RABIES BULLETIN EUROPE

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1. Introduction

This BULLETIN describes the reported rabies cases in Europe for the **Second Quarter 1990**, subsequently referred to as ***"This Quarter"***.

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

SECTION 3 reflects the situation for individual countries. For two countries, Czechoslovakia and the Soviet Union (European part), figures for the **first quarter 1990** are additonally presented as they had not arrived when the BULLETIN 1/90 was published.
In the Miscellaneous SECTION article 4.1 describes Guiding Principles for the **post-vaccination surveillance** of wildlife rabies in Europe - an initiative of the WHO Headquarter, Geneva, and this WHO Centre in Tübingen .

In 4.2 the results of the 6th **WHO Consultation on Monoclonal Antibody** in Rabies Diagnosis and Research are summarized. The course of an indigenous case of **human rabies from DDR** is described under 4.3.The rabies case data are tabulated for the second quarter 1990 and for the first quarter from Czechoslovakia and the European part of the Soviet Union in SECTION 5.

SECTION 6 lists the official contributors to the BULLETIN.

The geographical distribution of rabies cases in Europe for the second quarter is shown on maps of Europe and Turkey in the ANNEX.

2. Summary of Rabies in Europe

Second Quarter 1990

During ***"This Quarter"***, 4280 rabies cases were reported in Europe. Of these were 3087 in wild animals (71.9% of total), 1201 in domestic animals and one in a human.

Of the cases in wild animals 2765 were foxes, 1 arctic fox, 1 other fox species, 22 raccoon dogs, 79 badgers, 85 stone martens, 7 pine martens, 8 polecats, 1 ferret, 85 roe deer, 5 red deer, 2 fallow deer, 1 wild boar, 1 mouflon, 1hedgehog, 1 squirrel, 11 bats and 2 other wild animals. Of the 1201 domestic animals 359 were dogs (of which 131 - 36.5% of all dogs- were reported from Turkey, a country with dog-mediated rabies), 223 cats, 2 other domesticated carnivores, 22 horses, 1 donkey, 281 cattle, 303 sheep, 8 goats, 1 domestic rabbit and 1 other domestic animal. These data are summarized in Tables 1 and 3, SECTION 5.

Table 2 summarizes the Quarters 1 and 2 of 1990.

In comparison with the first quarter 1990 (6819 cases) Europe experienced in ***"This Quarter"*** the expected annual decrease in fox-mediated rabies (during the first quarter male foxes roam and fight due to the mating season) Though not following this pattern, Turkey has been included in the gross figure because of the relatively few cases. All countries with fox-mediated rabies indeed recorded less cases than during the first quarter 1990. This "seasonal decrease" is no doubt also supported by the effect of oral vaccinations of foxes against rabies presently practiced in most of the European countries.
Rabies-free countries in Europe participating in the surveillance were: Bulgaria, Greece, Iceland, Ireland, Portugal, Sweden and the United Kingdom of Britain and Northern Ireland. There were no cases reported from Denmark, Finland, Italy, the mainlands of Norway and Spain, but their last indigenously acquired case was recorded less than two years ago.
Bat rabies being distinct from rabies in terrestrial animals occurred in the Federal Republic of Germany (7 cases) and in the Netherlands (4 cases).
One indigenously acquired **human case** was reported from the German Democratic Republic.

3. Rabies in Individual Countries

3.1 Austria AUT

by Helmut Schnabl

During *"This Quarter"*, 572 cases of animal rabies were registered of 5941 samples received. In comparison with the previous quarter (908 cases) there was a decrease by 37%.
Of 553 rabid wild animals (97% of total) 470 were foxes, 24 badgers, 32 stone martens, 2 polecats, 20 roe deer, 3 red deer, 1 fallow deer and 1 mouflon. Of 19 rabid domestic animals, 6 were dogs, 5 cats, 1 horse, 1 bovine and 6 sheep.

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

Burgenland: 66 cases (12% of total); the Bezirk Rust was free of rabies

Kärnten: 5 cases (1%); rabies in the Bezirke St. Veit/Glan and Völkermarkt

Niederösterreich: 218 cases (38%); free of rabies were the Bezirke Baden, Gänserndorf, Kornenburg, Lilienfeld, Mistelbach, Mödling, St. Pölten, Scheibbs and Wien Umgebung

Oberösterreich: 119 cases (21-%); free of rabies were the Bezirke Linz, Steyr, Eferding, Kirchdorf/Krems, Rohrbach and Urfahr/Umgebung

Salzburg: 7 cases (1%); rabies in Salzburg/Umgebung only

Steiermark: 157 cases (27%); free of rabies were the Bezirke Deutschlandsberg, Fürstenfeld, Judenburg, Knittelfeld, Leibnitz, Murau and Voitsberg.

Furthermore, there were three federal provinces free of rabies: Tirol, Vorarlberg and Wien.

3.2 Belgium BEL

by J. Tambeur

24 rabies cases were registered during *"This Quarter"* in 20 localities of the provinces LIEGE, LUXEMBOURG and NAMUR. Of these were 10 cases in domestic animals (41.7% of total) - 2 cats and 8 cattle - and 14 cases in wild animals (58.3%) - 11 foxes, 1 badger and 2 other mustelides.

There was a drastic decrease compared to the previous quarter (by 74.5%) and even more in comparison with the same quarter of 1989 (minus 84.4%).

The proportion of affected foxes of the total was again low (45.8%) as during the previous quarter.

An oral vaccination campaign of foxes has been carried out in spring covering the entire infected area of the country (a total of 10.700 km²). 8500 km² has been treated with SAD B12 vaccine and 2200 km² has been treated with a rabies recombinant vaccine.

3.3 Bulgaria BUL

The country remained rabies-free.

3.4 Czechoslovakia CZE

by Miloslav Olach

First Quarter 1990
During the first quarter, there were 381 cases of rabies diagnosed in Chechoslovakia (Czech Republic 305 and Slovak Republic 76). Of the total number of cases 363 (95.3%) were in wild animals - 348 foxes, 5 badgers, 6 martens, 1 polecat, 1 mouflon and 2 roe deer. Of 18 domestic animals rabies was detected in 8 cats, 6 dogs and 4 sheep (4.7% of total).

The greatest number of rabies cases occurred in the regions (kraje) of West Bohemia - 69 (during first quarter 1989-125), East Bohemia - 54 (1/89 - 28), North Bohemia - 48 (1/89 - 109) and South Moravia - 46 (1/89 - 41). Of the districts (okresy) the greatest number of cases were noticed in Klatovy (29), followed by Bruntal (24), Blansko (21), Rychnov n.Kn. and Svitavy (14 each), Ceská Lípa (13) and Domazlice (12).

At present rabies is registered in Czechoslovakia in 355 foci involving 86 districts (Czech Republic 280 foci in 58 districts, Slovak Republic 75 foci in 28 districts).

There was no case of rabies reported in man.

Second Quarter 1990
During *"This Quarter"*, rabies was diagnosed in Czechoslovakia in 345 animals (291 cases in the Czech Republic and 54 in the Slovak Republic). There was a decrease noticed compa-

red to the second quarter 1989 by 26.6% and compared to the first quarter 1990 by 9.4%.

There were 320 cases in wild animals (92.8%) and 25 cases in domestic animals (7.2%). Of 320 cases in wild animals 302 occurred in foxes, 11 in martens, 3 in badgers, 3 in polecats and 1 in a red deer. Of the domestic animals rabies was found in 15 cats, 9 dogs and 1 rabbit.

The greatest number of rabies cases was registered in the region (kraje) of North Bohemia - 53 (during second quarter 1989 - 66), followed by the regions of East Bohemia - 51 (2/89 - 30), West Bohemia - 50 (2/89 - 140), North Moravia - 46 (2/89 - 54) and South Moravia - 45 (2/89 - 49). Of the districts (okresy) the incidence is highest in the district of Bruntal - 32, Rychnov n.Kn. - 17, Svitavy - 15, Klatovy and Brno-country - 13 each, and Louny - 12.

During ***"This Quarter"*** rabies occurred in Czechoslovakia in 333 foci involving 81 districts (Czech Republic 280 foci in 37 districts and Slovak Republic 53 foci in 24 districts).

There was no case of rabies reported in man.

