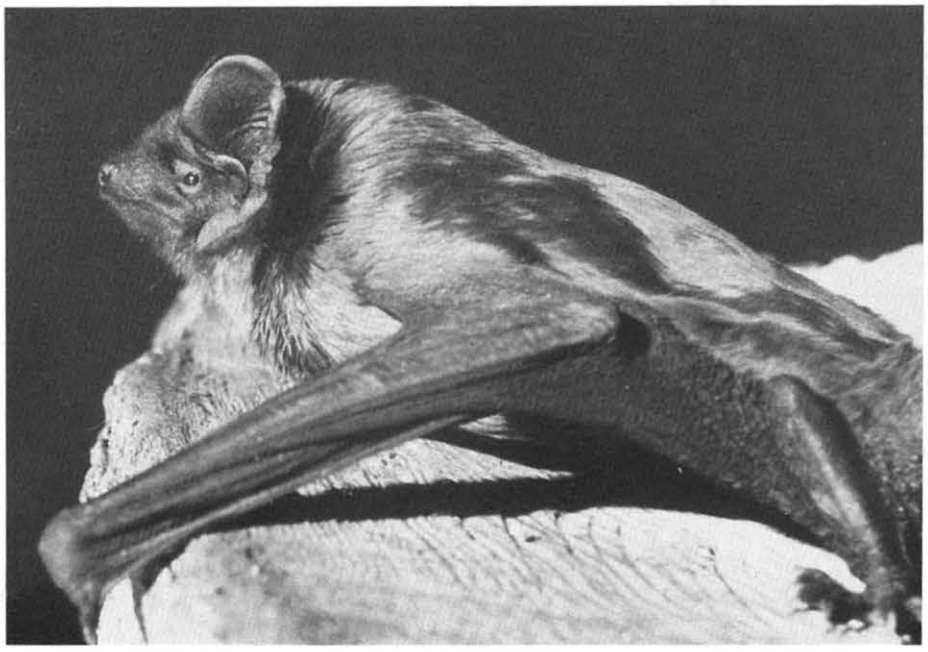

Figure: Nyctalus noctula / Photo by E.Kulzer

4. MISCELLANEOUS ARTICLES

4.1 Bat Rabies Surveillance in Europe

by Andreas Kappeler

So far Switzerland was lucky that it had not been struck by bat rabies. Nevertheless, there is considerable concern about the problem especially among bat protectionists, who have made enormous efforts to polish up the image of bats. The appearance of rabies in these highly endangered mammals now threatens to ruin the bat promotion work that has been done over the recent years.

While preparing for the eventuality of a first bat rabies case in Switzerland, we found that precise information on the species and the numbers of individuals tested for rabies so far is scarce at least for some European countries. The compilation of all the data available from the individual countries, reports and overviews published in RABIES BULLETIN EUROPE 1985-1989 and from JÜDES 1987[1] results in tables 1 and 2. We are aware of the possibility of errors, due to our misinterpretation of data presented in the references mentioned above and would highly appreciate any corrections.

Table 1: Minimum Number of Bats examined for Rabies in Europe, 1954 - 1989

Country	Year or Period	Minimum number of...examined* Species	Individuals	E.serotinus	Minimum number of... found pos.** Species	Individuals	E.serotinus
Czechoslovakia	1989	1	1	?	1	1	?
Denmark	1985-89	12	1058	663	3	164	160
Fed.Rep.of Germany	1954-84	2 |	6	1	2 |	6	1
	1985-89	11 |>11	419	121	4 |>5	39	26
Finland	1985-86	5	183	0	-	-	-
France+	1989	2	2	2	2	2	2
German Dem.Republic	1963	1 |	1	1	1 |	1	1
	1985-89	1 |>1	3	1	1 |>1	3	1
Great Britain	1988-89	12	406	16	-	-	-
Netherlands	1987-89	8	1991	350	2	147	135 ?
Poland	1972	1 |	1	?	1 |	1	?
	1985	1 |>1	1	1	1 |>1	1	1
Spain	1985-89	9	93	7	1	7	5
Soviet Soc.Rep.	1964,1977	2 |	2	1	2 |	2	1
	1985	1 |>3	274	0	1 |>3	1	0
Switzerland++	1967-89	1	262	8	-	-	-
Turkey	1956	1	1	?	1	1	0
Yugoslavia	1954	1	3	?	1	3	0
Total		23	4705	1172	9	379	333

* The species of (almost) all animals tested is known/published for the following countries only:Denmark (1 exception), Finland, France, Spain (3 exc.), Switzerland, Turkey, Yugoslavia.
** The species of all positives is known/published for: Denmark (1 exception), France, Netherlands (8 exc.), USSR, Turkey, Yugoslavia.
\+ In France 1 case was recorded in September and 1 in October 1989.
++ Data for Switzerland include all animals examined up to 31/12/89.

[1] Jüdes,U. 1987. Zum Problem d.Tollwut b.Fledermäusen. Myotis 25:41-62

Table 2: Bat Species found positive for Rabies in Europe, 1954 - Sept. 1989

Rhinolophus ferrumequinum	1	TUR 1956: 1
Eptesicus serotinus	333	DEN 160, FRA 2, DEU 27, DDR 2, NET 135?,POL 1, SPA 5, SSR 1
Myotis dasycneme	5	DEN 1986: 1, NET 1987,1989: 4
Myotis daubentonii	4	DEN 1986: 2, DEU 1986: 1, SSR 1985: 1
Myotis myotis	1	DEU 1973: 1
Nyctalus noctula	3	YUG 1954: 3
Pipistrellus nathusii	1	DEU 1986: 1
Pipistrellus pipistrellus	2	DEU 1987: 2
Vespertilio murinus	1	SSR 1985: 1
unknown / not published	28	CZE 1, DEN 1, DEU 13, DDR 2, NET 8, POL 1, SPA 2

Table 3 lists all bat species that can be found in Switzerland, together with the numbers of individuals examined. The Swiss Rabies Centre receives most of the animals from bat protectionists. The carcasses, as well as animals sent in by third parties, are always given back to bat scientists for further investigations. They, in return, help with species determination.

To know more about the prevalence of the European bat lyssavirus in different species and on bat rabies epidemiology in general, information exchange is needed. The availability of appropriate data will provide invaluable arguments for discussions on bat protection and will help to avoid unnecessary and unjustified control measures in bat populations. Countries that already face bat rabies will certainly agree on that. All the others - like Switzerland - will be very grateful to have reliable information at hand, when it's their turn to find a first bat rabies case. We therefore suggest, that all countries contributing to the Rabies Bulletin Europe report on numbers and species of bats examined on a regular (e.g. yearly) basis.

