

C O N T E N T S

	Page
1. INTRODUCTION	1
2. RABIES IN EUROPE, 3RD QUARTER 1988	1
2.1 - 2.26 Situation in Individual Countries	2 - 8
3. MISCELLANEOUS	
3.1 Human Rabies Exposure in European Countries	9 - 14
3.2 Areas of Oral Fox Vaccination against Rabies in Europe	15 - 16
4. RABIES CASE DATA	
4.1 Table 1, Europe, 3rd Quarter 1988	17
4.2 Table 2, Europe, Accumulated Totals for the Period 1 January-30 September 1988	18
4.3 Table 3, Europe, Other Animal Species, 3rd Quarter 1988	19
4.4 Tables, European Countries in the 3rd Quarter 1988	20 - 29
5. LIST OF CONTRIBUTORS	30 - 31
6. ANNEX 1: Map of Rabies Cases in EUROPE, 3rd Quarter 1988	
ANNEX 2: Map of Rabies Cases in FINLAND, 3rd Quarter 1988	
ANNEX 3: Map of Rabies Cases in TURKEY, 3rd Quarter 1988	
ANNEX 4: Map of Areas of Oral Vaccination against Rabies in EUROPE	

The RABIES BULLETIN EUROPE is compiled and edited by the

WHO Collaborating Centre for Rabies
Surveillance and Research

Dr. L.G. SCHNEIDER, Chief
Dr. W.W. MÜLLER, Ass.Chief
K.-P. HOHNSBEEN, Statistician

at the
Federal Research Centre for Virus
Diseases of Animals

D 7400 TUEBINGEN, Postfach 1149
Federal Republic of Germany

TEL.: (0)7071-603 332, TELETEX: 707131=BFAVTue, TELEX: 17707131
NEW: T e l e f a x (0) 7071 603 201

The BULLETIN is sponsored by the WORLD HEALTH ORGANIZATION in Geneva, and the INTERNATIONAL OFFICE OF EPIZOOTICS in Paris.

The financial support of the WHO Centre by the BUNDESMINISTERIUM FÜR JUGEND, FAMILIE UND GESUNDHEIT, Bonn-Bad Godesberg, is gratefully acknowledged.

EDITORS NOTE:

In this **BULLETIN** new country codes are used to adjust to the WHO Information System.

We are changing the following:

from **GBR** to **UNK** for United Kingdom of Great Britain and Northern Ireland

from **ISL** to **ICE** for Iceland

from **USR** to **SSR** for Union of Soviet Socialist Republics.

The above applies for the tables and maps.

On the map of Turkey the following country codes are changed:

from **IRN** to **IRA** for Islamic Republic of Iran

from **IRK** to **IRQ** for Iraq.

1. INTRODUCTION

This **BULLETIN** describes the reported rabies cases in Europe for the third quarter 1988. The situation in general appears under 2., and in individual countries under 2.1 to 2.26.

In the miscellaneous section, under 3.1, on human rabies exposure in Europe is reported in regard to the biting rabid animal. In an annual reporting period the extension of the European field trial on oral immunization of foxes against rabies is described for the third time in this **BULLETIN**, under 3.2.

The rabies case data are tabulated for the third quarter 1988 under 4.

The last part lists the official contributors to the **BULLETIN**.

The geographical distribution of cases in Europe in the third quarter 1988 is shown on maps of Europe, Finland and Turkey in the Annex.

2. RABIES IN EUROPE (EUR), THIRD QUARTER 1988

During the third quarter 1988, 3664 cases of rabies were reported in Europe. These were 2988 cases in wild animals (81.6%) and 675 cases in domestic animals (18.4%). Of the cases in wild animals 2658 (72.5% of total) were foxes, 59 badgers, 91 other mustelids, 87 deer, 47 racoon dogs, 1 arctic fox, 1 wild cat, 1 racoon, 1 wild boar, 1 mouflon, 2 black rats, 3 other wild animals and 36 bats.

Of the 675 domestic animals 160 were dogs (of which 90 [56% of all dogs] were reported from Turkey, a country with dog-mediated rabies), 142 cats, 187 cattle, 171 small ruminants, 8 horses and 7 other domesticated animals. These data are summarized in Table 1.

The figures in Table 2 show accumulated totals of the first three quarters of 1988 for the European countries. Table 3 lists 'other animal species', less frequently involved in rabies.

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

Bat rabies was reported from the German Democratic Republic (1 case), from the Federal Republic of Germany (7 cases) and the Netherlands (28 cases).

There was one human case reported from Brussels, Belgium, but it was imported from Zaire.

Individual country reports follow:

2.1 Rabies in Austria (AUT) by H. Schnabl

During the third quarter 1988, 320 animals were diagnosed rabid of 3813 samples investigated. Compared to the second quarter 1988 (457 cases) a decrease of 30% was registered.

Of 297 rabid wild animals (93% of total), 254 were foxes (79%), 17 badgers (4%), 13 martens, 11 roe deer, 1 polecat, 1 fallow deer; of 23 rabid domestic animals (7%), 15 were cattle, 4 sheep, 3 cats, 1 dog.

The distribution of rabies cases follows by federal provinces (underlined) and districts (Bezirke):

Burgenland: Eisenstadt Umg., Güssing, Mattersburg and Oberpullendorf (13 cases = 4% of total).

Carinthia: except Hermagor (74 = 23%).

Lower Austria: Bruck/Leitha, Gmünd, Horn, Krems and Zwettl (13 = 4%).

Upper Austria: Freistadt, Gmunden, Vöcklabruck (26 = 8%).

Salzburg: except Salzburg-Stadt and St. Johann/Pog. (40 = 13%).

Styria: except Feldbach, Fürstenfeld, Hartberg and Radkersburg (149 = 47%).

Tyrol: Lienz and Reutte (5 = 2%).

Vienna and Vorarlberg: rabies-free.

2.2 Rabies in Belgium (BEL)

by J. Tambreur

184 rabies cases in animals were confirmed in 91 localities of the provinces HAINAUT, LIÈGE, LIMBURG and NAMUR: 45 cases in domestic animals (2 dogs, 5 cats, 19 cattle, 18 small ruminants, 1 rabbit) and 139 in wild animals (133 foxes, 1 badger, 5 other mustelids).

There was an increase compared to the second quarter 1988 (66 cases) by 179%, and an increase by 235% compared to the third quarter 1987. With begin of this quarter there was a new extreme increase of the disease as in the years 1967, 1976 and 1982.

During September of this quarter an oral vaccination of foxes was carried out with the SAD B19 vaccine from Tübingen, covering an area of 9000 km² to the south of the rivers Sambre and Meuse.

A young girl died of rabies in BRUSSELS, who was infected in ZAIRE.

2.3 Bulgaria (BUL)

The country remained rabies-free.

2.4 Rabies in Czechoslovakia (CZE)

by M. Olach and J. Neumann

In the third quarter of 1988 a total of 360 rabies cases were ascertained in Czechoslovakia (CSR 305, SSR 55). Wildlife accounted for 340 cases (94.4%) and domestic animals for 20 cases (5.6%).

In comparison with the second quarter of 1988, the total number of rabies cases was less by 11 cases and in comparison with the same period of 1987 it was less by 33 cases.

The 340 affected wild animals included 329 foxes (91% of total), 1 badger, 5 martens, 2 stags, 2 roe-deer and 1 polar fox. In regard to domestic animals 8 dogs, 11 cats and 1 sheep were affected.

The highest number of rabies cases was ascertained in the North Bohemian Region (84 cases) and in the Central Bohemian Region (76 cases). In regard to the districts, the highest incidence was found in Louny (27), followed by Příbram (22) and Chomutov (21).

At present (September 30, 1988), rabies has been recorded in 382 foci involving 81 districts of Czechoslovakia.

No case of rabies was recorded in man.

2.5 Rabies in Germany, Democratic Republic (DDR)

During the third quarter 1988, 687 cases of rabies were registered in the Democratic Republic of Germany, 305 cases more than during the previous quarter and 238 cases more than during the third quarter 1987. Of the 687 cases 480 (69.9% of total) were in wild animals - 418 foxes, 11 badgers, 28

stone martens, 18 roe deer, 3 fallow deer, 1 mouflon and 1 bat and 207 (30.1%) in domestic animals - 20 dogs, 37 cats, 41 cattle, 107 sheep and 2 horses.

The bat rabies case occurred in the department (Bezirk) of Rostock and the animal was specified as Eptesicus serotinus.

Concentration of cases was noticed in the south-east of the country.

2.6 Rabies in Denmark (DEN)

by E. Stougaard

During the third quarter 1988, no case of rabies was reported in Denmark.

2.7 Rabies in Germany, Federal Republic (DEU)

A total of 530 rabies cases were reported during the third quarter 1988. Of these, 489 cases were in wild animals (425 foxes, 13 badgers, 13 stone martens, 1 polecat, 1 racoon, 28 roe deer, 1 fallow deer and 7 bats) and 41 in domestic animals (2 dogs, 15 cats, 13 cattle, 8 sheep and 3 horses). There was an increase of cases by 92 (21%) compared to the previous quarter (438) and a reduction of cases by 316 (37%) compared to the third quarter 1987 (846).

Of 11 states in the Federal Republic of Germany the three city states Berlin, Bremen and Hamburg were rabies-free. The northernmost state Schleswig-Holstein had no rabies in terrestrial animals but recorded rabies in seven bats. All bats were identified as Eptesicus serotinus.

The other seven states registered rabies in terrestrial animals. When compared to the previous quarter and the third quarter 1987 figures were reduced except for one state (Hessen).

Again, during autumn 1988 oral vaccination was carried out throughout the country except for the city states Bremen and Hamburg. The vaccine in use (SAD B19) was produced at the Federal Research Centre for Animal Virus Diseases in Tübingen.