3.5 Denmark DEN

by Eric Stougaard

No case of bat rabies was reported during ***"This Quarter"***. The country remained **rabies-free** in terrestrial animals.

3.6 Germany, DDR Democratic Republic

by Klaus Stöhr

658 rabies cases in animals and 1 human case (see as well under 4.1 in this BULLETIN) were registered during ***"This Quarter"*** amounting to a reduction of 312 cases compared to the previous quarter (971 cases).

Of 495 cases in wild animals (75% of total) the following animals were involved in the epizootic: 442 foxes, 19 stone martens, 10 badgers, 22 roe deer, 1 red deer and 1 wild boar. Of domestic animals, rabies was diagnosed in 58 dogs, 34 cats, 47 sheep, 22 cattle and 2 horses.

There was concentration of cases in the departments (Bezirke) of Chemnitz and Leipzig and in the bordering districts (Kreise) of these departments. The two Bezirke make up 11% of the territory of the country but registered 31% of the total rabies cases. There is concentration of cases as well in the south-west of the country, especially in the Bezirk Suhl.

The second oral vaccination campaign of foxes against rabies of a field trial in the German Democratic Republic was carried out in April on the island of Rügen and in 5 districts (Kreise) of the Bezirke Rostock and Schwerin in the north of the country. 47000 vaccine baits were used covering an area of 2700 km^2. Additionally, vaccine baits produced in Tübingen were used for the first time in the south of the country in the Bezirke Suhl, Gera and Chemnitz (covering an area of ca. 7000 km^2). The areas are marked in Figure 1.

There were no cases registered since April in the north-western part of the vaccinated area of the Bezirke Rostock and Schwerin.

An international WHO-Consultation on the "Preparation and Organization of Field Trials on Oral Immunization of Foxes against Rabies in the German Democratic Republic" took place in Wusterhausen on 27 April 1990, organized by the Staatliches Institut für Epizootiologie und Tierseuchenbekämpfung Wusterhausen. Here recent research developments on the subject in the German Democratic Republic were discussed as well as international cooperation in regard to sanitation of border areas.

3.7 Germany, Federal Republic DEU

by Winfried W. Müller

A total of 419 rabies cases was reported during ***"This Quarter"***, 306 cases less than during the previous quarter, and 257 cases less than during the second quarter 1989. There were 381 cases in wild animals (90.9% of total) and 7 of these were bats. All bat cases occurred in Niedersachsen, in areas with no rabies in terrestrial animals. 38 cases in domestic animals (1 dog, 13 cats, 12 cattle, 10 sheep, 2 horses) make up 9.1% of the total cases.

Concentration of cases was found in the Bundesländer (federal states) of Hessen, Rheinland-Pfalz and Baden-Württemberg. Newly infected were areas in Bayern in connection with an outbreak in Austria, and in Berlin-West which had been infected in the beginning of the year from the German Democratic Republic.

Oral vaccination as field trials continued in all states except for the two city states Hamburg and Bremen. The downward trend of rabies cases can be noticed again. It started in

1985, two years after the first field trial and was only interrupted in 1989 where an upward trend was registered throughout Europe. The figure for *"This Quarter"* in the Federal Republic of Germany is the lowest recorded for one quarter since the field trials had started.

3.8 Finland FIN

by Bengt Westerling

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

A total of 214 animals were examined for rabies; among them 13 cats, 12 dogs, 18 foxes, 145 raccoon dogs, 8 badgers and 9 lynx.

Oral immunization of raccoon dogs and foxes as field trial, which was started in 1988 was continued in mid-June, when 9400 Tübingen vaccine baits were spread by air on a 400 km² large part of the 1700 km² large area which had been infected. By this, the entire infection area has been vaccinated three times.

Provided no further cases of rabies appear, the field trial will be concluded by the end of the year.

A stock of 32000 Tübingen baits is kept freeze-stored at the National Veterinary Institute for emergencies.

3.9 France FRA

by Jean Blancou

715 rabies cases were registered during *"This Quarter"*, 417 cases less than during the previous quarter. 563 cases were diagnosed in the fox (78.7% of total), 27 in other wild animals and 125 in domestic animals (11 dogs, 20 cats, 19 cattle, 67 small ruminants and 8 horses).

The departments (départements) registering the greatest number of cases during *"This Quarter"* were Nièvre with 74 and Doubs with 71 cases.

The oral vaccination of foxes with SAD B19 vaccine and/or the recombinant rabies vaccine was carried out or repeated in a total area of 42836 km² . The results have been very encouraging in areas already vaccinated twice, namely the southern front of the disease and along the border with Switzerland (4 cases in March 1990 compared to 34 in March 1989).

3.10 Greece GRE

by A. Saravanos

The country remained rabies-free.

3.11 Hungary HUN

by Lazlo Koltai

During *"This Quarter"*, 153 rabies cases were reported in Hungary, 10.9% more than during the second quarter - 1989 (138 cases).
The provinces (Komitate) mostly affected were to the west of the river Danube: Vas with 20 cases, Tolna with 12 cases.
An oral vaccination of foxes against rabies was intended, but could not be carried out for financial reasons.

3.12 Iceland ICE

The country remained rabies-free.

3.13 Ireland IRE

The country remained rabies-free.

3.14 Italy ITA

by Santino Prosperi

During *"This Quarter"* no case of rabies was reported in Italy. An intensive surveillance continues in areas at risk.

3.15 Luxembourg LUX

by Joseph Kremer

During *"This Quarter"*, 13 rabies cases were registered in the Grand Duchy of Luxembourg. Of these were four in domestic and 9 in wild animals. Thus, a drastic reduction of cases as started in the beginning of 1990 continued. There was an oral vaccination of foxes practiced with vaccine baits produced in Tübingen during the week 14 to 20 May 1990 which doubtlessly helped to improve the rabies situation. Hopefully, the country is going to become rabies-free soon.

3.16 Netherlands NET

by J.H.M. Nieuwenhuijs

A total number of 536 animals (158 adult foxes, 307 young foxes, 2 cows, 2 dogs, 6 cats, 8 badgers, 1 muskrat, 2 squirrels and 50 bats) were investigated for rabies during *"This Quarter"*. Of these four bats were reported rabid. Two of them have already been determined as Eptesicus serotinus.
In fact, the total number of animals sent in for investigation was 544. Five young foxes and three bats however were not suitable for laboratory diagnoses.

3.17 Norway NOR

by Eivind Liven

There was one case of rabies reported in an arctic fox on the island of Svalbard during *"This Quarter"*.

The mainland of Norway remained rabies-free.

3.18 Poland POL

A total of 317 rabies cases were reported from Poland during *"This Quarter"*. Of these were 259 in wild animals (214 foxes, 22 raccoon dogs, 5 badgers, 5 pine partens, 1 polecat, 1 ferret, 9 roe deer, 1 hedgehog, 1 squirrel) and 58 in domestic animals (23 dogs, 23 cats, 9 cattle, 1 sheep, 2 other domesticated carnivores).

In comparison with the previous quarter (664 cases), there was a decrease by 349 cases (more than half). Compared to the second quarter 1989 (293 cases) there was an increase by 24 cases.

Out of 49 provinces (voivodeships) 13 (all located in the eastern half of the country) had no rabies reported. There was concentration of cases in the western half of the country.

3.19 Portugal POR

The country remained rabies-free.

3.20 Romania ROM

by Horatiu Olaru

During *"This Quarter"*, 8 rabis cases were reported from Romania, 7 domestic animals (2 dogs, 2 cats, 3 cattle) and 1 wild animal (1 badger).

7 cases occurred in 5 provinces in the northern half of the country. The remaining case was registered in the province of Jalomita in the south-east of the country.

3.21 Spain SPA

by José Luis de Felipe Gardón

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

There was one case in the Spanish territory of North Africa (Melilla).

There was no case of bat rabies.

3.22 European Part of the Soviet Socialist Republics SSR

by W.A. Wedernikov

First Quarter 1990
During the first quarter 1990, 1119 rabies cases in animals were recorded in the European part of the Soviet Union.

Of the 1119 cases were 714 (63.8% of total) in domestic animals - 139 dogs, 143 cats, 303 cattle, 117 small ruminants, 11 horses, 1 other domestic animal - and 405 cases in wild animals - 338 foxes and 67 other wild animals.