Table 3: Bat Species in Switzerland
Number of Animals examined for Rabies, 1967-1989

SPECIES*	NR. OF ANIMALS EXAMINED IN ...						
	1967-84	1985	1986	1987	1988	1989	TOTAL
Rhinolophus ferrumequinum							
Rhinolophus hipposideros							
Barbastella barbastellus							
Eptesicus nilsonii			1				1
Eptesicus serotinus			3	2	2	1	8
Hypsugo savii (Pipistrellus savii)					2	1	3
Miniopterus schreibersii							
Myotis bechsteinii			1			1	2
Myotis blythi							
Myotis brandtii							
Myotis capaccinii							
Myotis dasycneme							
Myotis daubentonii			1	2		3	6
Myotis emarginatus							
Myotis myotis		1	7	2	9	1	20
Myotis mystacinus			2		7	2	11
Myotis nattereri						1	1
Nyctalus lasiopterus							
Nyctalus leisleri			2		2		4
Nyctalus noctula	5		19	6	5	8	43
Pipistrellus kuhli						2	2
Pipistrellus nathulii	1		8	4	9	8	30
Pipistrellus pipistrellus		1	18	7	28	10	64
Pipistrellus spec.			2				2
Plecotus auritus	1		9	3	17	2	32
Plecotus austriacus				1	1		2
Vespertilio murinus			1	4			5
Tadarida tenniotis							
unknown	26						26
TOTAL	33	2	74	31	82	40	262

*Most of the bats were kindly provided/or determined by (in alphabetical order) J.D.and M. Blant, J.Gebhard, M.Haffner, A.Keller, M.Ruedi, C.Ryser, H.P.Stutz, K.Zbinden and P.Zingg.

4.2 Imported Human Rabies Case in Yugoslavia

by Milos Petrovic, Pasteur-Institute, Novi Sad, Yugoslavia+)

An eight year old boy died of rabies at the Clinic for Infectious Diseases "Dr. Fran Mihaljevic" in Zagreb on August the 30th, 1989.

The boy lived in the community of Gracanica in S.R. Bosnia and Herzegovina. During summer holidays he visited his father who was temporarily working in Tamezgida in Algeria. On 22nd of July, 1989, the boy was attacked by a stray dog and scratched over the nose and above the eye. He was taken to the nearest hospital where he received antitetanus treatment and injections of unknown substance against purulence for six consecutive days. Antirabies treatment was not applied. The dog died six days after the bite. After returning to Yugoslavia on 14th of August 1989, first symptoms of rabies appeared on 22nd of August 1989. He vomited twice, and had fever and weakness. On 23rd of August 1989, he wasn't able to eat and drink complaining of headache and pain in stomach and legs. The signs of aero- and hydrophobia also appeared on 24th of August 1989 when he was taken to the Clinic of Infectious Diseases in Zagreb with diagnosis of rabies.

On admission he got intensive antioedema therapy and large doses of human rabies immuneglobulin (HRIG) intrathecally and intramuscularly plus interferon intramuscularly with other symptomatic therapy. Because of hydrophobia he was fed by nasal probe. His condition deteriorated with attacks of aggressivity, hallucinations, aero- and hydrophobia in spite of sedation therapy. On 27th of August 1989 after cardiorespiratory arrest he was intubated and put on artificial respiration keeping his vital functions under control until 30th of August 1989 when he died.

The *post mortem* diagnosis of rabies was confirmed in the Veterinary Institute in Zagreb by fluorescent antibody technique (cerebellum, medula oblongata, Amon's horn) as well as by the mouse inoculation test.

+) SOURCE: Data are from the "Case history file" we got in the Clinic for Infectious Diseases "Dr. Fran Mihaljevic" in Zagreb.

4.3 Imported Dog Rabies Case in Italy

by Maria Tollis[1] and A. Civardi[2]

On November 28, 1989, the sudden death of a dog -a seven years old female Gordon Setter- reported in Milan six days before, was confirmed as rabies by the Istituto Zooprofilattico sperimentale of Brescia.

The case received special attention not only because of the country of origin of the dog - Ivory Coast- where the animal had lived until last summer before being brought over to Italy by its owner, but especially because the anamnesis revealed that the animal had been regularly vaccinated for rabies over the years.

The most concerning suspicion was that the lack of protection by vaccines was due to infection with a virus strain against which commonly used rabies vaccines are ineffective: it meant that rabies related viruses, such as the Mokola virus for instance, could be present in Ivory Coast as well as in other african countries. It has been largely demonstrated that traditional vaccine cannot induce protection against such rabies virus strains. This hypothesis, if confirmed, carried serious implications, not only because the dog had come into contact with different animals (dogs and cats) and people but especially because the day before dying had bitten a woman who was not subjected to post-exposure treatment until rabies infection was diagnosed in the dog. Nevertheless once rabies was confirmed, post-exposure prophylaxis was also applied to people who might have been exposed

to the virus. Almost all animals which presumably came into contact with the infected dog, were confined to quarantine facilities and all measures of sanitary prophylaxis were strictly adopted in the city of Milan to limit any risk of spreading of the disease.

The circumstances of the death of the animal and subsequent events are described below.

At the beginning of summer 1989, the dog was imported to Italy from the Ivory Coast accompanied with a regular sanitary certificate as requested by Italian authorities.

During the transport the dog stopped in London and was kept there for a 3 days quarantine. Once in Italy, at the end of July, 1989, after being visited by a veterinarian and found in good health, the dog was again vaccinated against rabies with an inactivated vaccine.

The dog was visited for a routine check by the same veterinarian in September, 1989, and again for the last time on November 14, 1989. In both cases the dog was found in optimal conditions to receive routine vaccinations respectivelydistemper-hepatitis, leptospirosis and canine parvovirus). On November 21, 1989 the dog started to show vague symptoms of illness and was brought to a veterinary clinic. Here, fever (40.1°C) and heavy breathing were recorded by the veterinarian who, suspecting a protozoaric disease, took a blood sample for laboratory analysis. The latter revealed a normal count of red and white blood cells.

Next day the dog suddenly died and was brought to the municipal facilities where routine check revealed abnormal presence of saliva.

Regrettably at this time no tissue or fluid samples were taken for post-mortem examination except for the head which was sent to the Istituto Zooprofilattico Sperimentale of Brescia where rabies was confirmed by direct immunofluorescence on brain impressions.

Immediatly all health control authorities wee alerted and especially the central veterinary laboratory of Istituto Superiore di Sanità in Rome where the virus was isolated, its antigenic composition characterized, and further investigations carried out.

Antigenic characterization of the virus using a short panel of 20 monoclonal antinucleocapsid antibodies specific for rabies and rabies related viruses (kindly provided by the late Dr.T.J. Wiktor - The Wistar Institute Philadelphia) was performed directly on brain impressions for a rapid diagnosis. Later on, once the virus was isolated both on NA and BHK-21 cells after one passage adaptation on suckling mice, the virus was also characterized on cell cultures.

The virus was shown to be a wildtype of rabies serotype 1 virus and referred to as canine biotype (urban or dog-mediated rabies). This finding eased the concerns about the possibility, that the dog had been infected by a rabies related virus.

Considering the incubation period of rabies, the country of origin of the dog and the fact that the latter didn't leave the city of Milan after its arrival in Italy, it is likely that the animal might have been exposed to rabies virus in the Ivory Cost.

The question why the dog, despite the repeated vaccinations, was not effectively immunized against rabies, remains unresolved.

This circumstances could be partially explained either by lack of immunological response in the animal or by suboptimal quality or administration of the vaccines.

However, mice immunized with several commercially available inactivated rabies vaccines were satisfactorily protected by an intracerebral challenge with lethal dose of the isolated virus which killed 100% of control animals.