2.8 Rabies in Finland (FIN)

by S. Reinius

During the third quarter 1988, 475 animals were examined for rabies in Finland. 20 of these were positive compared to 19 in the previous quarter. All cases occurred in wildlife: 15 racoon dogs and 5 foxes. None of the cases involved human exposure.

Seventeen of these cases occurred in the province of Kymi, west and south of the city of Kouvola. The first case east of the Kymi river was recorded during this period. One case occurred in the south-east of the province of Häme and two cases in the north-east of the province of Uusimaa. This indicates that rabies is slowly spreading to the west.

A field trial on oral vaccination was carried out in the affected area during September and October. A total of 40500 baits were placed over an area of approx. 2700 km². Most baits were placed manually by local hunters but 4500 baits were spread from an airplane over an area of 225 km². The vaccine manufactured in Tübingen had a concentration of 5x10⁷ TCID/ml. The main target species were racoon dog and fox.

Since the beginning of the epidemic in April 1988 a total of 236 511 domestic animals, mostly dogs and cats, have been vaccinated against rabies by commercial vaccines and 240 humans have received post-exposure treatment.

2.9 Rabies in France (FRA)

by J. Blancou

472 rabies cases were registered during the course of the third quarter 1988, 64 cases more than during the previous quarter. 383 cases were noted in the fox (81.1% of total), 17 in other wild animals and 72 in domestic animals (4 dogs, 19 cats, 23 cattle, 24 small ruminants and 2 horses).

The départements (departments) mostly affected during this quarter were Côte d'Or (97 cases) and Haute Saône (37 cases).

The oral vaccination campaign affects 3800 km² during September 1988, 2600 km² in Lorraine and 1200 km² in Haute Savoie. The area vaccinated thrice in Lorraine (since 1986) is still rabies-free.

2.10 Rabies in Greece (GRE)

by A. Saravanos

During the third quarter 1988, no case of rabies was reported in Greece.

2.11 Rabies in Hungary (HUN)

by L. Koltai

During the third quarter 1988, there were rabies cases in all provinces (Komitats) of the country. The figure was close to the same period of the previous year: 3/88 = 236 cases, 3/87 = 240 cases. Most of the cases were registered in the fox (201 = 85.2% of total).

There was concentration of rabies cases in the western part of the country: Baranya 38, Somogy 26, Vas 24, Veszprém 20, Fejér 18. Borsod, in the north east of Hungary, which was some years ago among the provinces registering the highest number of cases was noting during this quarter only 7 cases.

2.12 Iceland (ICE)

The country remained rabies-free.

2.13 Ireland (IRE)

The country remained rabies-free.

2.14 Rabies in Italy (ITA)

by S. Prosperì

During the third quarter 1988, rabies was diagnosed in two foxes in the Trieste municipality, around Trebiciano, close to the border with Yugoslavia. In this province the last case of wildlife rabies was reported in 1984. The present rabies cases are possibly connected to the epidemic in Slovenia. Italy has been rabies-free for two years but the last case, in July 1986, was reported in the Trento province.

The viruses of the present isolated two cases have been characterized with a panel of 36 antinucleocapsid monoclonal antibodies of the Wistar Institute, Philadelphia, by the Virus Veterinary Laboratory of Istituto Superiore di Sanità (Roma). The strains were found to be street rabies viruses, resembling the fox strains of rabies currently present in Europe and in the past years in Italy.

At present the Veterinary Service of Friuli Region is setting up an oral fox vaccination campaign in the eastern area bordering with Yugoslavia.

2.15 Rabies in Luxembourg (LUX)

by F. Kongs

During the third quarter 1988, no case of rabies was registered in domestic or wild animals in the Grand Duchy of Luxembourg. Accordingly, the oral immunization of foxes practiced during the years 1986 and 1987 with the SAD B19 vaccine produced in Tübingen has been very successful. Another, and hopefully last, vaccination campaign has been carried out on the 17./18. September 1988.

During the third quarter 1988, 10 foxes, 1 marten and 1 fallow deer were examined for rabies but revealed negative results.

2.16 Rabies in the Netherlands (NET)

by J.H.M. Nieuwenhuijs

During the third quarter of this year 28 bats, 1 adult red fox and 1 cat have been found rabid.

For the first time since bat rabies is registered in the Netherlands 3 bats were found positive in the southern part of the country, in the province Limburg.

The rabid fox and the rabid cat were found in the southern part of the province Limburg where the previous cases of rabid foxes, the rabid badger and the rabid cow came from.

All bats diagnosed rabid until the second quarter of this year were of one species, Eptesicus serotinus. The species of the positive bats of the third quarter have not all been determined yet. Those that have been determined belong also to the species mentioned above.

2.17 Rabies in Norway (NOR)

by H.O. Bach-Gansmo

No case of rabies has been reported in Svalbard during the third quarter 1988.

The mainland remained rabies-free.

2.18 Rabies in Poland (POL)

A total of 401 cases of rabies was reported in Poland during the third quarter 1988. In comparison with the same quarter 1987 (496 cases) there was a decrease of cases by 19%.

323 cases (80.5% of total) were registered in wild animals (254 foxes, 32 raccoon dogs, 6 badgers, 8 pinemartens, 3 polecats, 2 ferrets, 13 roe deer, 2 red deer, 1 wild boar and 2 black rats) and 78 in domestic animals (19 dogs, 26 cats, 31 cattle and 2 sheep).

Of 49 provinces (voivodeships) 38 were infected during the said period. Free of rabies were 4 provinces in the central part of the country (Wloclawek, Sieradz, Lodz, Piotrkow), 5 in the south east (Krakow, Tarnow, Rzeszow, Bielsko, Nowy Sacz) and 2 in the eastern part (Lomza, Siedlce).

2.19 Portugal (POR)

The country remained rabies-free.

2.20 Rabies in Romania (ROM)

Eight cases were reported during the third quarter 1988 in Romania: 3 foxes, 3 cattle and 2 cats. The cases were scattered over 7 provinces.

During the same quarter 1987, 13 rabies cases were reported.

2.21 Rabies in Spain (SPA)

by J.L. de Filipe

During the third quarter 1988, no case of rabies was reported from the mainland of Spain.

There were two cases noted in the Spanish territory of North Africa (Ceuta 1, Melilla 1).

During a recent antirabies vaccination campaign in the cities of Ceuta and Melilla, a health education programme was presented to the public. Press and radio were involved. The increased consciousness of the public on matters of rabies resulted in an increase of vaccinated animals.

2.22 Sweden (SWE)

The country remained rabies-free.

2.23 Rabies in Switzerland (SWI)

by A.I. Wandeler

During the third quarter of 1988, the Swiss Rabies Diagnostic Center received 375 animals for examination. 28 (7.5%) of these were positive for rabies compared to 11 (3% of 374) in the previous quarter and 24 (5.5% of 442) in the third quarter of 1987. 22 were observed in foxes, 1 in a badger, 2 in stonemartens, 2 in sheep, and 1 in a cow.

49 bats examined with immunofluorescence and i.c. inoculation into suckling mice revealed no rabies virus.

All rabies cases were relatively close to the Swiss-French border. 12 rabies cases originated from canton Geneva south of Lake Geneva, 9 from northern parts of canton Jura.

No bite exposures of humans to proven rabid animals were recorded in the third quarter of 1988. The number of people treated for non-bite exposures is not known.

2.24 Rabies in Turkey (TUR)

During the third quarter 1988, 137 rabies cases were registered in Turkey. Except for one house mouse the rabies cases occurred in domestic animals, with the greatest number in dogs (90 cases = 65.7% of total).

The report of the second quarter 1988 registered 220 animal rabies cases, the one of the third quarter 1987 199 animal rabies cases.

The distribution of cases remained in general as in the previous quarter.

2.25 United Kingdom (UNK)

The country remained rabies-free.

2.26 Rabies in Yugoslavia (YUG)

246 cases of rabies were reported in Yugoslavia during the third quarter 1988. Of these were 228 foxes (92.7% of total) and 6 other wild animals, 3 dogs, 4 cats and 5 cattle.

Most of the cases were registered in Slovenia (176 = 72% of total) and at the Slovenian/Croatian border. Scattered cases occurred in the other northern parts of Yugoslavia (Croatia, Wojwodina), the central parts and the coastal parts of Croatia.

For the first time, there is going to be a trial on oral immunisation of wildlife in Yugoslavia. It comprizes an area of ca. 600 km² in Slovenia.

3. MISCELLANEOUS

3.1 Human Rabies Exposures in European Countries

Fortunately, human rabies cases have become rare in Europe except for Turkey. But Turkey is the only country at present regularly reporting cases of urban or dog-mediated rabies.

Since the central European rabies epizootic, assumed to have started around 1939/40 at the Polish/Russian border and moving west, has turned clearly to wildlife or fox-mediated rabies in the beginning of the 1950's, human rabies cases have continuously diminished. In fact, in more recent years cases reported in these areas of wildlife rabies were exceeded by imported ones from other continents.

Nevertheless, the human rabies data for Europe are not complete and the editors of this **BULLETIN** appeal to contributors and readers to supplement and correct data presented here, especially back to 1977 when the WHO Collaborating Centre for Rabies Surveillance and Research, Tübingen, began to publish this **BULLETIN**. The corrected and supplemented data will be considered in the next summary report.

3.1.1. Human Cases and Source of Exposure

In **TABLE 1**, the human rabies cases in Europe reported to the WHO Collaborating Centre have been summarized and, when known, the source of animal exposure has been added. The table distinguishes between 'unknown exposure' and 'no information'. Unknown exposure is a common experience due to the relatively long incubation period of rabies. Thus, people cannot remember the time and source of exposure or, simply did ignore it. 'No information' means not known to the WHO Collaborating Centre.