Second Quarter 1990
During *"This Quarter"*, 723 rabies cases in animals were recorded. Of these were 537 in domestic animals (74.3% of total) and 186 in wild animals.

* * *

3.23 Sweden SWE

The country remained rabies-free.

3.24 Switzerland SWI

by Andreas Kappeler

During *"This Quarter"*, the Swiss Rabies Center received 368 animals for examination. 5 (1.4%) of these were positive for rabies. In the previous quarter the same number of cases had been recorded (0.7% of 744), whereas 8 of 416 (1.9%) were positive in the second quarter of 1989. All 5 cases were in foxes.

Two rabies cases have been observed in the Canton of Jura, close to the French border. The remaining 3 were recorded in northwestern Switzerland, where a serious outbreak had been observed in summer 1989. The situation in this particular area has much improved now. 3 vaccination campaigns took place there since spring 1989 (spring and autumn 1989, spring 1990). A further campaign is planned for autumn 1990.

7 bats (3 *Pipistrellus pipistrellus*, 1 *Pipistrellus nathusii*, 1 *Myotis mytois*, 1 *Vespertilio murinus*, 1 *Eptesicus serotinus*) examined with both immunofluorescence and i.c.-inoculation into suckling mice revealed no rabies virus. Switzerland has not experienced any rabies cases in bats yet.

No bite exposures of humans to proven rabid animals were recorded in the second quarter of 1990. The number of people treated for non-bite exposures is not recorded.

* * *

3.25 Turkey TUR

During *"This Quarter"*, 165 rabies cases were reported from Turkey. All cases were in domestic animals. There were 131 cases diagnosed in dogs (79.4% of total), 7 in cats, 21 in cattle, 2 in sheep, 2 in goats, one in a horse and one in a donkey.

The rabies cases occurred throughout the country, but mostly affected were the provinces Istanbul with 30 cases, Bursa with 20, Izmir with 19, Gaziantep with 12. All other affected provinces recorded between 1 and 9 cases.

3.26 United Kingdom UNK

by A.D. Hayward

The country remained rabies-free during *"This Quarter"*.

Surveillance of 1st and 2nd Quarters 1990

During the first and second quarters of 1990, 6 investigations of suspected rabies were carried out outside quarantine. These involved 2 cats, 2 dogs a fox and a badger. Laboratory examinations were carried out on 4 occasions with negative results. Of the remaining cases, one was resolved after 3 days observation in isolation premises and in the other rabies was excluded after clinical examination of the animal by veterinary staff. During the period of this report the brains of 32 animals that died in authorised quarantine were subjected to laboratory examination. All gave negative results.

Between January and June 1990, 62 bats were examined for rabies, all gave negative results.

There were no human cases of rabies in the United Kingdom during this period.

3.27 Yugoslavia YUG

156 rabies cases were reported in Yugoslavia during *"This Quarter"*, 97 cases less than during the previous quarter and 120 cases less than during the second quarter 1989. 137 of all cases were diagnosed in the fox (87.8% of total), 5 in other wild animals and 14 in domestic animals (6 dogs, 7 cats, 1 sheep).

Rabies cases were concentrated at the Slovenian/Croatian border area. The total of cases in Slovenia has dropped drastically (from 356 cases 1/89 to 48 cases in 2/90) since only very few cases were still reported in the area of oral vaccination of foxes along the border with Italy. There were scattered cases in Bosnia and Herzegovina (8) and Wojwodina (9).

4. MISCELLANEOUS ARTICLES

4.1 Surveillance of Wildlife Rabies in Europe

by Konrad Bögel and Lothar G.Schneider

(prepared by Veterinary Public Health unit, WHO, Geneva in collaboration with the WHO Collaborating Centre for Rabies Surveillance and Research, Federal Research Institute for Animal Virus Diseases, Tübingen, FRG)

1. Introduction

In Central Europe, techniques and strategies for oral fox vaccinations against rabies have been studied extensively during recent years and are now well established and accepted.

In several countries, the methodology is emerging from the stage of large scale field trials and is being integrated into regulatory rabies control measures.

Surveillance plays an important part in the planning of rabies control. **Before** vaccination, rabies surveillance is usually satisfactory, particularly when hunting incentives (e.g. bounties) are granted. Generally, surveillance is also sufficiently intensive **during** vaccination campaigns, particularly where hunters and wildlife services are enganged in follow-up examinations of bait-uptake and seroconversion of foxes. The sampling of foxes is supported by hunting incentives in order to be representative.

However, problems arise with rabies surveillance **after** vaccination. In this phase adequate surveillance is most important, since residual foci need to be readily detected, freedom from rabies has to be verified and the safety of the whole procedure has to be assessed. Unfortunately, at this stage, fox sampling and examination is often no longer stimulated by incentives, so that fewer foxes are obtained for rabies examination.

Therefore, a new rabies post-vaccination programme is presented to complement and improve the existing European Rabies Surveillance System with the objective of ensuring or facilitating the identification and declaration of rabies-free areas. This calls for an active epidemiological extension service.

2. Objectives of the rabies post-vaccination programme

2.1 Rabies-free area

According to the WHO Expert Committee on Rabies (7th report, TRS 709, 1984) an area is regarded free from rabies if no case of rabies has been recorded during a two-years period.

Under conditions of intensive surveillance this principle can be applied in wildlife rabies. States, or parts of states, may be declared rabies-free by WHO, if the following requirements for rabies surveillance are met (2.2 to 2.5).

2.2 Reporting negative as well as positive cases

Reporting to the WHO Collaborating Centre for Rabies Surveillance and Research at the Federal Research Institute for Animal Virus Diseases in Tübingen by the established procedures is not limited to animals found positive, but will include all animals found negative by fluorescent antibody technique. The additional data will be processed by the Centre and presented in maps and tables permitting easy analysis.

2.3 Minimum size of a rabies-free area

A declared rabies-free area, or an area becoming free from rabies following vaccination and intended to be declared rabies-free under the conditions stipulated by this concept, should be large enough to prevent reinfection by simple re-invasion.

- The area should be at least 80 km in diameter (approximately 5000 km^2).
- The nearest existing rabies case or focus at the end of the two-year observation period should be at least 50 km away from the borders of the rabies -free area.
- So-called natural barriers, such as rivers or other relatively effective obstacles to the spread of rabies, should be disregarded during the post-vaccinal stage of surveillance.
- During the two-year observation period preceding the declaration of freedom from rabies, a minimum sample size (see 2.4) of foxes and/or other

proven rabies vector species (e.g. raccoon dogs) must be presented for rabies examination and found to be free from rabies.

2.4 Minimum sample size of foxes

For safety and reliability, a minimum number of foxes from the rabies-free area has to undergo a laboratory examination and the results should be documented and reported to the WHO Collaborating Centre, Tübingen.

The minimum sample size is regarded as 8 foxes per 100 km² and year. An even distribution of the samples sites over the area should be organized.

It is recognized that the required number of foxes can only be procured through:

i) the intensive education of hunters and forestry personnel on the vital necessity of sampling foxes during the rabies-free stage. Pertinent information should be provided by means of letters, pamphlets, public media and, last but not least, through presentations by rabies experts during routine hunters meetings; or

ii) incentives (e.g., bounties) paid for each fox shot and submitted for examination.

2.5 Epidemiological extension service (EES)

Experience has demonstrated the difficulties in procuring funds for post-vaccination activities (incentives for hunters) once the vaccination campaigns have ceased. The voluntary cooperation of hunters can hardly be expected unless they are properly briefed and reimbursed for the cost of shipping foxes or the collection of specimens is assured by special investigation services.

It is, therefore, recommended that an EES-group is established and coordinated by the WHO Collaborating Centre for Rabies Surveillance and Research in Tübingen and by national institutions within the framework of the European Surveillance Programme, to deal with post-vaccination surveillance in Europe. The group's duties will be to ensure the necessary data collection and information systems, and to organize funding of post-vaccination surveillance.

The main tasks of the EES will be:

- Compilation, tabulation and mapping of recorded fox data (2.2).
- Feedback information to hunters, hunting magazines, and public media.
- Personal stimulation of hunters and hunting societies through presentations and seminars.
- Coordinating cross-border activities during planning, execution and surveillance of vaccinations in European countries participating in oral vaccination programmes.
- Coordination of emergency interventions in cases of re-introduction of the infection.