This episode highlights the stringent need for all territorial health institutions to exercise the strictest measures in rabies control; they should include always a very cautious approach by laboratory personnel to suspicious cases, even if apparent circumstances might induce misleadingly to exclude rabies.

[1] Istituto Superiore di Sanita, Lab di Medicina Veterinaria, Roma/Italy
[2] Istituto Zooprofilattico Sperimentale, Brescia/Italy

4.4 Foxes adjust to Urban Habitat

by Winfried W. Müller

A note in a German hunting journal refers to the recent extension of rabies in the north of France - Département Yvelines (with Versailles) and the area Ile-de-France. The settlements in the vicinity of Paris are often single houses near great forests. There are many cats, dogs and at times many excursionists. Authorities fear that people may not judge the new situation with rabies adaquately compared to people in areas where the disease exists far longer.

Additionally, foxes adjust more and more to urban areas. It is estimated that a fox couple needs normally a basis of 500 hectares (5 km^2) to raise their cubs. In urban areas it has been noted that 5 to 6 cubs were raised on 30 hectares.

In 1987 the total costs for rabies control in France amounted to 187 million French Francs. Nevertheless, the increase of bounties to shoot foxes, gasing of fox dens, trapping and poisoning, all measures to reduce fox populations and thus minimize the risk that rabies spreads, have been of little success. Therefore, it is planned now to control rabies by oral vaccination of foxes against rabies at larger scale.

(Taken from: WILD UND HUND, Paul Parey Verlag, Hamburg, 92, March 1990, p. 27).

Rabies Case Data from Europe
are tabulated on the following pages
of Section 5

TABLE 1

EUR EUROPE 4/89 RABIES CASES 1.10.89 - 31.12.89

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	3	10	2	1	5	-	21	519	13	35	22	-	589		610
BEL BELGIUM	2	10	81	4	23	1	121	104	-	4	3	-	111		232
BUL BULGARIA *							0						0		0
CZE CZECHOSLOVAKIA	5	17	1	-	3	-	26	287	6	9	8	2	312		338
DDR GERMAN DEM. REPUBLIC	25	75	113	3	113	-	329	554	10	33	50	2	649		978
DEN DENMARK *							0						0		0
DEU FED.REP. OF GERMANY	2	25	71	7	36	-	141	639	20	29	57	2	747		888
FIN FINLAND *							0						0		0
FRA FRANCE	11	38	88	12	91	1	241	792	10	24	11	2	839		1080
GRE GREECE *							0						0		0
HUN HUNGARY	12	24	19	-	1	2	58	286	-	2	3	-	291		349
ICE ICELAND *							0						0		0
IRE IRELAND *							0						0		0
ITA ITALY 1)	1	-	-	-	-	-	1	-	1	-	-	-	1		2
LUX LUXEMBOURG	1	2	38	-	4	-	45	32	-	2	-	-	34		79
NET NETHERLANDS							0	-	-	-	-	4	4		4
NOR NORWAY *							0						0		0
POL POLAND	19	71	107	-	-	5	202	394	2	12	25	61	494		696
POR PORTUGAL *							0						0		0
ROM ROMANIA	-	2	3	-	-	-	5	1	-	-	-	-	1		6
SPA SPAIN 2)	1	-	-	-	-	-	1						0		1
SSR SOVIET SOCIAL.REP **							-						-		-
SWE SWEDEN *							0						0		0
SWI SWITZERLAND + LIECHT	-	-	-	-	2	-	2	8	-	-	-	-	8		10
TUR TURKEY	111	5	22	3	3	-	144	-	-	-	-	3	3		147
UNK UNITED KINGDOM *							0						0		0
YUG YUGOSLAVIA	4	4	1	1	2	-	12	342	2	3	1	-	348		360
TOTAL	197	283	546	31	283	9	1349	3958	64	153	180	76	4431	0	5780
PER CENT	3.4	4.9	9.4	0.5	4.9	0.2	23.3	68.5	1.1	2.6	3.1	1.3	76.7	0.0	100.0

* NO CASES, ** NO DATA, 1) 1 DOG IMPORTED FROM IVORY COAST, 2) IN NORTH AFRICA.

TABLE 2

EUR EUROPE 1989 RABIES CASES 1. 1.89 - 31.12.89

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	5	34	12	1	7	-	59	1618	68	90	54	1	1831		1890
BEL	BELGIUM	12	33	163	11	75	1	295	520	8	13	6	-	547		842
BUL	BULGARIA *							0						0		0
CZE	CZECHOSLOVAKIA 1)	20	61	2	-	8	2	93	1542	13	37	22	5	1619	1	1713
DDR	GERMAN DEM. REPUBLIC	136	251	227	8	259	3	884	2364	50	143	140	15	2712		3596
DEN	DENMARK							0	-	-	-	-	1	1		1
DEU	FED.REP. OF GERMANY	27	78	134	14	107	2	362	2491	78	105	176	15	2865		3227
FIN	FINLAND							0	2	-	-	-	4	6		6
FRA	FRANCE	53	117	198	37	315	4	724	3341	35	80	28	6	3490		4214
GRE	GREECE *							0						0		0
HUN	HUNGARY	61	79	52	-	8	4	204	840	1	6	8	2	857		1061
ICE	ICELAND *							0						0		0
IRE	IRELAND *							0						0		0
ITA	ITALY 2)	1	-	-	-	-	-	1	50	4	-	-	-	54		55
LUX	LUXEMBOURG	1	3	56	-	7	-	67	66	1	3	2	-	72		139
NET	NETHERLANDS							0	-	-	-	-	22	22		22
NOR	NORWAY *							0						0		0
POL	POLAND	83	149	160	1	4	7	404	1176	18	51	80	162	1487		1891
POR	PORTUGAL *							0						0		0
ROM	ROMANIA	1	4	5	-	7	-	17	3	-	-	-	3	6		23
SPA	SPAIN 3)	1	-	-	-	-	-	1	-	-	-	-	5	5		6
SSR	SOVIET SOCIAL.REP **	231	174	547	32	303	24	1311	474	2	7	6	71	560	5	1876
SWE	SWEDEN *							0						0		0
SWI	SWITZERLAND + LIECHT	-	-	-	-	2	-	2	56	2	-	-	-	58		60
TUR	TURKEY	439	31	80	11	14	3	578	-	-	-	-	6	6		584
UNK	UNITED KINGDOM *							0						0		0
YUG	YUGOSLAVIA 4)	18	32	10	4	5	2	71	1287	27	11	10	3	1338	1	1410
TOTAL		1089	1046	1646	119	1121	52	5073	15830	307	546	532	321	17536	7	22616
PER CENT		4.8	4.6	7.3	0.5	5.0	0.2	22.4	70.0	1.4	2.4	2.4	1.4	77.5	0.0	100.0

* NO CASES. ** NO DATA FOR 3RD AND 4TH QUARTER. 1) HUMAN CASE ACQUIRED IN VIETNAM. 2) 1 DOG IMPORTED FROM IVORY COAST.
3) 1 DOG IN NORTH AFRICA. 4) HUMAN CASE ACQUIRED IN ALGERIA.

TABLE 3: RABIES CASE RATES (% TOTAL) FOR INDIVIDUAL ANIMAL SPECIES AND FOR TOTAL CASES OF 10 EUROPEAN COUNTRIES RANKING HIGHEST IN 1989.