Two remarks on Turkey: as mentioned above, the country is the only one in Europe in which urban or dog-mediated rabies exists and therefore, the source of exposure is nearly always domestic animals. Secondly, the figure in **TABLE 1** is incomplete as there is no regular reporting to the WHO Collaborating Centre. According to a personal communication with the Ministry of Health in Turkey, there are 30-60 cases every year.

In regard to more detailed information on human rabies cases in Europe there are figures at hand from the Federal Republic of Germany (DEU) and the German Democratic Republic (DDR).

TABLE 2 presents 17 human cases in the Federal Republic of Germany with details on the age and sex of the patients, incubation period, source of exposure, place bitten by the rabid animal and postexposure vaccination (if applied). The details have been collected by the Bundesgesundheitsamt, Berlin, and cover the period 1951 to 1988 at the time of writing. It can be seen that 13 male and 4 female patients were affected. Up to the age of 40 there were 12 cases recorded and only 4 above the age of 40. Most commonly there was an incubation period of about 2 months. By a bite of a fox into the face (case No. 11) it was reduced to 12 days. Between onset of clinical signs and day of death 4 to 29 days passed, in most cases about 20 days. In 9 cases vaccine had been applied.

The German Democratic Republic (DDR) as well as the Federal Republic of Germany (DEU) were and are entirely affected by wildlife rabies since the beginning of the 1950's. In **TABLE 3** all indigenous human cases have been arranged according to the animal exposure. The data illustrate the fact that

rabies in domestic animals, especially dog-mediated rabies, has a much greater impact on human health than wild animals in areas of wildlife rabies.

Table 1**HUMAN RABIES CASES IN EUROPE 1977-1988 AND ANIMAL RESPONSIBLE FOR EXPOSURE**

Country	Indigenous Cases	Imported Cases (Country of Origin)	Source of Exposure (Year)
POLAND	6	1 (Sudan)	Fox (1977), Dog (1979), unrecognized wild animal (1985) Not known (1979, 1980, 1984). Dog (1983)
ROMANIA	3		No information (3x1977).
SWITZERLAND	3	0	Cat, Cow, Dog (3x1977).
YUGOSLAVIA	8		No information (2x1977, 2x1978) Dogs (2x1979), Dogs (2x1980).
UNITED KINGDOM	0	6 (Pakistan) (India) (Zambia)	Dog (1977) No information (1977), Dog (1978), Dog (1981), Dog (1987) Dog (1986)
TURKEY	39		No information (34x1977, 2x1978, 3x1979).
AUSTRIA	1	0	Fox (1979).
FRANCE	0	3 (Egypt) (Tunisia) (Senegal)	Dog-Human to human transmission via corneal transplant (1979). Dog (1980) Dog (1982).
GERMAN DEM.REP.	1	0	Dog (1981).
BELGIUM	0	2 (Ruanda) (Zaire)	Dog (1981) No information (1988)
FINLAND	1?		Assumed to be of bat origin (1985)
FEDERAL REP. OF GERMANY	0	1 (India)	Dog (1986).
Total	62	13	

Table 2

RABIES CASES IN THE FEDERAL REPUBLIC OF GERMANY AND BERLIN (WEST)

No.	Year	Sex	Age	Day infected	First clinical signs	Day of death	Biting animal (Place bitten)	Postexposure vaccination
1	1951	m	11	04.02.51	03.03.51	09.03.51	Dog (left cheek)	16 injections Semple
2	1953	m		1953	1953	1953	Dog	not known
3	1965	m	24	25.12.64	13.02.65	21.02.65	Dog (Face)	none
4	1965	f	68	29.05.65	08.07.65	12.07.65	Dog (left calf)	6 injections Hempt
5	1965	m	10	16.07.65	10.09.65	17.09.65	Dog-GREECE (right forearm)	Hempt and Högyes-Phillipps.
6	1965	m	32	27.07.65	30.08.65	03.09.65	Dog-GREECE (right hand)	23 injections Hempt
7	1968	f	12	10.09.68	01.11.68	22.11.68	Dog (hollow of the knee)	none
8	1971	m	36	Nov. 1970	6.-8.1.71	25.01.71	Dog-TURKEY (right forearm)	none
9	1972	m	36	30.12.71	30.03.72	07.04.72	Dog-TURKEY (right hand)	16 injections vaccine not known
10	1974	m	22	17.12.73	19.05.74	14.06.74	Cat (right hand)	none
11	1974	m	5	31.01.74	11.02.74	06.03.74	Fox (face)	10 injections Hempt
12	1974	f	71	20.02.74	10.05.74	15.05.74	Fox (left shank)	6 injections Hempt
13	1975	m	29	after the 20.03.75	07.05.75	05.06.75	Dog-TURKEY (left wrist)	none
14	1975	m	46	07.05.75	08.07.75	16.07.75	Dog-IRAN (left calf)	6 injections vaccine not known
15	1976	m	44	21.06.76	15.08.76	04.09.76	Dog-TURKEY (left forearm)	7 ampules rabies globulin (Cutter) 1200 ml plasma-phorese-Serum 600 ml hyperimmune plasma
16	1978	m	22	begin of May 1978	01.06.78	17.06.78	Dog-EGYPT	not known
17	1986	f	28	Febr. 86	21.05.86	10.06.86	Dog-INDIA (right arm)	none

Figures from: BUNDESGESUNDHEITSAMT BERLIN (WEST)

Table 3
INDIGENOUS HUMAN RABIES CASES IN THE GERMAN DEMOCRATIC REPUBLIC (DDR) AND THE FEDERAL REPUBLIC OF GERMANY (DEU) 1950-1988

Source of Exposure	DDR	DEU	Total	%
Dog	24	5	29	67.4
Fox	6	2	8	18.6
Cat	3	1	4	9.3
Cattle	1		1	2.3
Not known	1		1	2.3
Total	35	8	43	100.0

Updated from:

G. Wachendörfer im BUNDESGESUNDHEITSBLATT 18, Nr. 18, 05.09.1975

If all indigenous cases of the first 3 tables in this article with known exposure in areas of wildlife rabies are added (Yugoslavia has been left out as the dog-mediated cases could have happened in areas with urban rabies) one comes to 39 human cases exposed to domestic animals (77.6%) and 11 cases exposed to wild animals (22.4%). Wildlife on the other hand comprised in Europe from 1977 to 1984 85.6% of rabies cases (BULLETIN 4/84 P. 23) in areas of wildlife rabies.

3.1.2. Human Postexposure Treatment and Source of Exposure

Another means of expressing exposure is in relation to prophylactic treatment. In TABLE 4 there are figures of the German Democratic Republic (DDR) from 1951 to 1958 on postexposure treatment.

Table 4
VACCINATION OF HUMANS AND SOURCE OF EXPOSURE IN THE GERMAN DEMOCRATIC REPUBLIC (DDR)

Year	Dog %	Other Domestic Animals %	Domestic Animals Totals %	Fox %	Other Wild Animals %	Wild Animals Total %
1951	77	18,5	95,5	3	1,5	4,5
1952	52	36	88	8	4	12
1953	68,6	22,5	91,1	6,2	2,7	8,9
1954	59	23,7	82,7	11,8	5,5	17,3
1955	43,5	29,9	73,4	17,8	8,8	26,6
1956	37,4	26,3	63,7	28,4	7,9	36,3
1957	37,8	34,6	72,4	17,5	10,1	27,6
1958	46,8	29,8	76,6	11,2	12,2	23,4

Source:

H. Pitzschke: "Epizootologische Betrachtungen über den Verlauf der Tollwut 1945-1958 in Europa mit besonderer Berücksichtigung Deutschlands", Arch.Exp. Vet.Med. 13, p. 1014 (1959).

Beside the fact that domestic animals cause more postexposure treatment it can be seen how the change from urban to wildlife rabies took place. While exposure to domestic animals decreased approx. 20% it increased in the case of wild animals.

3.1.3 Surveillance Data on Human Exposure

More recent figures can be drawn from the surveillance at the WHO Collaborating Centre, Tübingen, when the question on the case reporting form involving human exposure was answered. In TABLES 5 and 6 data were evaluated when the answer was in the affirmative.

Table 5
HUMAN EXPOSURE TO RABID WILD AND DOMESTIC ANIMALS FOR THE FEDERAL REPUBLIC OF GERMANY (DEU)* AND SWITZERLAND (SWI) 1983 - 1987

		1983	1984	1985	1986	1987
DEU						
Wild Animals	Cases	5976	6092	5806	4469	3408
	Exposure	390	350	394	337	221
	Per Cent	6.5%	5.7%	6.8%	7.5%	6.5%
Domestic Animals	Cases	959	964	1059	790	383
	Exposure	339	387	424	376	182
	Per Cent	41.6%	40.1%	40.0%	47.6%	47.5%
SWI						
Wild Animals	Cases	856	776	353	165	90
	Exposure	24	6	4	3	-
	Per Cent	2.8%	0.8%	1.1%	1.8%	-
Domestic Animals	Cases	208	152	59	33	9
	Exposure	62	38	11	4	-
	Per Cent	29.8%	25.0%	18.6%	12.1%	-

* except. Bavaria

It is interesting how relatively stable the percentages of exposure are over the 5 years shown. However, the difference in percentages of the two countries in TABLE 5 is rather puzzling. The setting up of questions in the reporting form might be one possible explanation.