3. Financing

Financing of part of the above programme and the EES-activities (2.5) may be achieved through national services and-/or private institutions e.g. companies or foundations preferably associated with vaccine and bait production.

There are two possible ways of funding hunting incentives (i.e. bounties):

i) The EES reaches written agreement with national or local authorities to cover, or subsidize, with hunting incentives the sampling of the required minimum number of foxes during at least two years following the presumed success of vaccination schemes (i.e. from the last rabies case observed in the area defined in accordance with 2.3).

ii) An amount equivalent to the defined fox bounty per 100 km² and 2-3 years is integrated into the price of the vaccine and paid by the EES to hunters in the post-vaccination period.

4. Rabies-free countries

4.1 Countries and areas recognized as rabies-free are requested to report annually to the WHO Collaborating Centre for Rabies Surveillance and Research in Tübingen all specimens examined and found negative for rabies. Positive findings should be reported immediately.

4.2 Countries free from terrestrial rabies, but having experienced Duvenhage lyssa viruses in bats are requested to proceed as under 4.1, including all bats examined for rabies. All bats should be identified by the exact species name.

* * *

4.2 WHO Consultation on Monoclonal Antibodies (MABs) in Rabies Diagnosis and Research

by Winfried W. Müller

WHO has coordinated for several years the exchange of knowledge on the use of monoclonal antibodies in the field of rabies. The sixth WHO consultation on monoclonal antibodies in rabies diagnosis and research took place at The Wistar Institute, Philadelphia, Pennsylvania, U.S.A., on 2-3 April 1990. The representatives of seven laboratories participated in this meeting:

Animal Dieseases Research Institute, P.O. Box 11300, Station H, Nepean, Ontario, Canada K2H 8P9;

WHO Collaborating Centre for Rabies Surveillance & Research, Rabies Laboratory, Federal Research Institute for Animal Virus Diseases, Postfach 1149, D-7400 Tübingen, Federal Republic of Germany

WHO Collaborating Centre for Reference and Research on Rabies, Rabies Unit, Institut Pasteur, 28, rue du Docteur Roux, 75724 Paris Cédex 15, France;

Central Veterinary Laboratory, New Haw, Weybridge, Surrey, U.K.;

WHO Collaborating Centre for Reference and Research on Rabies, Rabies Laboratory, Center for Infectious Diseases, Centers for Diseases Control, Mailstop G-33, Bldg 157SSB611, 1600 Clifton Road, Atlanta, GA 30333, U.S.A.;

WHO Collaborating Centre for Reference and Research on Rabies, The Wistar Institute of Anatomy and Biology, 36th Street at Spruce, Philadelphia, PA 19104, U.S.A.;

Laboratory for Rabies Prophylactics, WHO Collaborating Centre for Reference and Research on Rabies, Institute of Poliomyelitis and Viral Encephalitides, Academy of Medical Sciences of the USSR, Kievskoe Sosse 27 Moscow 142782, USSR

The meeting was held under two topics:

Part 1 -
Monoclonal Antibodies in Rabies Diagnosis

One of the main tasks of these meetings is the standardization of MAbs. Here an exchange of MAbs and viruses is arranged and later results of the different laboratories on reactivity pattern will be compared. According to the performance of the MAbs, recomendations for limited panels can be made. The final conclusions and recommendations of part one of the meeting were as follows:

The panels as decided in the meeting allow identification of the various lyssavirus types, subtypes, and the differentiation of major virus strains used for vaccine production from field virus isolates. An additional panel of MAbs was assessed by the group during 1989, in order to differentiate virus isolates of terrestrial animal species from those circulating in European bat species. Furthermore, individual laboratories belonging to the group developed specific panels of MAbs allowing differentiation of rabies virus isolates from terrestrial animals as well as bats originating from rabies enzootic areas of the United States, Western Europe and, to a lesser extent eastern Europe, Latin America, Asia and Africa.

The group therefore considers that after 8 years of WHO-coordinated collaborative research (8 consultations were held from 1982 on), most objectives defined during the first WHO consultation on the subject held in Geneva in September 1982 *(see italic text below)* have been fulfilled.
In this context the group recommends that priority be given to:

1. Distribution of the reduced panel of MAbs to selected laboratories and training of laboratory staff in the use of limited monoclonal antibodies for rabies diagnosis;

2. Procurement of technical support to laboratories which have shown interest in MAbs and have demonstrated their ability to initiate preliminary screening of isolates (this refers especially to USSR, China and Nigeria);

3. Promoting the collection and proper storage of virus isolates in Asian, African and east European countries and facilitating their examination by the laboratories belonging to the group.

Specifically, further investigation of bat isolates from the Ukraine and bats as well as Suslik isolates from Siberia is required. These isolates have been distributed to the various WHO collaborating centres. Scientists from the Rabies Unit of the WHO Collaborating Centre for Reference and Research on Rabies at the Institute of Poliomyelitis and Encephalitides, Moscow, should be provided with the reduced panel of 10 MAbs for screening new isolates and should be regularly invited to group meetings.

There is also need to increase the geographical coverage of the group to improve the knowledge of rabies epidemiology in Asia.

Under these conditions, WHO should consider organizing the next meeting of the group in Moscow, during summer 1991. The possibility of inviting a scientist from China to this meeting should be investigated.

The WHO recommendations of 1982 quoted on the previous page are as follows:

"Recommendation of the Consultation on the Application of Monoclonal Antibody in the Characterization of Laboratory and Field Strains of Rabies Virus, Geneva, September 1982 (WHO/Rab.Res./82.15)

The WHO collaborative study should be continued and expanded with the active participation of more laboratories in different parts of the world. For this kind of study a basic panel of monoclonal antibodies should be agreed upon. The same techniques should be used in all laboratories and a rapid exchange of results should be ensured. Isolates that have unusual antigenic characteristics should be carefully preserved.

Special attention should be given to virus isolates from victims of rabies who die following a complete post-exposure treatment and from animals that succumb to rabies despite previous vaccination.

Further use of monoclonal antibody should be devoted to the following areas:

1. The study of the antigenic characteristics of rabies virus strains from different geographical areas should continue. This will allow for clarification of epidemiological events.

2. Efforts should be mede for the preparation of monoclonal antibodies specific for selected field viruses representing rabies reservoirs from different parts of the world.

3. Until the host range of rabies-related viruses is more accurately established, routine diagnosis of all rabies-suspected cases in areas where rabies-related viruses could be present should include a panel of monoclonal antibodies capable of identifying the viruses.

4. Monoclonal antibodiy reactivity patterns of all viruses used for vaccine production should be established. This will allow differentiation of vaccine-induced rabies in animals."

Part 2 -
Monoclonal Antibodies for Post-Exposure Treatment of Rabies

Since rabies post-exposure treatment failures are still reported and human immunoglobulin is not available worldwide in sufficient quantities, it is encouraging to try to produce MAbs free of side effects for rabies post-exposure treatment in humans.

Development of a MAbs Cocktail:
Experiments carried out at the Wistar Institute showed that neutralizing antibodies were most effective in the early stages of infection, and before invasion of the nervous system. Once the nervous system has been invaded, the efficacy of the MAbs is questionable. Rabies MAbs have clear advantages over the products now in use:
- They are highly specific.
- Their production can be closely controlled.
- Their quality can be easily monitored.

Since one antibody alone could not be used, because of the possibility of escape variants, the strategy followed by Wistar's scientists was to choose MAbs with different specificities and to pool them into a "cocktail" of mouse MAbs. Five MAbs were empirically selected. All selected antibodies have high binding affinities and the present cocktail contains in addition to 3 G-protein specific antibodies, two MAbs with anti-N activity. Although it was difficult to explain the action of the latter two MAbs, it can be demonstrated that anti-N MAbs are effective with activated macrophages.

Initial progress has been made in the field by trying the effect of these MAbs in protection experiments with animals.

And there is hope that genetically engineered MAbs can be produced. At present, murine MAbs are produced from hybridomas in mice as ascites fluid or in tissue culture, but both methods are expensive and limited in capacity.

For the part 2 of the meeting the group formulated recommendations and future study:
1. The group discussed the various topics concerning the development and evaluation of MAbs in post-exposure treatment:
- The efficacy of a mixture of MAbs against epidemiologically relevant street virus should continue to be evaluated.