EUR EUROPE 1989 1. 1.89 - 31.12.89

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		
	EUROPE															
	TOTAL RABIES CASES	1089	1046	1646	119	1121	52	5073	15830	307	546	532	321	17536	7	22616
	PER CENT INVOLVEMENT / COUNTRY															
FRA	FRANCE	4.9	11.2	12.0	31.1	28.1	7.7	14.3	21.1	11.4	14.7	5.3	1.9	19.9		18.6
DDR	GERMAN DEM. REPUBLIC	12.5	24.0	13.8	6.7	23.1	5.8	17.4	14.9	16.3	26.2	26.3	4.7	15.5		15.9
DEU	FED.REP. OF GERMANY	2.5	7.5	8.1	11.8	9.5	3.8	7.1	15.7	25.4	19.2	33.1	4.7	16.3		14.3
POL	POLAND	7.6	14.2	9.7	0.8	0.4	13.5	8.0	7.4	5.9	9.3	15.0	50.5	8.5		8.4
AUT	AUSTRIA	0.5	3.3	0.7	0.8	0.6	-	1.2	10.2	22.1	16.5	10.2	0.3	10.4		8.4
SSR	SOVIET SOCIALIST REP	21.2	16.6	33.2	26.9	27.0	46.2	25.8	3.0	0.7	1.3	1.1	22.1	3.2	71.4	8.3
CZE	CZECHOSLOVAKIA	1.8	5.8	0.1	-	0.7	3.8	1.8	9.7	4.2	6.8	4.1	1.6	9.2	14.3	7.6
YUG	YUGOSLAVIA	1.7	3.1	0.6	3.4	0.4	3.8	1.4	8.1	8.8	2.0	1.9	0.9	7.6	14.3	6.2
HUN	HUNGARY	5.6	7.6	3.2	-	0.7	7.7	4.0	5.3	0.3	1.1	1.5	0.6	4.9		4.7
BEL	BELGIUM	1.1	3.2	9.9	9.2	6.7	1.9	5.8	3.3	2.6	2.4	1.1	-	3.1		3.7
	TOTAL FROM 10 COUNTRIES	646	1008	1505	108	1091	49	4407	15653	300	543	530	280	17306	7	21720
	EQUAL % TOTAL	59.3	96.4	91.4	90.8	97.3	94.2	86.9	98.9	97.7	99.5	99.6	87.2	98.7	100.0	96.0

TABLE 4

EUR EUROPE 4/89 RABIES CASES 'OTHER ANIMAL SPECIES' 1.10.89 - 31.12.89

LOCATION		OTHER DOMESTIC ANIMALS			OTHER WILD ANIMALS								TOTAL
CODE	NAME	OTH.DOM. CARNIVO.	PIG	DOMEST. RABBIT	WOLF	RACOON DOG	RACOON	WILD BOAR	HEDGEHOG	INSECTIV. BAT	HAMSTER	HOUSE MOUSE	
BEL	BELGIUM	-	1	-	-	-	-	-	-	-	-	-	1
CZE	CZECHOSLOVAKIA	-	-	-	-	-	-	1	-	-	1	-	2
DDR	GERMAN DEM. REPUBLIC	-	-	-	-	-	1	1	-	-	-	-	2
DEU	FED.REP. OF GERMANY	-	-	-	-	-	-	2	-	-	-	-	2
FRA	FRANCE	-	-	1	-	-	-	-	1	1	-	-	3
HUN	HUNGARY	-	2	-	-	-	-	-	-	-	-	-	2
NET	NETHERLANDS	-	-	-	-	-	-	-	-	4	-	-	4
POL	POLAND	3	2	-	-	58	-	2	1	-	-	-	66
TUR	TURKEY	-	-	-	1	-	-	-	-	-	-	2	3
TOTAL		3	5	1	1	58	1	6	2	5	1	2	85
PER CENT		3.5	5.9	1.2	1.2	68.2	1.2	7.1	2.4	5.9	1.2	2.4	100.0

TABLE 5

EUR EUROPE 1989 RABIES CASES 'OTHER ANIMAL SPECIES' 1. 1.89 - 31.12.89

COUNTRY	OTHER DOMESTIC ANIMALS						OTHER WILD ANIMALS																TOTAL
	OTH.DOM. CARNIVOR	DONKEY	PIG	OTH.DOM. HERBIVOR	DOMESTIC RABBIT	OTHERS	WOLF	RACOON DOG	LYNX	RACOON	OTH.WILD CARNIVOR	WILD BOAR	EUROPEAN BISON	MOUFLON	CHAMOIS	HEDGEHOG	INSECTIV BAT	SQUIRREL	HAMSTER	BLACK RAT	HOUSE MOUSE	OTHERS	
AUT	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1
BEL	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1
CZE	-	-	1	-	1	-	1	1	-	-	-	1	-	-	-	-	1	-	1	-	-	-	7
DDR	2	-	1	-	-	-	-	4	-	2	1	6	-	1	-	-	1	-	-	-	-	-	18
DEN	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
DEU	-	2	-	-	-	-	-	-	-	1	-	3	1	-	-	-	9	1	-	-	-	-	17
FIN	-	-	-	-	-	-	-	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4
FRA	-	-	1	1	2	-	-	-	1	-	-	1	-	-	1	1	2	-	-	-	-	-	10
HUN	-	-	4	-	-	-	-	-	-	-	-	1	-	-	-	1	-	-	-	-	-	-	6
NET	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	22	-	-	-	-	-	22
POL	5	-	2	-	-	-	-	151	-	-	-	4	2	-	-	3	-	-	-	2	-	-	169
ROM	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	3
SPA	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	5	-	-	-	-	-	5
SSR	-	-	-	-	-	24	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	71	95
TUR	-	3	-	-	-	-	3	-	-	-	-	-	-	-	-	-	-	-	-	-	3	-	9
YUG	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	3	5
TOT.	7	5	10	1	3	26	4	160	1	3	1	17	3	1	1	5	41	1	1	2	3	77	373
%	1.9	1.3	2.7	0.3	0.8	7.0	1.1	42.9	0.3	0.8	0.3	4.6	0.8	0.3	0.3	1.3	11.0	0.3	0.3	0.5	0.8	20.6	100.0