Table 6:
HUMAN RABIES EXPOSURE BY SELECTED ANIMALS IN THE FEDERAL REPUBLIC OF GERMANY
(DEU) EXCEPT FOR THE FEDERAL STATE OF BAVARIA 1983-1987

		1983	1984	1985	1986	1987
WILD ANIMALS						
Red Fox	Cases	5171	5264	5053	3832	3013
	Exposure	258	244	278	217	160
	Per Cent	5%	4.6%	5.5%	5.7%	5.3%
Badger	Cases	113	137	134	132	75
	Exposure	15	7	9	7	1
	Per Cent	13.3%	5.1%	6.7%	5.3%	1.3%
Stone marten	Cases	265	261	234	143	114
	Exposure	47	35	38	29	15
	Per Cent	17.7%	13.4%	16.2%	20.3%	13.2%
Polecat	Cases	12	10	8	7	4
	Exposure	2	1	3	1	-
	Per Cent	16.7%	10.0%	37.5%	14.3%	-
Roe deer	Cases	385	383	342	301	178
	Exposure	58	53	57	60	38
	Per Cent	15.1%	13.8%	16.7%	19.9%	21.3%
DOMESTIC ANIMALS						
Dog	Cases	78	67	73	45	34
	Exposure	44	31	32	18	15
	Per Cent	56.4%	46.3%	43.8%	40.0%	44.1%
Cat	Cases	229	233	230	148	98
	Exposure	124	119	111	84	51
	Per Cent	54.1%	51.1%	48.3%	56.8%	52.0%
Horse	Cases	45	37	36	41	21
	Exposure	23	19	20	23	10
	Per Cent	51.1%	51.4%	55.6%	56.1%	47.6%
Cattle	Cases	379	444	520	363	160
	Exposure	123	128	180	170	78
	Per Cent	32.5%	28.8%	34.6%	46.8%	48.8%
Sheep	Cases	224	168	193	284	65
	Exposure	84	78	75	74	26
	Per Cent	37.5%	46.4%	38.9%	40.2%	40.1%

3.2 Areas of Oral Fox Vaccination against Rabies in Europe

This is the third time in the **BULLETIN** (previous reporting in issues 3/86 and 3/87) that a review is given on areas of oral fox vaccination against rabies in Europe, mainly, to coordinate activities along borders. In 1988 three more countries have practiced oral vaccination: Finland (FIN), the Netherlands (NET) and Yugoslavia (YUG). Except for Luxembourg (LUX) all other countries extended the areas of vaccination.

A short description of the vaccination areas and the epizootiological development is given by country in alphabetical order. The report is supplemented by a map in the **ANNEX**. The area, once or several times vaccinated from 1978 to 1987 is shown hatched on the map, the newly vaccinated area in 1988 is shown dotted.

Austria (AUT)

Austria started the vaccination with the federal province Vorarlberg in 1986. It turned rabies-free in 1987 and still remains free of rabies. The next provinces to join oral vaccination were Tirol and Steiermark. Now the provinces Kärnten, Salzburg and Oberösterreich have started.

Except for Vorarlberg it is too early for an epizootiological evaluation in the other parts of the country.

Belgium (BEL)

Belgium started a vaccination belt adjacent to Luxembourg in 1986 (approx. 1700 km²). Today an area of approx. 9000 km² covers the country south of the rivers Sambre and Meuse. The vaccine used is the SAD B19 from Tübingen.

Vaccinia-Rabies Recombinant Virus

In 1987 a first field trial of fox vaccination against rabies using a vaccinia-rabies recombinant virus was carried out in an area of 6 km². Unfortunately, an assessment of the trial was not possible as samples for control tests were not available.

(Source: Pastoret et al., The Veterinary Record, November 5, 1988).

Federal Republic of Germany (DEU)

The field trial started in 1983. The federal states, except the city states Hamburg and Bremen, extended the vaccination areas according to their available financial resources. Large areas have become rabies-free, the gross total of rabies cases was reduced. The vaccinations were extended to Berlin although the city is presently rabies-free.

Finland (FIN)

After 29 years of being rabies-free, Finland was reinfected in April 1988. The animal mainly involved is the racoon dog followed by the fox. Fortunately, laboratory trials on racoon dogs with the Tübingen SAD B19 vaccine gave good results and thus, Finnish authorities decided on the use of oral vaccination in the field.

France (FRA)

In 1986 an area of 400 km² was vaccinated for the first time adjacent to Luxembourg. Most of these areas are rabies free today. In 1988 a total of 3800 km² was vaccinated: the area adjacent to Luxembourg was extended and a small area in the département Doubs along the border in the south-west of Switzerland.

Italy (ITA)

Italy started oral vaccination in 1984 and became rabies-free in 1986. In 1988 the country was reinfected along the border with Yugoslavia. A safety belt of oral vaccination in the area is planned.

Luxembourg (LUX)

Luxembourg started oral vaccination in 1986 and has recently become rabies-free. Still, the whole country was vaccinated once more in autumn 1988.

Netherlands (NET)

The Netherlands were infected along the border with Belgium in 1988. The authorities decided on oral vaccination.

Switzerland (SWI)

Switzerland started oral vaccination in 1978 and has only few infected areas left in the west of the country. All areas of the country were once or several times vaccinated except for one part in the centre of Switzerland where no vaccination was necessary. There are of course areas in mountains above altitudes of 2000 meters not vaccinated which can not be seen in the map.

Yugoslavia (YUG)

Yugoslavia started in 1988 for the first time oral vaccination in an area of about 600 km² in Slovenia, close to the border of Austria.

TABLE 1

EUR		EUROPE		3/88		RABIES CASES							1. 7.88 - 30. 9.88			
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
AUT	AUSTRIA	1	3	15	-	4	-	23	254	17	14	12	-	297	1	320
BEL	BELGIUM	2	5	19	-	18	1	45	133	1	5	-	-	139		185
BUL	BULGARIA	*						0						0		0
CZE	CZECHOSLOVAKIA	8	11	-	-	1	-	20	329	1	5	4	1	340		360
DDR	GERMAN DEM. REPUBLIC	20	37	41	2	107	-	207	418	11	28	21	2	480		687
DEN	DENMARK	*						0						0		0
DEU	FED. REP. OF GERMANY	2	15	13	3	8	-	41	425	13	14	29	8	489		530
FIN	FINLAND							0	5	-	-	-	15	20		20
FRA	FRANCE	4	19	23	2	24	-	72	383	6	7	4	-	400		472
GRE	GREECE	*						0						0		0
HUN	HUNGARY	9	17	4	-	-	-	30	201	-	3	-	2	206		236
ICE	ICELAND	*						0						0		0
IRE	IRELAND	*						0						0		0
ITA	ITALY							0	2	-	-	-	-	2		2
LUX	LUXEMBOURG	*						0						0		0
NET	NETHERLANDS	-	1	-	-	-	-	1	1	-	-	-	28	29		30
NOR	NORWAY	*						0						0		0
POL	POLAND	19	26	31	-	2	-	78	254	6	13	15	35	323		401
POR	PORTUGAL	*						0						0		0
ROM	ROMANIA	-	2	3	-	-	-	5	3	-	-	-	-	3		8
SPA	SPAIN	2	-	-	-	-	-	2						0		2
SWE	SWEDEN	*						0						0		0
SWI	SWITZERLAND + LIECHT	-	-	1	-	2	-	3	22	1	2	-	-	25		28
TUR	TURKEY	90	2	32	1	5	6	136	-	-	-	-	1	1		137
UNK	UNITED KINGDOM	*						0						0		0
YUG	YUGOSLAVIA	3	4	5	-	-	-	12	228	3	-	2	1	234		246
TOTAL		160	142	187	8	171	7	675	2658	59	91	87	93	2988	1	3664
PER CENT		4.4	3.9	5.1	0.2	4.7	0.2	18.4	72.5	1.6	2.5	2.4	2.5	81.6	0.0	100.0

* NO CASES, 1) HUMAN CASE IMPORTED FROM ZAIRE, 2) IN NORTH AFRICA.

TABLE 2

EUR		EUROPE		1-3/88		RABIES CASES							1. 1.88 - 30. 9.88			
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
AUT	AUSTRIA	5	10	22	-	13	1	51	1250	66	32	58	1	1407		1458
BEL	BELGIUM	4	7	29	1	32	1	74	213	2	5	-	-	220	1	295
BUL	BULGARIA	*						0						0		0
CZE	CZECHOSLOVAKIA	24	45	-	-	1	1	71	1043	8	22	16	4	1093		1164
DDR	GERMAN DEM. REPUBLIC	56	91	59	5	133	-	344	1060	27	57	52	3	1199		1543
DEN	DENMARK	*						0						0		0
DEU	FED. REP. OF GERMANY	17	50	43	14	56	-	180	1342	51	37	85	10	1525		1705
FIN	FINLAND	1	1	-	-	-	-	2	8	1	-	-	28	37		39
FRA	FRANCE	10	52	47	10	67	1	187	1204	18	19	9	2	1252		1439
GRE	GREECE	*						0						0		0
HUN	HUNGARY	29	59	27	-	12	1	128	663	1	5	3	4	676		804
ICE	ICELAND	*						0						0		0
IRE	IRELAND	*						0						0		0
ITA	ITALY							0	2	-	-	-	-	2		2
LUX	LUXEMBOURG	-	-	-	1	-	-	1	-	1	1	-	-	2		3
NET	NETHERLANDS	-	1	1	-	-	-	2	6	1	-	-	38	45		47
NOR	NORWAY	*						0						0		0
POL	POLAND	47	65	46	-	5	-	163	733	11	36	44	69	893		1056
POR	PORTUGAL	*						0						0		0
ROM	ROMANIA	2	2	6	1	-	-	11	12	1	-	-	-	13		24
SPA	SPAIN	2)	-	-	-	-	-	4						0		4
SWE	SWEDEN	*						0						0		0
SWI	SWITZERLAND + LIE	3)	1	2	1	-	5	9	66	2	2	-	-	70		79
TUR	TURKEY		446	3	79	9	17	8	562	1	-	-	1	2		564
UNK	UNITED KINGDOM	*						0						0		0
YUG	YUGOSLAVIA		21	11	7	1	2	2	44	737	11	-	6	2		800
TOTAL		667	399	367	42	343	15	1833	8340	201	216	273	162	9192	1	11026
PER CENT		6.0	3.6	3.3	0.4	3.1	0.1	16.6	75.6	1.8	2.0	2.5	1.5	83.4	0.0	100.0

* NO CASES, 1) HUMAN CASE IMPORTED FROM ZAIRE, 2) IN NORTH AFRICA, 3) 1 DOG IMPORTED FROM ZAIRE.