- The MAb "cocktail" should consist of at least 3 antibodies to minimize the probability of treatment failures due to escape variants.

- Only MAbs of IgG isotypes should be considered.

- MAbs should be of high affinity and broad specificity.

- The composition of the "cocktail" should be adjusted to regional needs (e.g.South-east Asia, Latin America, etc.) dependent upon local street virus types.

2. Future research:
- Testing should continue in small animal models, preferably Syrian hamsters (female, 100-200 grams).

- The HRIG should be used as a standard.

- Potency testing in primate models should be performed in addition to other laboratory animal models especially using MAbs and the combination of MAbs and vaccine.

- Dependent upon primate trials, initial tests in humans must conform to basic FDA/-IABS suggestions before initiation.

- Depending upon local needs and epidemiological circumstances, the efficacy of post-exposure treatment of captive animals (e.g., companion animals, livestock, exotic animals in zoos, etc.) with MAbs (and vaccine), must be individually evaluated.

- Future research should continue to evaluate the various biotechnological advances (e.g., antibody chimeras, "humanization" of murine MAbs, recombinant-based and produced antibodies, etc.). This type of research should be strongly encouraged.

(text partly taken from WHO document WHO/Rab.Res./90.34)

4.3 Human rabies case in the German Democratic Republic

by Jochen Süss
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A woman patient from a village near Leipzig, aged 57, was hospitalized at a Leipzig district hospital on 3 May 1990. On 19 May 1990 she had to be transferred to an intensive care unit where she died on 30 May 1990 at 11:10 p.m. In the hospital (report by Dr. Kirsch, Leipzig) the following diagnoses were made:
-Rabies after several fox bites
-Bacterial meningitis
-Secondary renal cirrhosis

Anamnesis: On 3 May 1990, at 10:00 a.m., the patient was bitten by a fox having entered a dog-kennel, first in the leg, later in the arms and the face. The fox escaped but might have been the one which was killed later in the day near the mill of the village. At a veterinary investigation centre in Leipzig rabies was confirmed by FAT on the same day.

At approx. 4 p.m. the patient was given HIG-Dessau (10.0 ml) and Rabivac. Bite wounds were on both legs, on the arms and on the left eye-lid. Besides these wounds there was no obvious clinical irregularities.

The simultaneous rabies treatment progressed without complication until 14 days after exposure when headache and vomiting developed. The following day there was a marked clinical picture of meningitis. There was pyoid liquor.

Nosogenesis and therapy: The connection of a craniocerebral trauma after a bicycle accident (hospitalization from 30 November 1989 to 31 January 1990) and the results of the liquor tests left no doubt that a bacterial meningitis existed. It was treated with high doses of Ampicillin and Gentamycin. The liquor cleared. On 17 and 18 May 1990 the patients neurological conditions had improved when she suddenly fell unconscious during the night from 18 to 19 May 1990 and had problems with breathing. She was transferred to the intensive care unit since a complication of the pyoid meningitis was assumed.

Problems with breathing and unconsciousness continued in the intensive care unit. At times there was twitching in the lower parts of the leg. On 30 May 1990 death occurred with the clinical picture of circulatory collapse.

Postmortem examination:
Macroscopically an encephalitis with necroses and hemorrhages was seen. There was no purulent meningitis anymore, but a sphenoidal empyema confirmed the previous clinical assumption of a purulent meningitis. The kidneys were relatively small.

Rabies diagnosis (Potsdam) was confirmed by the following methods:
-Direct FAT
-Mouse inoculation test (with suckling mice)
-Virus isolation on neuroblastoma and BHK/BSR cells
-Enzym-Immuno-Assay

- The serum sample of May 19 (16 days after the start of vaccination) revealed an antibody titre of 244 IU/ml.

Summary:
After rabies exposure the patient developed clinical signs of a purulent meningitis while at the same time a sphenoidal empyema existed. At death the meningitis had improved after antibiotic therapy. Manifestation of rabies occurred during the course of the bacterial meningitis whereby the stages I and II of the disease, prodrome and acute neurologic phase were not pronounced. A reduced resistance due to a secondary renal cirrhosis may have played an important role for the development of rabies.

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

TABLE 1

EUR EUROPE 2/90	RABIES CASES													1. 4.90 - 30. 6.90	
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	6	5	1	1	6	-	19	470	24	34	24	1	553		572
BEL BELGIUM	-	2	8	-	-	-	10	11	1	2	-	-	14		24
BUL BULGARIA *							0						0		0
CZE CZECHOSLOVAKIA	9	15	-	-	-	1	25	302	3	14	1	-	320		345
DDR GERMAN DEM. REPUBLIC	58	34	22	2	47	-	163	442	10	19	23	1	495	1	659
DEN DENMARK *							0						0		0
DEU FED.REP. OF GERMANY	1	13	12	2	10	-	38	312	21	9	32	7	381		419
FIN FINLAND *							0						0		0
FRA FRANCE	11	20	19	8	67	-	125	563	12	12	3	-	590		715
GRE GREECE *							0						0		0
HUN HUNGARY	10	13	11	-	1	-	35	116	-	1	-	1	118		153
ICE ICELAND *							0						0		0
IRE IRELAND *							0						0		0
ITA ITALY *							0						0		0
LUX LUXEMBOURG	-	1	3	-	-	-	4	7	-	1	-	1	9		13
NET NETHERLANDS							0	-	-	-	-	4	4		4
NOR NORWAY 1)							0	-	-	-	-	1	1		1
POL POLAND	23	23	9	-	1	2	58	214	5	7	9	24	259		317
POR PORTUGAL *							0						0		0
ROM ROMANIA	2	2	3	-	-	-	7	-	1	-	-	-	1		8
SPA SPAIN 2)	1	-	-	-	-	-	1						0		1
SSR SOVIET SOCIALIST REP	101	81	172	8	174	1	537	186	-	-	-	-	186		723
SWE SWEDEN *							0						0		0
SWI SWITZERLAND + LIECHT							0	5	-	-	-	-	5		5
TUR TURKEY	131	7	21	1	4	1	165						0		165
UNK UNITED KINGDOM *							0						0		0
YUG YUGOSLAVIA	6	7	-	-	1	-	14	137	2	2	-	1	142		156
TOTAL	359	223	281	22	311	5	1201	2765	79	101	92	41	3078	1	4280
PER CENT	8.4	5.2	6.6	0.5	7.3	0.1	28.1	64.6	1.8	2.4	2.1	1.0	71.9	0.0	100.0

* NO CASES, 1) ISLAND OF SVALBARD, 2) NORTH AFRICA.

TABLE 2

EUR EUROPE 1-2/90 RABIES CASES 1. 1.90 - 30.06.90

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	7	16	4	1	9	-	37	1269	59	63	51	1	1443		1480
BEL BELGIUM	2	10	46	3	5	-	66	44	3	5	-	-	52		118
BUL BULGARIA *							0						0		0
CZE CZECHOSLOVAKIA	15	23	-	-	4	1	43	650	8	21	3	1	683		726
DDR GERMAN DEM. REPUBLIC	116	90	49	6	81	1	343	1134	19	54	71	8	1286	1	1630
DEN DENMARK *							0						0		0
DEU FED.REP. OF GERMANY	8	38	27	5	18	-	96	896	40	25	75	12	1048		1144
FIN FINLAND *							0						0		0
FRA FRANCE	30	48	67	27	122	1	295	1493	17	28	12	2	1552		1847
GRE GREECE *							0						0		0
HUN HUNGARY	25	33	20	-	3	2	83	427	-	2	5	2	436		519
ICE ICELAND *							0						0		0
IRE IRELAND *							0						0		0
ITA ITALY *							0						0		0
LUX LUXEMBOURG	-	2	11	1	7	-	21	29	-	1	1	1	32		53
NET NETHERLANDS							0	-	-	-	-	4	4		4
NOR NORWAY 1)							0	-	-	-	-	1	1		1
POL POLAND	53	61	25	-	1	11	151	701	12	20	29	68	830		981
POR PORTUGAL *							0						0		0
ROM ROMANIA	4	2	3	-	-	-	9	6	1	-	-	-	7		16
SPA SPAIN 2)	1	-	-	-	-	-	1						0		1
SSR SOVIET SOCIALIST REP	240	224	475	19	291	2	1251	524	-	-	-	67	591		1842
SWE SWEDEN *							0						0		0
SWI SWITZERLAND + LIECHT							0	10	-	-	-	-	10		10
TUR TURKEY	257	12	31	1	6	6	313	-	-	-	-	5	5		318
UNK UNITED KINGDOM *							0						0		0
YUG YUGOSLAVIA	8	11	1	-	2	-	22	376	2	5	1	3	387		409
TOTAL	766	570	759	63	549	24	2731	7559	161	224	248	175	8367	1	11099
PER CENT	6.9	5.1	6.8	0.6	4.9	0.2	24.6	68.1	1.5	2.0	2.2	1.6	75.4	0.0	100.0

* NO CASES, 1) ISLAND OF SVALBARD, 2) NORTH AFRICA.