AUT AUSTRIA — RABIES CASES — 1.10.89 - 31.12.89

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		
101	EISENSTADT - STADT							0	1	-	-	1	-	2		2
103	EISENSTADT - LAND							0	20	-	1	-	-	21		21
104	GUESSING							0	15	-	-	-	-	15		15
105	JENNERSDORF							0	2	-	-	-	-	2		2
106	MATTERSBURG	1	1	-	-	-	-	2	27	-	1	-	-	28		30
107	NEUSIEDL AM SEE							0	2	-	-	-	-	2		2
108	OBERPULLENDORF							0	2	-	-	-	-	2		2
109	OBERWART	-	1	-	-	-	-	1	8	-	-	-	-	8		9
205	SANKT VEIT AN DER GL	1	-	1	-	1	-	3	6	-	-	1	-	7		10
206	SPITTAL AN DER DRAU							0	1	-	-	-	-	1		1
208	VOELKERMARKT							0	5	1	-	-	-	6		6
209	WOLFSBERG	-	-	-	-	1	-	1	9	-	-	-	-	9		10
301	KREMS AN DER DONAU-S							0	1	-	-	-	-	1		1
309	GMUEND	1	-	-	-	3	-	4	7	-	3	-	-	10		14
311	HORN							0	10	-	1	-	-	11		11
313	KREMS AN DER DONAU-L							0	20	2	4	-	-	26		26
315	MELK	-	2	-	-	-	-	2	20	-	7	1	-	28		30
318	NEUNKIRCHEN							0	28	-	-	-	-	28		28
323	WIENER NEUSTADT-LAND							0	22	-	-	-	-	22		22
325	ZWETTL	-	3	-	-	-	-	3	10	-	5	-	-	15		18
404	BRAUNAU AM INN							0	91	-	3	6	-	100		100
406	FREISTADT							0	1	-	-	-	-	1		1
407	GMUNDEN							0	2	-	-	-	-	2		2
408	GRIESKIRCHEN							0	3	-	-	-	-	3		3
409	KIRCHDORF AN DER KRE	-	-	1	-	-	-	1						0		1
411	PERG							0	9	-	-	-	-	9		9
412	RIED IM INNKREIS							0	14	-	-	-	-	14		14
417	VOECKLABRUCK							0	59	2	1	5	-	67		67
418	WELS-LAND							0	2	-	-	-	-	2		2
503	SALZBURG-LAND	-	2	-	-	-	-	2	39	3	1	3	-	46		48
505	TAMSWEG							0	1	-	-	-	-	1		1
602	BRUCK AN DER MUR							0	7	-	-	-	-	7		7
605	FUERSTENFELD							0	2	-	-	-	-	2		2
606	GRAZ-LAND							0	2	-	-	-	-	2		2
607	HARTBERG							0	8	-	2	-	-	10		10
611	LEOBEN							0	1	-	-	-	-	1		1
612	LIEZEN							0	6	1	1	-	-	8		8
613	MUERZZUSCHLAG							0	37	2	3	4	-	46		46
614	MURAU							0	1	-	-	-	-	1		1
615	RADKERSBURG							0	2	-	-	-	-	2		2
616	VOITSBERG							0	1	-	-	-	-	1		1
617	WEIZ	-	1	-	1	-	-	2	15	2	2	1	-	20		22
TOTAL		3	10	2	1	5	0	21	519	13	35	22	0	589	0	610
PER CENT		0.5	1.6	0.3	0.2	0.8	0.0	3.4	85.1	2.1	5.7	3.6	0.0	96.6	0.0	100.0

RABIES CASES 1.10.89 - 31.12.89

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**															
HH	HAINHAUT							0	1	-	-	-	-	1		1
LG	LIEGE	2	3	30	1	12	1	49	42	-	1	2	-	45		94
LX	LUXEMBOURG	-	6	46	2	11	-	65	59	-	3	1	-	63		128
NA	NAMUR	-	1	5	1	-	-	7	2	-	-	-	-	2		9
TOTAL		2	10	81	4	23	1	121	104	0	4	3	0	111	0	232
PER CENT		0.9	4.3	34.9	1.7	9.9	0.4	52.2	44.8	0.0	1.7	1.3	0.0	47.8	0.0	100.0
LUX	**LUXEMBOURG**															
02	CAPELLEN	-	-	-	-	1	-	1	1	-	-	-	-	1		2
05	MERSCH							0	1	-	-	-	-	1		1
06	CLERVAUX	1	-	23	-	2	-	26	11	-	-	-	-	11		37
07	DIEKIRCH	-	-	1	-	-	-	1	1	-	-	-	-	1		2
08	REDANGE	-	-	-	-	1	-	1	5	-	1	-	-	6		7
09	WILTZ	-	2	14	-	-	-	16	10	-	1	-	-	11		27
12	GREVENMACHER							0	1	-	-	-	-	1		1
13	REMICH							0	2	-	-	-	-	2		2
TOTAL		1	2	38	0	4	0	45	32	0	2	0	0	34	0	79
PER CENT		1.3	2.5	48.1	0.0	5.1	0.0	57.0	40.5	0.0	2.5	0.0	0.0	43.0	0.0	100.0
NET	**NETHERLANDS**															
01	DRENTHE							0	-	-	-	-	1	1		1
07	NOORD-HOLLAND							0	-	-	-	-	3	3		3
TOTAL		0	0	0	0	0	0	0	0	0	0	0	4	4	0	4

CZE CZECHOSLOVAKIA RABIES CASES 1.10.89 - 31.12.89															
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		
00 DISTRICT OF PRAGUE							0						0		0
01 CENTRAL BOHEMIA	-	1	-	-	-	-	1	18	-	1	-	1	20		21
02 SOUTH BOHEMIA							0	9	-	1	-	-	10		10
03 WEST BOHEMIA	-	5	-	-	-	-	5	55	-	4	2	-	61		66
04 NORTH BOHEMIA							0	38	1	-	-	-	39		39
05 EAST BOHEMIA							0	29	1	-	-	-	30		30
06 SOUTH MORAVIA	-	2	-	-	1	-	3	46	2	-	3	-	51		54
07 NORTH MORAVIA	2	1	-	-	1	-	4	29	-	3	3	-	35		39
0 CZECH SOCIALIST REPUBL	2	9	-	-	2	-	13	224	4	9	8	1	246		259
10 DISTRICT OF BRATISLAV							0	1	-	-	-	-	1		1
11 WEST SLOVAKIA	-	1	-	-	1	-	2	16	-	-	-	1	17		19
12 CENTRAL SLOVAKIA	3	5	-	-	-	-	8	29	2	-	-	-	31		39
13 EAST SLOVAKIA	-	2	1	-	-	-	3	17	-	-	-	-	17		20
1 SLOVAC SOCIALIST REPUB	3	8	1	-	1	-	13	63	2	-	-	1	66		79
TOTAL	5	17	1	0	3	0	26	287	6	9	8	2	312	0	338
PER CENT	1.5	5.0	0.3	0.0	0.9	0.0	7.7	84.9	1.8	2.7	2.4	0.6	92.3	0.0	100.0

DDR GERMAN DEMOCRATIC REPUBLIC — RABIES CASES — 1.10.89 - 31.12.89

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	HAUPTSTADT BERLIN							0	-	-	1	5	-	6		6
02	COTTBUS	2	5	10	-	5	-	22	44	-	3	2	-	49		71
03	DRESDEN	2	10	15	2	64	-	93	65	2	2	7	-	76		169
04	ERFURT	1	1	2	-	3	-	7	30	1	3	11	-	45		52
05	FRANKFURT/ODER	-	3	2	-	-	-	5	22	-	2	3	1	28		33
06	GERA	-	-	-	-	2	-	2	11	-	-	-	-	11		13
07	HALLE	3	19	5	-	1	-	28	62	1	3	7	-	73		101
08	KARL-MARX-STADT	-	8	3	-	22	-	33	48	1	4	1	-	54		87
09	LEIPZIG	4	5	9	-	1	-	19	30	-	-	1	-	31		50
10	MAGDEBURG	2	3	11	1	1	-	18	59	-	3	2	-	64		82
11	NEUBRANDENBURG	1	2	-	-	-	-	3	11	-	3	-	-	14		17
12	POTSDAM	5	12	30	-	3	-	50	63	2	2	3	-	70		120
13	ROSTOCK	1	-	4	-	-	-	5	23	2	-	3	1	29		34
14	SCHWERIN	3	7	21	-	4	-	35	41	1	5	3	-	50		85
15	SUHL	1	-	1	-	7	-	9	45	-	2	2	-	49		58
TOTAL		25	75	113	3	113	0	329	554	10	33	50	2	649	0	978
PER CENT		2.6	7.7	11.6	0.3	11.6	0.0	33.6	56.6	1.0	3.4	5.1	0.2	66.4	0.0	100.0