TABLE 3

EUR		EUROPE		3/88		RABIES CASES 'OTHER ANIMAL SPECIES'										1. 7.88 - 30. 9.88	
LOCATION		OTHER DOMESTIC ANIMAL			OTHER WILD ANIMALS										TOTAL		
CODE	NAME	DONKEY	OTH.DOM HERBIVO	DOMEST RABBIT	ARCTIC FOX	RACoon DOG	WILD CAT	RACoon	WILD BOAR	MOUFLON	INSECTIV BAT	BLACK RAT	HOUSE MOUSE	NUTRIA		OTHER	
BEL	BELGIUM	-	-	1	-	-	-	-	-	-	-	-	-	-	-	1	
CZE	CZECHOSLOVAKIA	-	-	-	1	-	-	-	-	-	-	-	-	-	-	1	
DDR	GERMAN DEM. REPUBLI	-	-	-	-	-	-	-	-	1	1	-	-	-	-	2	
DEU	FED.REP. OF GERMANY	-	-	-	-	-	-	1	-	-	7	-	-	-	-	8	
FIN	FINLAND	-	-	-	-	15	-	-	-	-	-	-	-	-	-	15	
HUN	HUNGARY	-	-	-	-	-	1	-	-	-	-	-	-	1	-	2	
NET	NETHERLANDS	-	-	-	-	-	-	-	-	-	28	-	-	-	-	28	
POL	POLAND	-	-	-	-	32	-	-	1	-	-	2	-	-	-	35	
TUR	TURKEY	4	2	-	-	-	-	-	-	-	-	-	1	-	-	7	
YUG	YUGOSLAVIA	-	-	-	-	-	-	-	-	-	-	-	-	-	1	1	
TOTAL		4	2	1	1	47	1	1	1	1	36	2	1	1	1	100	
PER CENT		4.0	2.0	1.0	1.0	47.0	1.0	1.0	1.0	1.0	36.0	2.0	1.0	1.0	1.0	100.0	

AUT AUSTRIA

RABIES CASES

1. 7.88 - 30. 9.88

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
103	EISENSTADT - LAND							0	1	-	-	-	-	1	1	
104	GUESSING							0	5	-	-	-	-	5	5	
106	MATTERSBURG							0	1	-	-	-	-	1	1	
108	OBERPULLENDORF							0	6	-	-	-	-	6	6	
201	KLAGENFURT-STADT							0	2	-	-	-	-	2	2	
202	VILLACH-STADT							0	-	-	-	1	-	1	1	
204	KLAGENFURT-LAND							0	3	-	-	-	-	3	3	
205	SANKT VEIT AN DER GL	-	-	4	-	1	-	5	12	-	-	-	-	12	17	
206	SPITTAL AN DER DRAU							0	18	1	2	2	-	23	23	
207	VILLACH-LAND							0	5	1	-	-	-	6	6	
208	VOELKERMARKT							0	5	-	-	-	-	5	5	
209	WOLFSBERG	-	1	1	-	-	-	2	12	-	-	-	-	12	14	
210	FELDKIRCHEN	-	1	1	-	-	-	2	1	-	-	-	-	1	3	
307	BRUCK AN DER LEITHA							0	1	-	-	-	-	1	1	
309	GMUEND							0	1	-	-	-	-	1	1	
311	HORN							0	3	-	-	-	-	3	3	
313	KREMS AN DER DONAU-L							0	4	-	-	-	-	4	4	
325	ZWETTL							0	3	-	1	-	-	4	4	
406	FREISTADT							0	2	-	-	-	-	2	2	
407	GMUNDEN	-	-	-	-	2	-	2	7	-	-	1	-	8	10	
417	VOECKLABRUCK	-	-	1	-	-	-	1	10	1	-	2	-	13	14	
502	HALLEIN							0	2	-	1	-	-	3	3	
503	SALZBURG-LAND							0	1	-	-	-	-	1	1	
505	TAMSWEG	-	-	1	-	-	-	1	30	-	1	1	-	32	33	
506	ZELL AM SEE							0	2	1	-	-	-	3	3	
601	GRAZ-STADT							0	-	1	-	-	-	1	1	
602	BRUCK AN DER MUR	-	1	2	-	-	-	3	5	3	2	1	-	11	14	
603	DEUTSCHLANDSBERG							0	3	-	-	-	-	3	3	
606	GRAZ-LAND							0	7	2	3	-	-	12	12	
608	JUDENBURG							0	4	-	-	-	-	4	4	
609	KNITTELFELD							0	6	-	-	-	-	6	6	
610	LEIBNITZ	1	-	-	-	-	-	1	15	-	-	-	-	15	16	
611	LEOBEN							0	16	2	2	-	-	20	20	
612	LIEZEN	-	-	1	-	-	-	1	8	2	-	-	-	10	11	
613	MUERZZUSCHLAG							0	2	-	1	-	-	3	3	
614	MURAU	-	-	4	-	1	-	5	41	1	1	3	-	46	51	
616	VOITSBERG							0	1	-	-	-	-	1	1	
617	WEIZ							0	5	2	-	-	-	7	7	
707	LIENZ							0	3	-	-	1	-	4	4	
708	REUTTE							0	1	-	-	-	-	1	1	
TOTAL		1	3	15	0	4	0	23	254	17	14	12	0	297	0	320
PER CENT		0.3	0.9	4.7	0.0	1.3	0.0	7.2	79.4	5.3	4.4	3.8	0.0	92.8	0.0	100.0

RABIES CASES

1. 7.88 - 30. 9.88

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															
BR BRABANT 1)							0						0	1	1
HH HAINHAUT	-	-	1	-	-	-	1						0		1
LG LIEGE	2	2	7	-	-	-	11	43	-	4	-	-	47		58
LX LUXEMBOURG	-	3	6	-	15	1	25	48	1	1	-	-	50		75
NA NAMUR	-	-	5	-	3	-	8	42	-	-	-	-	42		50
TOTAL	2	5	19	0	18	1	45	133	1	5	0	0	139	1	185
PER CENT	1.1	2.7	10.3	0.0	9.7	0.5	24.3	71.9	0.5	2.7	0.0	0.0	75.1	0.5	100.0
FIN FINLAND															
01 UUSIMAA							0	-	-	-	-	2	2		2
04 HDME							0	-	-	-	-	1	1		1
05 KYMI							0	5	-	-	-	12	17		17
TOTAL	0	0	0	0	0	0	0	5	0	0	0	15	20	0	20
NET NETHERLANDS															
01 DRENTH							0	-	-	-	-	8	8		8
02 FRIESLAND							0	-	-	-	-	2	2		2
03 GELDERLAND							0	-	-	-	-	2	2		2
04 GRONINGEN							0	-	-	-	-	6	6		6
05 LIMBURG	-	1	-	-	-	-	1	1	-	-	-	3	4		5
07 NOORD-HOLLAND							0	-	-	-	-	4	4		4
08 OVERIJSEL							0	-	-	-	-	3	3		3
TOTAL	0	1	0	0	0	0	1	1	0	0	0	28	29	0	30
PER CENT	0.0	3.3	0.0	0.0	0.0	0.0	3.3	3.3	0.0	0.0	0.0	93.3	96.7	0.0	100.0

1) HUMAN CASE IMPORTED FROM ZAIRE.

CZE

CZECHOSLOVAKIA

RABIES CASES

1. 7.88 - 30. 9.88

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	1	-	-	-	-	1		1
01	CENTRAL BOHEMIA	1	2	-	-	-	-	3	70	-	1	1	1	73		76
02	SOUTH BOHEMIA							0	14	-	-	-	-	14		14
03	WEST BOHEMIA	2	1	-	-	-	-	3	68	1	2	-	-	71		74
04	NORTH BOHEMIA	1	1	-	-	-	-	2	81	-	-	1	-	82		84
05	EAST BOHEMIA	-	1	-	-	-	-	1	14	-	-	-	-	14		15
06	SOUTH MORAVIA	-	1	-	-	-	-	1	24	-	1	-	-	25		26
07	NORTH MORAVIA							0	15	-	-	-	-	15		15
0	CZECH SOCIALIST REPUB	4	6	-	-	-	-	10	287	1	4	2	1	295		305
10	DISTRICT OF BRATISLAV							0						0		0
11	WEST SLOVAKIA	1	1	-	-	-	-	2	8	-	-	-	-	8		10
12	CENTRAL SLOVAKIA	1	1	-	-	-	-	2	13	-	-	-	-	13		15
13	EAST SLOVAKIA	2	3	-	-	1	-	6	21	-	1	2	-	24		30
1	SLOVAC SOCIALIST REPUB	4	5	-	-	1	-	10	42	-	1	2	-	45		55
TOTAL		8	11	0	0	1	0	20	329	1	5	4	1	340	0	360
PER CENT		2.2	3.1	0.0	0.0	0.3	0.0	5.6	91.4	0.3	1.4	1.1	0.3	94.4	0.0	100.0