TABLE 3

EUR EUROPE 2/90 — RABIES CASES 'OTHER ANIMAL SPECIES' — 1. 4.90 - 30. 6.90

LOCATION CODE NAME	OTHER DOMESTIC ANIMALS				OTHER WILD ANIMALS									TOTAL
	OTH.DOM. CARNIVO.	DONKEY	DOMEST. RABBIT	OTHERS	ARCTIC FOX	OTH. FOX	RACOON DOG	WILD BOAR	MOUFLON	HEDGEHOG	INSECT BAT	SQUIRREL	OTHERS	
AUT AUSTRIA	-	-	-	-	-	-	-	-	1	-	-	-	-	1
CZE CZECHOSLOVAKIA	-	-	1	-	-	-	-	-	-	-	-	-	-	1
DDR GERMAN DEM. REP.	-	-	-	-	-	-	-	1	-	-	-	-	-	1
DEU FED.REP.OF GERMANY	-	-	-	-	-	-	-	-	-	-	7	-	-	7
HUN HUNGARY	-	-	-	-	-	1	-	-	-	-	-	-	-	1
LUX LUXEMBOURG	-	-	-	-	-	-	-	-	-	-	-	-	1	1
NET NETHERLANDS	-	-	-	-	-	-	-	-	-	-	4	-	-	4
NOR NORWAY 1)	-	-	-	-	1	-	-	-	-	-	-	-	-	1
POL POLAND	2	-	-	-	-	-	22	-	-	1	-	1	-	26
SSR SOVIET SOC. REP.	-	-	-	1	-	-	-	-	-	-	-	-	-	1
TUR TURKEY	-	1	-	-	-	-	-	-	-	-	-	-	-	1
YUG YUGOSLAVIA	-	-	-	-	-	-	-	-	-	-	-	-	1	1
TOTAL	2	1	1	1	1	1	22	1	1	1	11	1	2	46
PER CENT	4.3	2.2	2.2	2.2	2.2	2.2	47.8	2.2	2.2	2.2	23.9	2.2	4.3	100.0

1) ISLAND OF SVALBARD.

AUT AUSTRIA — RABIES CASES — 1. 4.90 - 30. 6.90

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		1
103	EISENSTADT - LAND							0	6	-	-	-	1	7		7
104	GUESSING	1	-	-	1	2	-	4	14	-	-	2	-	16		20
105	JENNERSDORF							0	3	-	-	-	-	3		3
106	MATTERSBURG							0	3	-	-	-	-	3		3
107	NEUSIEDL AM SEE							0	7	-	-	-	-	7		7
108	OBERPULLENDORF							0	8	-	-	-	-	8		8
109	OBERWART							0	16	-	1	-	-	17		17
205	SANKT VEIT AN DER GL							0	4	-	-	-	-	4		4
208	VOELKERMARKT							0	1	-	-	-	-	1		1
301	KREMS AN DER DONAU-S							0	1	-	-	-	-	1		1
305	AMSTETTEN	1	-	-	-	-	-	1						0		1
307	BRUCK AN DER LEITHA							0	1	-	-	-	-	1		1
309	GMUEND							0	6	-	3	-	-	9		9
310	HOLLABRUNN							0	11	-	1	-	-	12		12
311	HORN	-	1	-	-	2	-	3	31	1	4	-	-	36		39
313	KREMS AN DER DONAU-L	1	-	-	-	-	-	1	24	1	3	1	-	29		30
315	MELK							0	8	-	-	1	-	9		9
318	NEUNKIRCHEN							0	73	3	2	7	-	85		85
321	TULLN							0	2	-	-	-	-	2		2
322	WAIDHOFEN AN DER THA							0	5	-	-	-	-	5		5
323	WIENER NEUSTADT-LAND							0	5	1	1	-	-	7		7
325	ZWETTL	-	1	-	-	-	-	1	9	1	6	-	-	16		17
404	BRAUNAU AM INN							0	49	3	2	2	-	56		56
406	FREISTADT							0	7	-	1	-	-	8		8
407	GMUNDEN	-	-	-	-	2	-	2	1	1	-	-	-	2		4
408	GRIESKIRCHEN							0	1	-	-	-	-	1		1
411	PERG	-	1	-	-	-	-	1	17	2	2	-	-	21		22
412	RIED IM INNKREIS	-	1	-	-	-	-	1	11	-	-	-	-	11		12
414	SCHAERDING	-	1	-	-	-	-	1	2	-	-	-	-	2		3
417	VOECKLABRUCK	1	-	-	-	-	-	1	9	-	1	1	-	11		12
418	WELS-LAND							0	-	1	-	-	-	1		1
503	SALZBURG-LAND							0	3	3	-	1	-	7		7
602	BRUCK AN DER MUR	1	-	1	-	-	-	2	62	3	3	4	-	72		74
604	FELDBACH	1	-	-	-	-	-	1	41	1	-	-	-	42		43
606	GRAZ-LAND							0	1	-	-	1	-	2		2
607	HARTBERG							0	6	1	-	-	-	7		7
611	LEOBEN							0	2	-	1	-	-	3		3
612	LIEZEN							0	3	-	1	-	-	4		4
613	MUERZZUSCHLAG							0	4	1	1	3	-	9		9
615	RADKERSBURG							0	10	-	-	-	-	10		10
617	WEIZ							0	2	1	1	1	-	5		5
TOTAL		6	5	1	1	6	0	19	470	24	34	24	1	553	0	572
PER CENT		1.0	0.9	0.2	0.2	1.0	0.0	3.3	82.2	4.2	5.9	4.2	0.2	96.7	0.0	100.0

RABIES CASES 1. 4.90 - 30. 6.90

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															
LG	LIEGE	-	-	3	-	-	-	3	5	-	1	-	-	6		9
LX	LUXEMBOURG	-	2	5	-	-	-	7	5	1	1	-	-	7		14
NA	NAMUR							0	1	-	-	-	-	1		1
TOTAL		0	2	8	0	0	0	10	11	1	2	0	0	14	0	24
PER CENT		0.0	8.3	33.3	0.0	0.0	0.0	41.7	45.8	4.2	8.3	0.0	0.0	58.3	0.0	100.0
NET	NETHERLANDS															
02	FRIESLAND							0	-	-	-	-	3	3		3
03	GELDERLAND							0	-	-	-	-	1	1		1
TOTAL		0	0	0	0	0	0	0	0	0	0	0	4	4	0	4
NOR	NORWAY															
99	ISLAND OF SVALBARD							0	-	-	-	-	1	1		1
LUX	LUXEMBOURG															
02	CAPELLEN	-	1	-	-	-	-	1	2	-	-	-	-	2		3
03	ESCH							0	1	-	-	-	-	1		1
04	LUXEMBOURG-CAMPAGNE							0	1	-	-	-	-	1		1
05	MERSCH							0	-	-	-	-	1	1		1
06	CLERVAUX	-	-	1	-	-	-	1	3	-	-	-	-	3		4
07	DIEKIRCH	-	-	1	-	-	-	1						0		1
08	REDANGE	-	-	1	-	-	-	1						0		1
09	WILTZ							0	-	-	1	-	-	1		1
TOTAL		0	1	3	0	0	0	4	7	0	1	0	1	9	0	13
PER CENT		0.0	7.7	23.1	0.0	0.0	0.0	30.8	53.8	0.0	7.7	0.0	7.7	69.2	0.0	100.0