DEU FEDERAL REPUBLIC OF GERMANY — RABIES CASES — 1.10.89 - 31.12.89

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		
010	SCHLESWIG-HOLSTEIN							0						0		0
020	HAMBURG							0						0		0
031	BRAUNSCHWEIG	-	-	2	1	-	-	3	7	-	1	-	-	8		11
032	HANNOVER	-	-	-	1	-	-	1	3	-	-	-	-	3		4
033	LUENEBURG							0						0		0
034	WESER-EMS							0						0		0
040	BREMEN							0						0		0
051	DUESSELDORF							0						0		0
053	KOELN							0	1	-	-	-	-	1		1
055	MUENSTER							0						0		0
057	DETMOLD	-	-	-	-	1	-	1	4	-	-	-	-	4		5
059	ARNSBERG	1	-	-	-	-	-	1	5	-	-	-	-	5		6
061	DARMSTADT	-	4	15	2	10	-	31	185	8	7	28	1	229		260
062	KASSEL	-	8	26	2	7	-	43	112	5	9	11	1	138		181
071	KOBLENZ	-	-	3	-	-	-	3	15	1	-	1	-	17		20
072	TRIER	-	-	2	-	-	-	2	9	-	-	-	-	9		11
073	RHEINHESSEN-PFALZ	-	4	-	-	2	-	6	93	-	1	3	-	97		103
081	STUTTGART	-	4	2	1	8	-	15	103	4	5	7	-	119		134
082	KARLSRUHE	-	-	2	-	-	-	2	7	-	-	-	-	7		9
083	FREIBURG							0	4	2	-	-	-	6		6
084	TUEBINGEN							0	8	-	-	-	-	8		8
091	OBERBAYERN							0	1	-	-	-	-	1		1
092	NIEDERBAYERN	-	-	2	-	-	-	2	1	-	-	-	-	1		3
093	OBERPFALZ							0	4	-	-	-	-	4		4
094	OBERFRANKEN							0	4	-	-	-	-	4		4
095	MITTELFRANKEN	-	1	-	-	-	-	1	20	-	1	-	-	21		22
096	UNTERFRANKEN	1	1	1	-	2	-	5	16	-	-	3	-	19		24
097	SCHWABEN	-	1	11	-	1	-	13	18	-	3	-	-	21		34
100	SAARLAND	-	2	5	-	5	-	12	19	-	2	4	-	25		37
110	BERLIN (WEST)							0						0		0
TOTAL		2	25	71	7	36	0	141	639	20	29	57	2	747	0	888
PER CENT		0.2	2.8	8.0	0.8	4.1	0.0	15.9	72.0	2.3	3.3	6.4	0.2	84.1	0.0	100.0

FRA FRANCE — RABIES CASES — 1.10.89 - 31.12.89

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	AIN							0	4	-	-	-	-	4		4
02	AISNE	-	-	-	-	2	-	2	20	-	-	-	-	20		22
03	ALLIER							0	3	-	-	-	-	3		3
08	ARDENNES	-	-	5	-	-	-	5	36	-	-	-	-	36		41
10	AUBE							0	18	-	1	-	-	19		19
21	COTE D'OR	2	7	6	1	1	-	17	27	-	-	-	-	27		44
25	DOUBS	-	1	3	-	3	-	7	45	3	1	1	-	50		57
39	JURA	1	-	2	-	-	-	3	32	-	1	-	-	33		36
51	MARNE							0	34	3	1	-	-	38		38
52	MARNE (HAUTE)	1	4	1	1	2	-	9	13	1	-	-	-	14		23
54	MEURTHE ET MOSELLE	2	6	9	-	7	-	24	34	-	3	-	2	39		63
55	MEUSE	-	3	13	2	5	-	23	32	-	6	4	-	42		65
57	MOSELLE	-	2	7	-	11	-	20	46	-	1	2	-	49		69
58	NIEVRE	-	-	3	-	11	-	14	133	-	2	1	-	136		150
60	OISE	3	3	9	3	28	-	46	65	2	2	1	-	70		116
67	RHIN (BAS)	-	-	2	1	-	-	3	8	-	-	-	-	8		11
68	RHIN (HAUT)	-	2	-	-	-	-	2	10	-	-	-	-	10		12
70	SAONE (HAUTE)	-	1	1	-	-	-	2	11	-	1	-	-	12		14
71	SAONE ET LOIRE	-	2	14	-	9	-	25	41	-	1	1	-	43		68
76	SEINE MARITIME	1	-	8	1	5	1	16	48	1	-	-	-	49		65
77	SEINE ET MARNE							0	48	-	-	-	-	48		48
78	YVELINES							0	1	-	-	-	-	1		1
80	SOMME	-	-	1	1	-	-	2	11	-	-	-	-	11		13
88	VOSGES	-	6	3	1	3	-	13	45	-	4	-	-	49		62
89	YONNE	-	1	1	1	4	-	7	27	-	-	1	-	28		35
99	NO LOCATION	1	-	-	-	-	-	1						0		1
TOTAL		11	38	88	12	91	1	241	792	10	24	11	2	839	0	1080
PER CENT		1.0	3.5	8.1	1.1	8.4	0.1	22.3	73.3	0.9	2.2	1.0	0.2	77.7	0.0	100.0

HUN HUNGARY — RABIES CASES — 1.10.89 - 31.12.89

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	BUDAPEST							0	2	-	-	-	-	2		2
02	BARANYA	2	1	2	-	-	-	5	18	-	-	1	-	19		24
03	BACS-KISKUN	2	2	4	-	-	1	9	20	-	-	-	-	20		29
04	BEKES							0	3	-	-	-	-	3		3
05	BORSOD-ABAUJ-ZEMPLEN	2	2	-	-	-	-	4	25	-	-	-	-	25		29
06	CSONGRAD	-	2	2	-	-	-	4	9	-	-	-	-	9		13
07	FEJER	-	2	3	-	-	1	6	25	-	-	-	-	25		31
08	GYOER-SOPRON							0	7	-	-	-	-	7		7
09	HAJDU-BIHAR	-	4	1	-	-	-	5	5	-	-	-	-	5		10
10	HEVES	-	1	1	-	-	-	2	8	-	-	1	-	9		11
11	KOMAROM	-	1	-	-	-	-	1	17	-	-	-	-	17		18
12	NOGRAD	-	3	-	-	-	-	3	7	-	-	-	-	7		10
13	PEST	2	2	-	-	-	-	4	20	-	-	-	-	20		24
14	SOMOGY	2	1	2	-	1	-	6	42	-	-	1	-	43		49
15	SZABOLCS-SZATMAR	1	-	-	-	-	-	1	1	-	-	-	-	1		2
16	SZOLNOK							0	6	-	-	-	-	6		6
17	TOLNA	1	2	3	-	-	-	6	17	-	-	-	-	17		23
18	VAS	-	-	1	-	-	-	1	25	-	-	-	-	25		26
19	VESZPREM	-	1	-	-	-	-	1	13	-	2	-	-	15		16
20	ZALA							0	16	-	-	-	-	16		16
TOTAL		12	24	19	0	1	2	58	286	0	2	3	0	291	0	349
PER CENT		3.4	6.9	5.4	0.0	0.3	0.6	16.6	81.9	0.0	0.6	0.9	0.0	83.4	0.0	100.0