DDR

GERMAN DEMOCRATIC REPUBLIC

R A B I E S C A S E S

1. 7.88 - 30. 9.88

LOCATION		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						0		0
02	COTTBUS	2	2	2	-	7	-	13	40	1	1	3	-	45		58
03	DRESDEN	2	13	4	-	18	-	37	58	1	2	-	1	62		99
04	ERFURT	-	3	3	-	-	-	6	46	-	1	4	-	51		57
05	FRANKFURT/ODER	1	2	-	-	-	-	3	35	-	2	1	-	38		41
06	GERA	-	-	-	-	6	-	6	23	1	-	-	-	24		30
07	HALLE	1	1	-	-	-	-	2	27	-	2	2	-	31		33
08	KARL-MARX-STADT	3	5	10	-	69	-	87	38	1	6	3	-	48		135
09	LEIPZIG	1	1	-	-	3	-	5	3	-	-	-	-	3		8
10	MAGDEBURG	1	-	5	-	2	-	8	22	1	2	-	-	25		33
11	NEUBRANDENBURG	3	2	2	-	-	-	7	15	1	2	-	-	18		25
12	POTSDAM	1	1	-	-	-	-	2	16	-	-	2	-	18		20
13	ROSTOCK	1	1	1	-	-	-	3	28	3	7	3	1	42		45
14	SCHWERIN	2	6	11	2	2	-	23	44	2	3	3	-	52		75
15	SUHL	2	-	3	-	-	-	5	23	-	-	-	-	23		28
TOTAL		20	37	41	2	107	0	207	418	11	28	21	2	480	0	687
PER CENT		2.9	5.4	6.0	0.3	15.6	0.0	30.1	60.8	1.6	4.1	3.1	0.3	69.9	0.0	100.0

DEU

FEDERAL REPUBLIC OF GERMANY

R A B I E S C A S E S

1. 7.88 - 30. 9.88

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	-	-	-	-	7	7		7
020	HAMBURG							0						0		0
031	BRAUNSCHWEIG	-	-	-	-	1	-	1	13	3	1	1	-	18		19
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	-	-	-	1	-	-	1	5	-	-	-	-	5		6
055	MUENSTER							0						0		0
057	DETMOLD	-	-	3	-	-	-	3	6	-	-	-	-	6		9
059	ARNSBERG							0	3	-	-	-	-	3		3
061	DARMSTADT	-	1	1	-	-	-	2	39	1	1	2	-	43		45
062	KASSEL	-	5	4	1	-	-	10	141	2	3	12	1	159		169
071	KOBLENZ	-	1	-	-	-	-	1	18	-	-	-	-	18		19
072	TRIER	-	-	1	-	3	-	4	23	-	-	1	-	24		28
073	RHEINHESSEN-PFALZ	1	2	1	-	-	-	4	18	-	1	-	-	19		23
081	STUTTGART							0	10	1	-	1	-	12		12
082	KARLSRUHE	-	2	-	-	-	-	2	14	3	1	3	-	21		23
083	FREIBURG	-	-	-	-	1	-	1	16	-	-	-	-	16		17
084	TUEBINGEN							0	9	2	1	-	-	12		12
091	OBERBAYERN							0	5	-	-	-	-	5		5
092	NIEDERBAYERN							0	6	-	2	-	-	8		8
093	OBERPFALZ	1	-	-	-	-	-	1	13	-	1	-	-	14		15
094	OBERFRANKEN	-	1	-	-	-	-	1	5	-	-	1	-	6		7
095	MITTELFRANKEN	-	1	1	-	-	-	2	23	-	1	3	-	27		29
096	UNTERFRANKEN	-	1	1	-	3	-	5	16	-	1	2	-	19		24
097	SCHWABEN	-	1	1	-	-	-	2	27	1	1	1	-	30		32
100	SAARLAND							0	12	-	-	2	-	14		14
110	BERLIN (WEST)							0						0		0
TOTAL		2	15	13	3	8	0	41	425	13	14	29	8	489	0	530
PER CENT		0.4	2.8	2.5	0.6	1.5	0.0	7.7	80.2	2.5	2.6	5.5	1.5	92.3	0.0	100.0

FRA FRANCE

RABIES CASES

1. 7.88 - 30. 9.88

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	2	-	-	-	-	2		2
02	AISNE							0	8	-	-	-	-	8		8
08	ARDENNES	-	2	3	-	6	-	11	13	-	1	-	-	14		25
10	AUBE	-	-	-	-	1	-	1	27	3	-	-	-	30		31
21	COTE D'OR	-	2	3	-	5	-	10	85	1	1	-	-	87		97
25	DOUBS	-	2	-	-	-	-	2	29	-	1	-	-	30		32
39	JURA							0	22	-	-	-	-	22		22
51	MARNE							0	1	1	-	-	-	2		2
52	MARNE (HAUTE)	-	-	-	1	1	-	2	17	-	-	-	-	17		19
54	MEURTHE ET MOSELLE	-	4	5	-	2	-	11	19	-	-	2	-	21		32
55	MEUSE	1	1	6	-	3	-	11	22	-	1	-	-	23		34
57	MOSELLE	-	-	1	-	-	-	1	9	-	-	-	-	9		10
58	NIEVRE	-	-	-	-	1	-	1	16	-	-	-	-	16		17
60	OISE							0	12	-	-	-	-	12		12
67	RHIN (BAS)	1	1	-	-	-	-	2	16	-	-	-	-	16		18
68	RHIN (HAUT)	1	1	-	-	-	-	2	14	1	1	2	-	18		20
70	SAONE (HAUTE)	1	2	4	-	2	-	9	27	-	1	-	-	28		37
71	SAONE ET LOIRE							0	1	-	-	-	-	1		1
77	SEINE ET MARNE	-	2	-	-	-	-	2	10	-	-	-	-	10		12
88	VOSGES	-	1	1	1	3	-	6	18	-	1	-	-	19		25
89	YONNE	-	1	-	-	-	-	1	12	-	-	-	-	12		13
90	TERR.DE BELFORT							0	3	-	-	-	-	3		3
TOTAL		4	19	23	2	24	0	72	383	6	7	4	0	400	0	472
PER CENT		0.8	4.0	4.9	0.4	5.1	0.0	15.3	81.1	1.3	1.5	0.8	0.0	84.7	0.0	100.0

R A B I E S C A S E S

1. 7.88 - 30. 9.88

LOCATION CODE NAME		D O M E S T I C A N I M A L S						W I L D A N I M A L S						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS		
HUN H U N G A R Y															
01	BUDAPEST						0	2	-	1	-	-	3		3
02	BARANYA	2	3	1	-	-	6	32	-	-	-	-	32		38
03	BACS-KISKUN						0	4	-	-	-	-	4		4
04	BEKES	-	1	-	-	-	1	4	-	-	-	-	4		5
05	BORSOD-ABAUJ-ZEMPLEN	-	1	-	-	-	1	6	-	-	-	-	6		7
06	CSONGRAD						0	9	-	-	-	-	9		9
07	FEJER	-	-	1	-	-	1	16	-	-	-	1	17		18
08	GYOER-SOPRON	-	1	-	-	-	1	5	-	-	-	-	5		6
09	HAJDU-BIHAR	-	3	-	-	-	3						0		3
10	HEVES	1	1	-	-	-	2						0		2
11	KOMAROM						0	12	-	-	-	-	12		12
12	NOGRAD	-	1	-	-	-	1	7	-	-	-	-	7		8
13	PEST						0	10	-	-	-	-	10		10
14	SOMOGY	1	1	1	-	-	3	22	-	1	-	-	23		26
15	SZABOLCS-SZATMAR						0	2	-	-	-	1	3		3
16	SZOLNOK						0	2	-	-	-	-	2		2
17	TOLNA	4	2	-	-	-	6	10	-	1	-	-	11		17
18	VAS	-	2	1	-	-	3	21	-	-	-	-	21		24
19	VESZPREM	1	-	-	-	-	1	19	-	-	-	-	19		20
20	ZALA	-	1	-	-	-	1	18	-	-	-	-	18		19
TOTAL		9	17	4	0	0	30	201	0	3	0	2	206	0	236
PER CENT		3.8	7.2	1.7	0.0	0.0	12.7	85.2	0.0	1.3	0.0	0.8	87.3	0.0	100.0
ROM R O M A N I A															
04	BACAU						0	1	-	-	-	-	1		1
10	BUZAU	-	-	1	-	-	1						0		1
13	CLUJ	-	1	-	-	-	1						0		1
20	GORJ						0	1	-	-	-	-	1		1
21	HARGHITA	-	-	1	-	-	1						0		1
25	MARAMURES	-	-	1	-	-	1						0		1
32	SALAJ	-	1	-	-	-	1	1	-	-	-	-	1		2
TOTAL		0	2	3	0	0	5	3	0	0	0	0	3	0	8
PER CENT		0.0	25.0	37.5	0.0	0.0	62.5	37.5	0.0	0.0	0.0	0.0	37.5	0.0	100.0

R A B I E S C A S E S

1. 7.88 - 30. 9.88

LOCATION CODE NAME		D O M E S T I C A N I M A L S						W I L D A N I M A L S						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS		
ITA I T A L Y															
34 TRIESTE E GORIZIA							0	2	-	-	-	-	2		2
SPA S P A I N															
51 CEUTA (NORTH AFRICA)		1	-	-	-	-	1						0		1
52 MELILLA (NORTH AFRICA)		1	-	-	-	-	1						0		1
TOTAL		2	0	0	0	0	2	0	0	0	0	0	0	0	2
SWI SWITZERLAND AND LIECHTENSTEIN															
06 BERN							0	1	-	-	-	-	1		1
08 GENEVE							0	12	-	2	-	-	14		14
22 VAUD							0	1	1	-	-	-	2		2
23 VALAIS		-	-	-	-	2	2						0		2
26 JURA		-	-	1	-	-	1	8	-	-	-	-	8		9
TOTAL		0	0	1	0	2	3	22	1	2	0	0	25	0	28
PER CENT		0.0	0.0	3.6	0.0	7.1	10.7	78.6	3.6	7.1	0.0	0.0	89.3	0.0	100.0
YUG Y U G O S L A V I A															
10 SR BOSNA I HERCEGOVIN							0	3	-	-	-	-	3		3
30 SR HRVATSKA		2	3	-	-	-	5	47	1	-	-	-	48		53
50 SR SLOVENIJA		1	1	2	-	-	4	167	2	-	2	1	172		176
61 SAP VOJVODINA		-	-	3	-	-	3	11	-	-	-	-	11		14
TOTAL		3	4	5	0	0	12	228	3	0	2	1	234	0	246
PER CENT		1.2	1.6	2.0	0.0	0.0	4.9	92.7	1.2	0.0	0.8	0.4	95.1	0.0	100.0