CZE CZECHOSLOVAKIA RABIES CASES **1/90** 1. 1.90 - 31. 3.90

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	4	-	-	-	-	4		4
01	CENTRAL BOHEMIA							0	20	-	-	-	-	20		20
02	SOUTH BOHEMIA							0	19	-	1	-	-	20		20
03	WEST BOHEMIA	-	2	-	-	4	-	6	60	1	2	-	-	63		69
04	NORTH BOHEMIA							0	47	-	-	-	1	48		48
05	EAST BOHEMIA	-	1	-	-	-	-	1	50	1	2	-	-	53		54
06	SOUTH MORAVIA							0	44	1	-	1	-	46		46
07	NORTH MORAVIA	1	1	-	-	-	-	2	39	2	1	-	-	42		44
0	CZECH SOCIALIST REPUBL	1	4	-	-	4	-	9	283	5	6	1	1	296		305
10	DISTRICT OF BRATISLAV	-	1	-	-	-	-	1	2	-	-	-	-	2		3
11	WEST SLOVAKIA	-	1	-	-	-	-	1	12	-	-	-	-	12		13
12	CENTRAL SLOVAKIA	1	-	-	-	-	-	1	29	-	-	-	-	29		30
13	EAST SLOVAKIA	4	2	-	-	-	-	6	22	-	1	1	-	24		30
1	SLOVAC SOCIALIST REPUB	5	4	-	-	-	-	9	65	-	1	1	-	67		76
TOTAL		6	8	0	0	4	0	18	348	5	7	2	1	363	0	381
PER CENT		1.6	2.1	0.0	0.0	1.0	0.0	4.7	91.3	1.3	1.8	0.5	0.3	95.3	0.0	100.0

CZE CZECHOSLOVAKIA — RABIES CASES — 2/90 — 1. 4.90 - 30. 6.90

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	2	-	-	-	-	2		2
01	CENTRAL BOHEMIA							0	18	-	-	-	-	18		18
02	SOUTH BOHEMIA							0	24	1	1	-	-	26		26
03	WEST BOHEMIA							0	48	-	2	-	-	50		50
04	NORTH BOHEMIA	-	1	-	-	-	-	1	48	1	3	-	-	52		53
05	EAST BOHEMIA	-	4	-	-	-	-	4	40	-	7	-	-	47		51
06	SOUTH MORAVIA	-	1	-	-	-	-	1	43	1	-	-	-	44		45
07	NORTH MORAVIA	-	3	-	-	-	1	4	40	-	1	1	-	42		46
0	CZECH SOCIALIST REPUBL	-	9	-	-	-	1	10	263	3	14	1	-	281		291
10	DISTRICT OF BRATISLAV	-	1	-	-	-	-	1	2	-	-	-	-	2		3
11	WEST SLOVAKIA	2	2	-	-	-	-	4	14	-	-	-	-	14		18
12	CENTRAL SLOVAKIA	5	3	-	-	-	-	8	12	-	-	-	-	12		20
13	EAST SLOVAKIA	2	-	-	-	-	-	2	11	-	-	-	-	11		13
1	SLOVAC SOCIALIST REPUB	9	6	-	-	-	-	15	39	-	-	-	-	39		54
TOTAL		9	15	0	0	0	1	25	302	3	14	1	0	320	0	345
PER CENT		2.6	4.3	0.0	0.0	0.0	0.3	7.2	87.5	0.9	4.1	0.3	0.0	92.8	0.0	100.0

DDR GERMAN DEMOCRATIC REPUBLIC — RABIES CASES — 1. 4.90 - 30. 6.90

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	ROSTOCK	-	1	2	-	-	-	3	19	-	1	-	-	20		23
02	SCHWERIN	16	4	2	-	2	-	24	28	1	2	-	-	31		55
03	NEUBRANDENBURG	1	-	3	-	-	-	4	14	1	1	-	-	16		20
04	POTSDAM	5	1	6	1	2	-	15	42	-	2	2	1	47		62
05	FRANKFURT	2	2	-	-	4	-	8	21	-	-	2	-	23		31
06	COTTBUS	3	3	1	-	1	-	8	32	1	1	-	-	34		42
07	MAGDEBURG	7	-	2	1	-	-	10	48	2	4	1	-	55		65
08	HALLE	5	3	-	-	-	-	8	26	-	1	-	-	27		35
09	ERFURT	3	5	-	-	3	-	11	21	-	1	1	-	23		34
10	GERA	-	1	-	-	-	-	1	9	-	1	1	-	11		12
11	SUHL	-	1	-	-	3	-	4	27	-	1	-	-	28		32
12	DRESDEN	2	2	-	-	9	-	13	21	2	1	3	-	27		40
13	LEIPZIG	11	6	2	-	7	-	26	69	1	3	5	-	78	1	105
14	CHEMNITZ	3	5	4	-	16	-	28	65	2	-	6	-	73		101
15	BERLIN, HAUPTSTADT							0	-	-	-	2	-	2		2
TOTAL		58	34	22	2	47	0	163	442	10	19	23	1	495	1	659
PER CENT		8.8	5.2	3.3	0.3	7.1	0.0	24.7	67.1	1.5	2.9	3.5	0.2	75.1	0.2	100.0

DEU FEDERAL REPUBLIC OF GERMANY — RABIES CASES — 1. 4.90 - 30. 6.90

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	-	2	-	4	6	-	-	-	-	6		10
032	HANNOVER	-	1	1	-	1	-	3						0		3
033	LUENEBURG	-	-	3	-	-	-	3	-	-	-	-	4	4		7
034	WESER-EMS							0	-	-	-	-	3	3		3
040	BREMEN							0						0		0
051	DUESSELDORF							0						0		0
053	KOELN							0	1	-	-	-	-	1		1
055	MUENSTER							0						0		0
057	DETMOLD							0	2	1	-	-	-	3		3
059	ARNSBERG							0						0		0
064	DARMSTADT	-	2	1	1	4	-	8	66	4	1	11	-	82		90
065	GIESSEN	-	1	-	1	-	-	2	12	2	-	-	-	14		16
066	KASSEL	-	2	3	-	1	-	6	28	-	1	5	-	34		40
071	KOBLENZ							0	1	-	-	-	-	1		1
072	TRIER							0	1	-	-	-	-	1		1
073	RHEINHESSEN-PFALZ	-	2	-	-	1	-	3	49	3	1	3	-	56		59
081	STUTTGART	-	2	-	-	-	-	2	33	6	5	7	-	51		53
082	KARLSRUHE	1	1	-	-	1	-	3	32	2	-	1	-	35		38
083	FREIBURG							0	1	-	-	1	-	2		2
084	TUEBINGEN	-	1	-	-	-	-	1	12	1	-	2	-	15		16
091	OBERBAYERN	-	-	1	-	-	-	1	11	-	-	-	-	11		12
092	NIEDERBAYERN							0						0		0
093	OBERPFALZ							0	3	1	-	-	-	4		4
094	OBERFRANKEN							0	8	-	-	1	-	9		9
095	MITTELFRANKEN							0	3	-	-	-	-	3		3
096	UNTERFRANKEN							0	8	-	-	-	-	8		8
097	SCHWABEN							0	18	-	-	-	-	18		18
100	SAARLAND	-	1	1	-	-	-	2	10	1	1	1	-	13		15
110	BERLIN (WEST)							0	7	-	-	-	-	7		7
TOTAL		1	13	12	2	10	0	38	312	21	9	32	7	381	0	419
PER CENT		0.2	3.1	2.9	0.5	2.4	0.0	9.1	74.5	5.0	2.1	7.6	1.7	90.9	0.0	100.0