RABIES CASES 1.10.89 - 31.12.89

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		
ITA	**ITALY**															
20	MILANO 1)	1	-	-	-	-	-	1						0		1
34	TRIESTE E GORIZIA							0	-	1	-	-	-	1		1
TOTAL		1	0	0	0	0	0	1	0	1	0	0	0	1	0	2
ROM	**ROMANIA**															
04	BACAU	-	1	-	-	-	-	1						0		1
07	BOTOSANI	-	-	1	-	-	-	1						0		1
08	BRASOV	-	-	2	-	-	-	2						0		2
22	HUNEDOARA	-	1	-	-	-	-	1	1	-	-	-	-	1		2
TOTAL		0	2	3	0	0	0	5	1	0	0	0	0	1	0	6
SPA	**SPAIN**															
52	MELILLA 2)	1	-	-	-	-	-	1						0		1
SWI	**SWITZERLAND AND LIECHTENSTEIN**															
01	AARGAU							0	1	-	-	-	-	1		1
05	BASEL-LAND	-	-	-	-	2	-	2	5	-	-	-	-	5		7
06	BERN							0	1	-	-	-	-	1		1
12	NEUCHATEL							0	1	-	-	-	-	1		1
TOTAL		0	0	0	0	2	0	2	8	0	0	0	0	8	0	10
YUG	**YUGOSLAVIA**															
10	SR BOSNA I HERCEGOVIN	-	-	1	-	-	-	1	13	-	-	-	-	13		14
30	SR HRVATSKA	3	2	-	1	2	-	8	191	-	1	1	-	193		201
50	SR SLOVENIJA	1	1	-	-	-	-	2	116	2	2	-	-	120		122
61	SAP VOJVODINA	-	1	-	-	-	-	1	22	-	-	-	-	22		23
TOTAL		4	4	1	1	2	0	12	342	2	3	1	0	348	0	360
PER CENT		1.1	1.1	0.3	0.3	0.6	0.0	3.3	95.0	0.6	0.8	0.3	0.0	96.7	0.0	100.0

1) IMPORTED FROM IVORY COAST. 2) IN NORTH AFRICA.

POL POLAND — RABIES CASES — 1.10.89 - 31.12.89

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	WARSZAWA	1	-	-	-	-	-	1	13	-	-	1	-	14		15
05	BIALYSTOK							0	1	-	-	-	1	2		2
09	BYDGOSZCZ	2	5	20	-	-	-	27	36	-	-	1	6	43		70
13	CIECHANOW							0	2	-	-	-	-	2		2
15	CZESTOCHOWA							0	5	-	-	1	1	7		7
17	ELBLAG							0	-	-	-	-	1	1		1
19	GDANSK	-	1	25	-	-	2	28	11	-	2	-	6	19		47
21	GORZOW	-	-	10	-	-	-	10	18	-	-	2	-	20		30
23	JELENIA GORA	-	-	1	-	-	-	1	4	-	-	-	-	4		5
25	KALISZ	-	2	-	-	-	-	2	4	-	-	1	-	5		7
27	KATOWICE	-	1	-	-	-	3	4	19	-	1	3	-	23		27
29	KIELCE	1	-	-	-	-	-	1	4	-	-	-	-	4		5
31	KONIN	1	4	4	-	-	-	9	11	-	-	2	2	15		24
33	KOSZALIN	1	1	1	-	-	-	3	21	-	-	2	3	26		29
35	KRAKOW	-	1	-	-	-	-	1	21	1	-	-	-	22		23
39	LEGNICA	-	1	-	-	-	-	1	9	-	-	-	-	9		10
41	LESZNO	2	3	-	-	-	-	5	10	-	1	-	-	11		16
43	LUBLIN	1	-	-	-	-	-	1						0		1
47	LODZ	-	1	-	-	-	-	1	1	-	-	-	-	1		2
51	OLSZTYN	2	7	11	-	-	-	20	8	1	-	-	12	21		41
53	OPOLE	1	3	-	-	-	-	4	16	-	-	1	-	17		21
55	OSTROLEKA	-	1	-	-	-	-	1	2	-	-	-	-	2		3
57	PILA	-	-	1	-	-	-	1	9	-	-	2	-	11		12
59	PIOTRKOW TRYB	1	-	3	-	-	-	4	3	-	-	-	-	3		7
61	PLOCK	-	1	1	-	-	-	2	2	-	-	-	-	2		4
63	POZNAN	-	12	-	-	-	-	12	35	-	2	3	5	45		57
65	PRZEMYSL	-	-	2	-	-	-	2	7	-	-	-	-	7		9
67	RADOM							0	4	-	-	-	-	4		4
71	SIEDLCE	3	-	5	-	-	-	8	15	-	-	-	-	15		23
73	SIERADZ							0	1	-	-	-	1	2		2
75	SKIERNIEWICE							0	1	-	-	-	-	1		1
77	SLUPSK	-	1	-	-	-	-	1	9	-	-	-	2	11		12
79	SUWALKI	-	-	3	-	-	-	3	4	-	1	-	10	15		18
81	SZCZECIN	2	2	3	-	-	-	7	29	-	1	3	3	36		43
83	TARNOBRZEG	1	16	-	-	-	-	17						0		17
87	TORUN	-	2	9	-	-	-	11	5	-	2	-	6	13		24
89	WALBRZYCH	-	2	3	-	-	-	5	7	-	-	1	-	8		13
91	WLOCLAWEK	-	-	1	-	-	-	1	6	-	-	-	-	6		7
93	WROCLAW	-	-	3	-	-	-	3	27	-	1	-	2	30		33
95	ZAMOSC	-	1	-	-	-	-	1	3	-	-	2	-	5		6
97	ZIELONA GORA	-	3	1	-	-	-	4	11	-	1	-	-	12		16
TOTAL		19	71	107	0	0	5	202	394	2	12	25	61	494	0	696
PER CENT		2.7	10.2	15.4	0.0	0.0	0.7	29.0	56.6	0.3	1.7	3.6	8.8	71.0	0.0	100.0