POL POLAND

RABIES CASES

1. 7.88 - 30. 9.88

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	-	2	-	-	-	-	2	6	-	1	1	-	8		10
03	BIALA PODLASKA	-	-	-	-	-	-	0	3	-	-	-	-	3		3
05	BIALYSTOK	-	-	1	-	-	-	1	5	-	-	-	4	9		10
09	BYDGOSZCZ	1	1	5	-	-	-	7	12	-	-	2	3	17		24
11	CHELM	1	-	1	-	-	-	2	17	-	-	-	7	24		26
13	CIECHANOW	-	-	2	-	-	-	2	4	-	1	-	1	6		8
15	CZESTOCHOWA	-	-	-	-	-	-	0	3	-	-	1	-	4		4
17	ELBLAG	1	-	-	-	-	-	1	2	-	-	-	1	3		4
19	GDANSK	-	-	-	-	-	-	0	10	2	-	1	2	15		15
21	GORZOW	-	-	1	-	-	-	1	16	-	-	-	1	17		18
23	JELENIA GORA	-	-	1	-	-	-	1	9	-	-	-	-	9		10
25	KALISZ	1	3	-	-	-	-	4	20	-	-	-	-	20		24
27	KATOWICE	1	1	1	-	2	-	5	11	-	1	1	-	13		18
29	KIELCE	1	-	-	-	-	-	1	5	-	-	-	-	5		6
31	KONIN	-	-	-	-	-	-	0	1	-	-	-	-	1		1
33	KOSZALIN	2	4	3	-	-	-	9	18	-	2	1	3	24		33
37	KROSNO	-	-	-	-	-	-	0	1	-	-	-	1	2		2
39	LEGNICA	-	2	-	-	-	-	2	12	-	-	-	-	12		14
41	LESZNO	-	1	-	-	-	-	1	5	-	-	2	-	7		8
43	LUBLIN	-	-	-	-	-	-	0	2	-	-	-	-	2		2
51	OLSZTYN	-	2	9	-	-	-	11	10	1	-	1	8	20		31
53	OPOLE	1	1	-	-	-	-	2	11	-	-	-	-	11		13
55	OSTROLEKA	-	-	-	-	-	-	0	1	-	-	-	-	1		1
57	PILA	1	1	1	-	-	-	3	5	-	-	-	-	5		8
61	PLOCK	2	-	-	-	-	-	2	-	-	-	-	-	0		2
63	POZNAN	1	7	1	-	-	-	9	8	1	2	1	-	12		21
65	PRZEMYSL	1	-	-	-	-	-	1	2	-	-	-	-	2		3
67	RADOM	1	-	-	-	-	-	1	3	-	-	-	-	3		4
75	SKIERNIEWICE	-	-	-	-	-	-	0	-	1	-	-	-	1		1
77	SLUPSK	-	-	-	-	-	-	0	8	-	-	2	1	11		11
79	SUWALKI	1	-	3	-	-	-	4	7	-	-	-	-	7		11
81	SZCZECIN	2	-	-	-	-	-	2	10	1	1	2	2	16		18
83	TARNOBRZEG	-	-	-	-	-	-	0	1	-	3	-	-	4		4
87	TORUN	1	1	-	-	-	-	2	-	-	-	-	-	0		2
89	WALBRZYCH	-	-	1	-	-	-	1	12	-	-	-	-	12		13
93	WROCLAW	-	-	1	-	-	-	1	9	-	-	-	1	10		11
95	ZAMOSC	-	-	-	-	-	-	0	1	-	-	-	-	1		1
97	ZIELONA GORA	-	-	-	-	-	-	0	4	-	2	-	-	6		6
TOTAL		19	26	31	0	2	0	78	254	6	13	15	35	323	0	401
PER CENT		4.7	6.5	7.7	0.0	0.5	0.0	19.5	63.3	1.5	3.2	3.7	8.7	80.5	0.0	100.0

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	4	-	-	-	-	-	4						0		4
002	ADIYAMAN	1	-	1	-	-	-	2						0		2
003	AFYON	2	-	-	-	-	-	2						0		2
006	ANKARA	3	-	1	-	-	-	4						0		4
007	ANTALYA	-	-	-	-	1	-	1						0		1
008	ARTVIN	2	-	-	-	-	1	3						0		3
009	AYDIN	1	-	-	1	-	1	3						0		3
010	BALIKESIR	6	-	2	-	-	-	8						0		8
011	BILECIK	1	-	-	-	-	-	1						0		1
014	BOLU	-	-	1	-	-	-	1						0		1
015	BURDUR	-	-	1	-	-	-	1						0		1
016	BURSA	3	-	-	-	-	-	3						0		3
021	DIYARBAKIR	1	-	-	-	-	-	1						0		1
022	EDIRNE	2	-	1	-	-	-	3						0		3
023	ELAZIG	1	-	-	-	-	-	1						0		1
024	ERZINCAN	-	1	-	-	-	-	1						0		1
027	GAZIANTEP	4	-	2	-	1	2	9						0		9
029	GUEMUESHANE	-	-	1	-	-	-	1						0		1
031	HATAY	1	1	-	-	-	1	3						0		3
033	ICEL	-	-	-	-	-	1	1						0		1
034	ISTANBUL	3	-	-	-	-	-	3						0		3
035	IZMIR	8	-	4	-	1	-	13						0		13
037	KASTAMONU	1	-	-	-	-	-	1	-	-	-	-	1	1		2
038	KAYSERI	-	-	-	-	1	-	1						0		1
039	KIRKLARELI	2	-	-	-	-	-	2						0		2
041	KOCAELI	2	-	3	-	-	-	5						0		5
042	KONYA	1	-	-	-	-	-	1						0		1
043	KUETAHYA	2	-	1	-	-	-	3						0		3
044	MALATYA	1	-	-	-	-	-	1						0		1
045	MANISA	2	-	-	-	-	-	2						0		2
046	KAHRAMAN MARAS	-	-	1	-	-	-	1						0		1
050	NEVSEHIR	2	-	-	-	1	-	3						0		3
051	NIGDE	1	-	-	-	-	-	1						0		1
052	ORDU	7	-	4	-	-	-	11						0		11
054	SAKARYA	5	-	2	-	-	-	7						0		7
055	SAMSUN	6	-	-	-	-	-	6						0		6
057	SINOP	5	-	4	-	-	-	9						0		9
059	TEKIRDAG	1	-	-	-	-	-	1						0		1
060	TOKAT	3	-	-	-	-	-	3						0		3
062	TUNCELI	1	-	-	-	-	-	1						0		1
063	URFA	3	-	1	-	-	-	4						0		4
064	USAK	1	-	-	-	-	-	1						0		1
067	ZONGULDAK	1	-	2	-	-	-	3						0		3
TOTAL		90	2	32	1	5	6	136	0	0	0	0	1	1	0	137
PER CENT		65.7	1.5	23.4	0.7	3.6	4.4	99.3	0.0	0.0	0.0	0.0	0.7	0.7	0.0	100.0

LIST OF CONTRIBUTORS

- AUT AUSTRIA**
 Dr. W. S c h u l l e r
 Dr. H. S c h n a b l
 Bundesanstalt für Tierseuchen-
 bekämpfung
- BEL BELGIUM**
 Dr. J. T a m b e u r
 Ministère de l'Agriculture
- BUL BULGARIA**
 Dr. N. T. B e l e v
 Ministère de l'Agriculture
- CZE CZECHOSLOVAKIA**
 Dr. M. O l a c h
 Dr. J. N e u m a n n
 Federal Ministry of Agriculture
 and Food
- DDR GERMAN DEMOCRATIC REPUBLIC**
 Dr. K.-H. L e b e n t r a u
 Ministerium für
 Gesundheitswesen
- DEN DENMARK**
 Dr. E. S t o u g a a r d
 Veterinaerdirektoratet
- FIN FINLAND**
 Dr. R. B e r g e r
 Dr. Saara R e i n i u s
 Ministry of Agriculture and
 Forestry
- FRA FRANCE**
 Dr. J. B l a n c o u
 Centre d'Etudes sur la Rage
 de Nancy
- GRE GREECE**
 Dr. E. T s a g l a s
 Ministry of Agriculture
- HUN HUNGARY**
 Dr. A. G l ó z i k

 Dr. Laszlo K o l t a i
 Ministry of Agriculture
- ICL ICELAND**
 Dr. Páll A. P á l s s o n
 Chief Veterinary Officer
- IRE IRELAND**
 Dr. P. J. O' C o n n o r
 Dr. J. M o y n a g h
 Department of Agriculture
- ITA ITALY**
 Dr. S. P r o s p e r i
 Istituto di Malatti Infettive
 Univ. degli Studi di Bologna
- LUX LUXEMBOURG**
 Dr. F. K o n s
 Ministère de l'Agriculture
- NET NETHERLANDS**
 Dr. J.H.M. Nieuwenhuijs
 Ministry of Welfare, Health
 and Cultural Affairs

 Dr. J.A. S m a k
 Veterinary Service
 Min. of Agricult. and Fisheries
- NOR NORWAY**
 Dr. Olav S a n d v i k

 Dr. H.O. B a c h - G a n s m o
 Det Kongelige Landbruksdepartm.
- POL POLAND**
 Dr. Jan K o l a s z
 Ministry of Agriculture

 Dr. Danuta S e r o k o w a
 National Institute of Hygiene

POR PORTUGAL

Dr. C.A.M. de Andrade Fontes
Direccao-Geral da Pecuaria

ROM ROMANIA

Dr. N. M o g o s
Ministère de l'Agriculture

SPA SPAIN

Dr. M.A. D i a z Y u b e r o
Ministerio de Agricultura,

Dr. J. N o m b e l a
Ministerio de Sanidad y Consumo

SWE SWEDEN

Dr. B. N o r d b l o m
National Board of Agriculture
Veterinary and Animal

SWI SWITZERLAND

Dr. A.I. W a n d e l e r
Vet. Bacteriological Institute
University of Berne

TUR TURKEY

Dr.E.İ s t a n b u l l u o g l u
Ministry of Agriculture,
Forestry and Rural Affairs

UNK UNITED KINGDOM

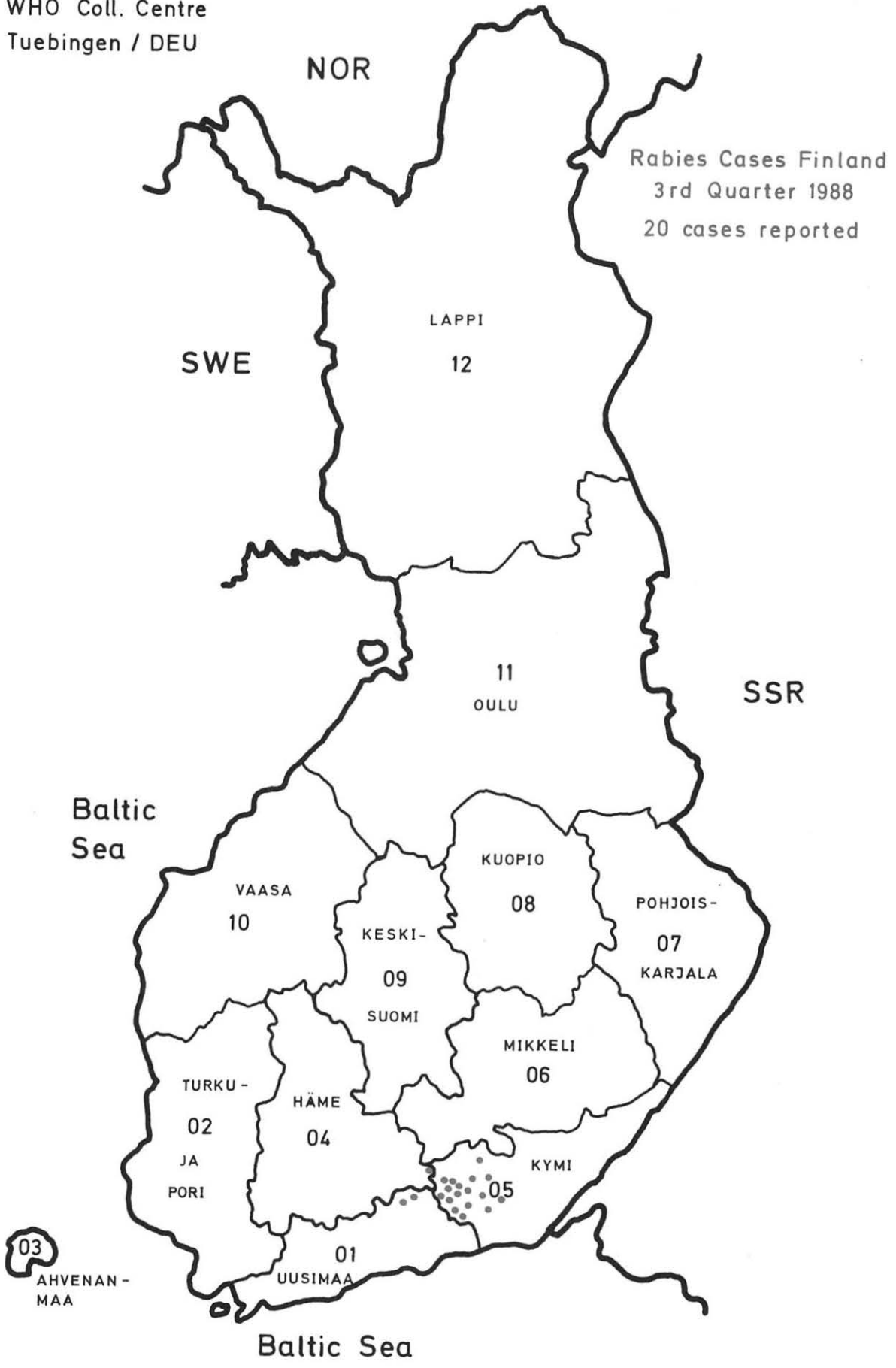
Dr. K.C. M e l d r u m
Ministry of Agriculture,
Fisheries and Food

YUG YUGOSLAVIA

Dr. M. R a d o v a n o v i c
Federal Committee for Agricult.

Dr. Milos P e t r o v i c
Pasteur Institute, Novi Sad

WHO Coll. Centre
Tuebingen / DEU

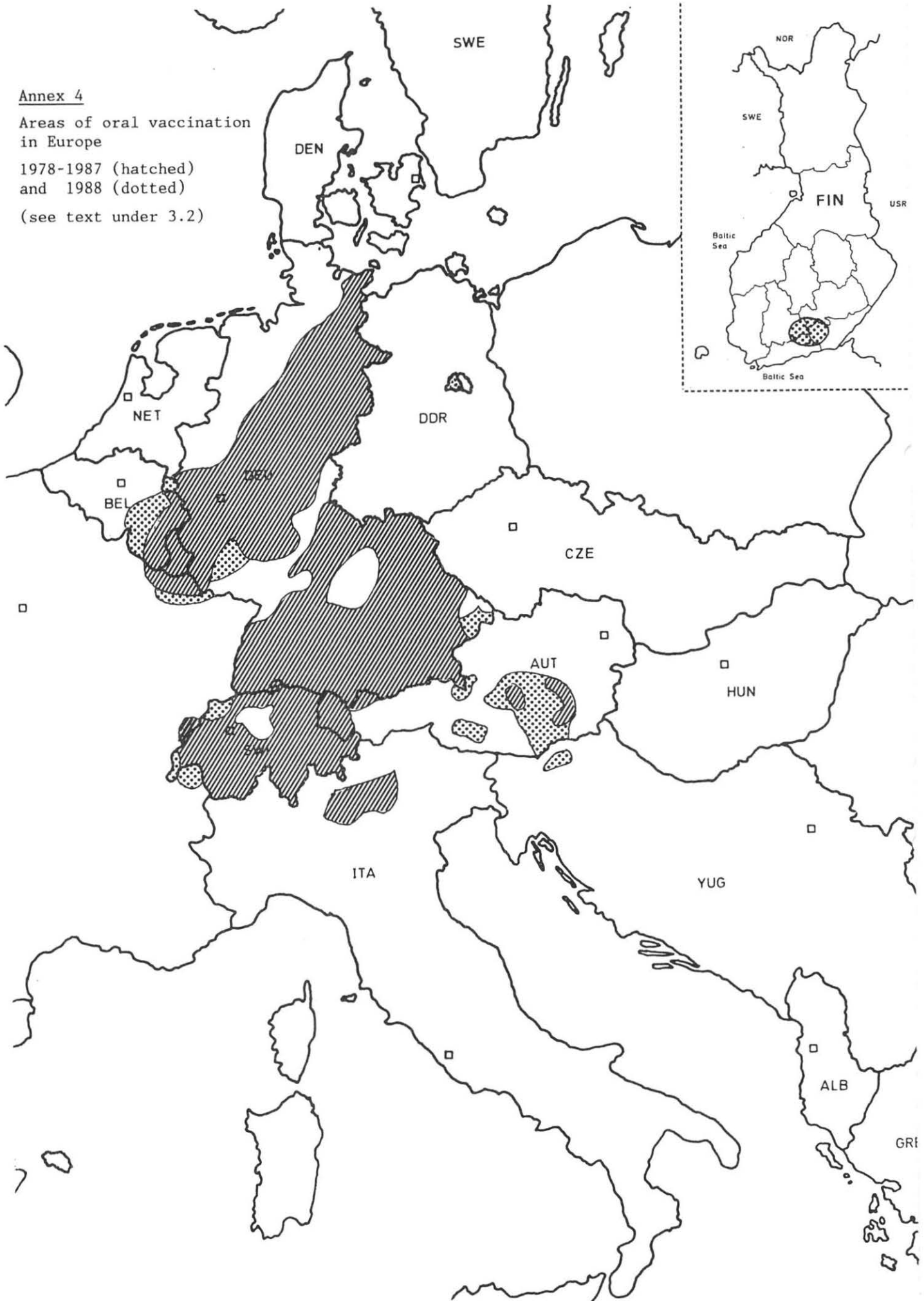


Annex 4

Areas of oral vaccination
in Europe

1978-1987 (hatched)
and 1988 (dotted)

(see text under 3.2)



ICE
(rabies free)

NOR
(mainland
rabies free)

FIN
(20)

SWE
(rabies free)

Rabies Cases Europe
3rd Quarter 1988

3664 cases reported

36 bat rabies cases included

SSR
(no data)

IRE
(rabies free)

UNK
(rabies free)

DEN
(0)

NET
(2)

DDR
(686)

POL
(401)

BEL
(185)

DEU
(523)

CZE
(360)

FRA
(472)

AUT
(320)

HUN
(236)

SWI
(28)

ROM
(8)

ITA
(2)

YUG
(246)

BUL
(rabies free)

POR
(rabies free)

SPA
(2)
(in North Africa)
(0)

ALB
(no data)

GRE
(0)

TUR
(137)