TUR TURKEY — RABIES CASES — 1.10.89 - 31.12.89

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		
001	ADANA	1	-	-	-	-	-	1						0		1
003	AFYON	-	1	-	-	-	-	1						0		1
004	AGRI	-	1	-	-	-	-	1						0		1
006	ANKARA	5	-	-	-	-	-	5						0		5
007	ANTALYA	1	-	-	1	-	-	2						0		2
009	AYDIN	1	-	-	-	-	-	1						0		1
010	BALIKESIR	5	-	-	-	-	-	5						0		5
011	BILECIK	1	-	1	-	-	-	2						0		2
014	BOLU	-	-	1	-	-	-	1						0		1
016	BURSA	7	-	-	-	2	-	9						0		9
019	CORUM	1	-	-	-	-	-	1						0		1
020	DENIZLI	3	-	-	-	-	-	3						0		3
022	EDIRNE	2	-	-	-	-	-	2						0		2
025	ERZURUM	1	1	-	-	-	-	2	-	-	-	-	1	1		3
026	ESKISEHIR	-	-	1	-	-	-	1						0		1
027	GAZIANTEP	8	-	1	-	-	-	9						0		9
028	GIRESUN	2	-	-	-	-	-	2						0		2
031	HATAY	2	-	-	-	-	-	2						0		2
033	ICEL	1	-	-	-	-	-	1						0		1
034	ISTANBUL	15	-	1	-	-	-	16						0		16
035	IZMIR	6	-	1	-	-	-	7						0		7
036	KARS	2	-	-	-	-	-	2						0		2
037	KASTAMONU	1	-	-	1	-	-	2	-	-	-	-	1	1		3
038	KAYSERI	2	-	1	-	-	-	3						0		3
039	KIRKLARELI	1	-	-	-	-	-	1						0		1
040	KIRSEHIR	1	-	-	-	-	-	1						0		1
041	KOCAELI	2	-	2	-	-	-	4						0		4
042	KONYA	4	-	-	-	1	-	5						0		5
043	KUETAHYA	3	-	-	-	-	-	3						0		3
045	MANISA							0	-	-	-	-	1	1		1
046	KAHRAMAN MARAS	2	-	1	-	-	-	3						0		3
051	NIGDE	2	-	-	-	-	-	2						0		2
052	ORDU	3	-	2	-	-	-	5						0		5
054	SAKARYA	5	-	2	-	-	-	7						0		7
055	SAMSUN	7	-	-	1	-	-	8						0		8
057	SINOP	4	1	2	-	-	-	7						0		7
058	SIVAS	1	-	-	-	-	-	1						0		1
060	TOKAT	1	-	-	-	-	-	1						0		1
063	URFA	1	-	-	-	-	-	1						0		1
067	ZONGULDAK	7	1	6	-	-	-	14						0		14
TOTAL		111	5	22	3	3	0	144	0	0	0	0	3	3	0	147
PER CENT		75.5	3.4	15.0	2.0	2.0	0.0	98.0	0.0	0.0	0.0	0.0	2.0	2.0	0.0	100.0

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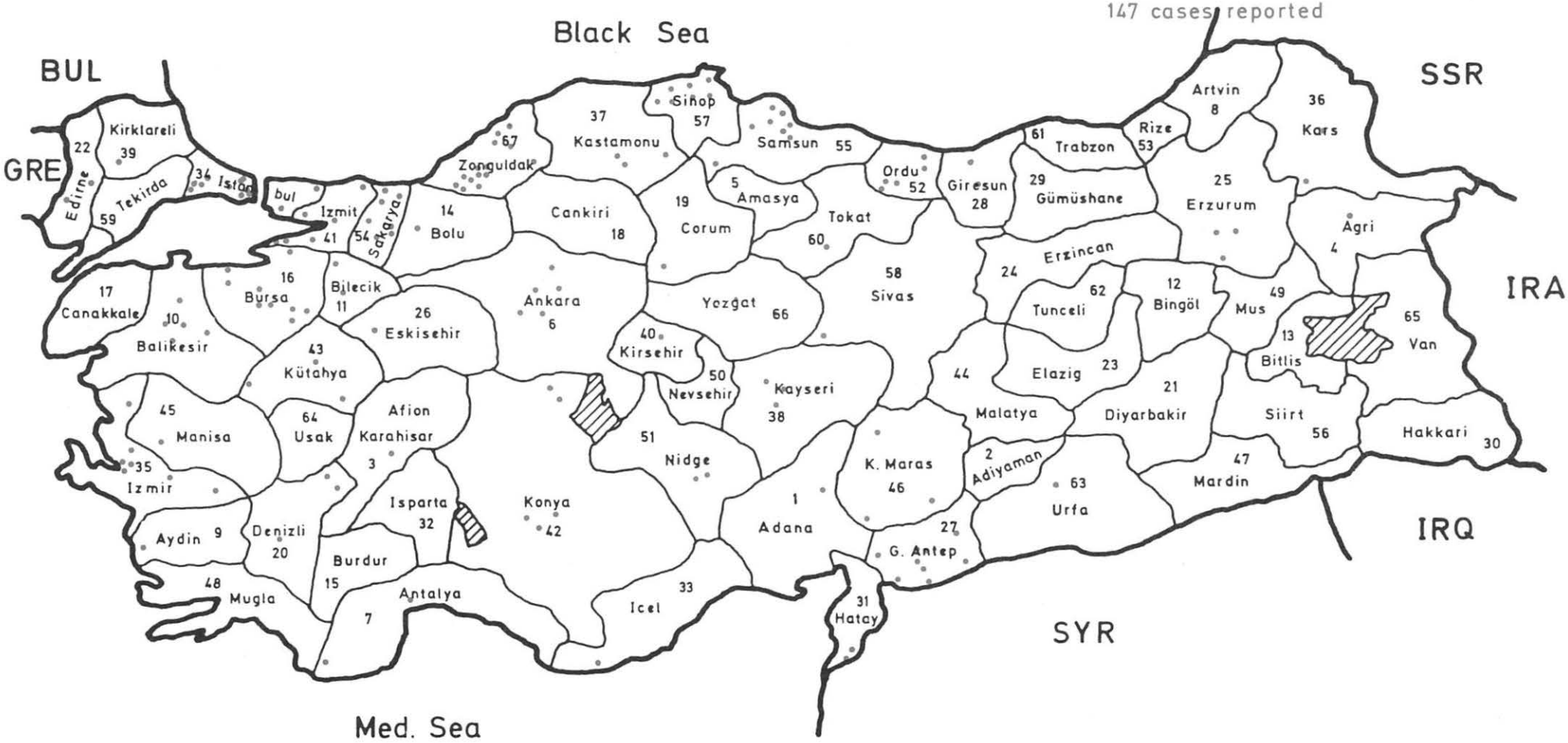
WHO Coll. Centre
Tuebingen / DEU

Rabies Cases Turkey
4th Quarter 1989
147 cases reported



WHO Coll. Centre
Tuebingen / DEU

Rabies Cases Europe
4th Quarter 1989

5780 cases reported

5 bat rabies cases included

ICE
(rabies free)

NOR
(rabies free)

FIN
(0)

SWE
(rabies free)

DEN
(0)

IRE
(rabies free)

UNK
(rabies free)

NET
(4)

BEL
(232)

DEU
(888)

DDR
(978)

POL
(696)

SSR
(no data)

CZE
(338)

AUT
(610)

HUN
(349)

FRA
(1079)
(1)

SWI
(10)

ITA
(2)

YUG
(360)

ROM
(6)

BUL
(rabies free)

POR
(rabies free)

SPA
(1)
(in North Africa)

ALB
(no data)

GRE
(rabies free)

TUR
(147)

0 50 100 km

(rabies free) = no indigenous case reported for at least two years