FRA FRANCE — **RABIES CASES** — **1. 4.90 - 30. 6.90**

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	3	-	-	-	-	3		3
02	AISNE	-	2	-	-	2	-	4	36	1	-	-	-	37		41
03	ALLIER	-	-	2	-	1	-	3	7	1	1	-	-	9		12
08	ARDENNES	3	1	3	-	3	-	10	20	-	1	1	-	22		32
10	AUBE	-	1	-	-	-	-	1	22	1	-	-	-	23		24
21	COTE D'OR	-	1	2	-	3	-	6	13	-	-	-	-	13		19
25	DOUBS	1	1	-	-	6	-	8	59	2	2	-	-	63		71
27	EURE	-	2	-	-	-	-	2	10	-	-	-	-	10		12
39	JURA							0	35	2	-	-	-	37		37
40	LANDES	1	-	-	-	-	-	1						0		1
51	MARNE	-	1	-	1	3	-	5	23	-	-	1	-	24		29
52	MARNE (HAUTE)	-	3	-	-	1	-	4	5	-	-	-	-	5		9
54	MEURTHE ET MOSELLE	-	1	-	1	2	-	4	39	-	1	-	-	40		44
55	MEUSE	-	-	2	-	4	-	6	13	1	2	1	-	17		23
57	MOSELLE	-	1	-	1	8	-	10	18	1	1	-	-	20		30
58	NIEVRE	1	-	-	1	12	-	14	59	-	1	-	-	60		74
60	OISE	1	-	1	2	2	-	6	10	-	-	-	-	10		16
67	RHIN (BAS)	1	1	1	-	-	-	3	13	-	1	-	-	14		17
68	RHIN (HAUT)	2	-	-	-	1	-	3	9	-	-	-	-	9		12
70	SAONE (HAUTE)	-	-	-	1	3	-	4	18	1	-	-	-	19		23
71	SAONE ET LOIRE	-	-	5	-	2	-	7	26	-	-	-	-	26		33
76	SEINE MARITIME	-	2	2	-	2	-	6	33	-	-	-	-	33		39
77	SEINE ET MARNE							0	12	-	-	-	-	12		12
78	YVELINES							0	1	-	-	-	-	1		1
80	SOMME							0	24	1	-	-	-	25		25
88	VOSGES	1	3	1	1	8	-	14	18	1	1	-	-	20		34
89	YONNE	-	-	-	-	4	-	4	22	-	1	-	-	23		27
90	TERR.DE BELFORT							0	2	-	-	-	-	2		2
95	VAL D'OISE							0	13	-	-	-	-	13		13
TOTAL		11	20	19	8	67	0	125	563	12	12	3	0	590	0	715
PER CENT		1.5	2.8	2.7	1.1	9.4	0.0	17.5	78.7	1.7	1.7	0.4	0.0	82.5	0.0	100.0

HUN HUNGARY — RABIES CASES — 1. 4.90 - 30. 6.90

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		
02	BARANYA	-	2	1	-	-	-	3	7	-	-	-	-	7		10
03	BACS-KISKUN	1	-	2	-	-	-	3	9	-	-	-	-	9		12
04	BEKES	2	-	-	-	-	-	2	9	-	-	-	-	9		11
05	BORSOD-ABAUJ-ZEMPLEN	-	-	1	-	-	-	1	10	-	-	-	-	10		11
06	CSONGRAD	1	-	-	-	1	-	2	4	-	-	-	-	4		6
07	FEJER	-	2	-	-	-	-	2	4	-	-	-	-	4		6
08	GYOER-SOPRON							0	5	-	-	-	-	5		5
09	HAJDU-BIHAR	-	3	-	-	-	-	3	5	-	-	-	-	5		8
10	HEVES	-	-	1	-	-	-	1	3	-	-	-	-	3		4
11	KOMAROM							0	3	-	-	-	-	3		3
12	NOGRAD	1	-	1	-	-	-	2	3	-	-	-	-	3		5
13	PEST	2	1	-	-	-	-	3	5	-	-	-	1	6		9
14	SOMOGY	1	2	1	-	-	-	4	6	-	-	-	-	6		10
15	SZABOLCS-SZATMAR	-	1	-	-	-	-	1	1	-	-	-	-	1		2
16	SZOLNOK	2	1	-	-	-	-	3	3	-	-	-	-	3		6
17	TOLNA	-	1	-	-	-	-	1	11	-	-	-	-	11		12
18	VAS	-	-	4	-	-	-	4	15	-	1	-	-	16		20
19	VESZPREM							0	8	-	-	-	-	8		8
20	ZALA							0	5	-	-	-	-	5		5
TOTAL		10	13	11	0	1	0	35	116	0	1	0	1	118	0	153
PER CENT		6.5	8.5	7.2	0.0	0.7	0.0	22.9	75.8	0.0	0.7	0.0	0.7	77.1	0.0	100.0

RABIES CASES														1. 4.90 - 30. 6.90	
LOCATION	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN	TOTAL
CODE NAME	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL	CASES	
ROM ROMANIA															
01 ALBA	1	-	-	-	-	-	1	-	1	-	-	-	1		2
07 BOTOSANI	-	-	1	-	-	-	1						0		1
13 CLUJ	-	1	-	-	-	-	1						0		1
23 IALOMITA	-	1	-	-	-	-	1						0		1
25 MARAMURES	-	-	2	-	-	-	2						0		2
34 SUCEAVA	1	-	-	-	-	-	1						0		1
TOTAL	2	2	3	0	0	0	7	0	1	0	0	0	1	0	8
PER CENT	25.0	25.0	37.5	0.0	0.0	0.0	87.5	0.0	12.5	0.0	0.0	0.0	12.5	0.0	100.0
SPA SPAIN															
52 MELILLA NORTH AFRICA	1	-	-	-	-	-	1						0		1
SWI SWITZERLAND AND LIECHTENSTEIN															
01 AARGAU							0	1	-	-	-	-	1		1
05 BASEL-LAND							0	1	-	-	-	-	1		1
17 SOLOTHURN							0	1	-	-	-	-	1		1
26 JURA							0	2	-	-	-	-	2		2
TOTAL	0	0	0	0	0	0	0	5	0	0	0	0	5	0	5
YUG YUGOSLAVIA															
10 SR BOSNA I HERCEGOVIN							0	7	-	-	-	1	8		8
30 SR HRVATSKA	5	2	-	-	1	-	8	79	2	2	-	-	83		91
50 SR SLOVENIJA	1	4	-	-	-	-	5	43	-	-	-	-	43		48
61 SAP VOJVODINA	-	1	-	-	-	-	1	8	-	-	-	-	8		9
TOTAL	6	7	0	0	1	0	14	137	2	2	0	1	142	0	156
PER CENT	3.8	4.5	0.0	0.0	0.6	0.0	9.0	87.8	1.3	1.3	0.0	0.6	91.0	0.0	100.0

POL POLAND — RABIES CASES — 1. 4.90 - 30. 6.90

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							0	2	-	-	-	-	2		2
07	BIELSKO-BIALA	1	-	-	-	-	-	1						0		1
09	BYDGOSZCZ	1	-	1	-	-	-	2	16	-	-	2	-	18		20
11	CHELM							0	-	-	-	-	1	1		1
13	CIECHANOW							0	3	-	-	-	-	3		3
15	CZESTOCHOWA	-	2	-	-	-	-	2						0		2
19	GDANSK	1	1	1	-	-	-	3	8	1	-	-	2	11		14
21	GORZOW	2	2	-	-	-	-	4	5	-	-	-	3	8		12
23	JELENIA GORA	1	-	-	-	1	-	2	8	-	-	-	-	8		10
25	KALISZ	1	1	-	-	-	-	2	5	-	-	-	-	5		7
27	KATOWICE	-	1	-	-	-	-	1	3	-	2	-	-	5		6
31	KONIN							0	7	-	-	-	-	7		7
33	KOSZALIN	4	1	-	-	-	-	5	13	1	2	-	2	18		23
35	KRAKOW	-	1	-	-	-	-	1	-	1	-	-	-	1		2
37	KROSNO	1	-	-	-	-	-	1	1	-	-	-	-	1		2
39	LEGNICA							0	1	-	-	-	-	1		1
41	LESZNO							0	8	-	-	1	-	9		9
49	NOWY SACZ							0	1	-	-	-	-	1		1
51	OLSZTYN	1	1	2	-	-	-	4	4	-	-	-	2	6		10
53	OPOLE	-	2	-	-	-	2	4	23	-	1	-	-	24		28
57	PILA	1	-	-	-	-	-	1	10	-	-	-	4	14		15
59	PIOTRKOW TRYB							0	4	-	-	-	-	4		4
61	PLOCK							0	1	-	-	-	-	1		1
63	POZNAN	1	5	-	-	-	-	6	20	-	-	3	1	24		30
71	SIEDLCE	1	-	-	-	-	-	1	4	-	-	-	-	4		5
73	SIERADZ							0	-	2	-	-	-	2		2
77	SLUPSK	2	1	-	-	-	-	3	17	-	1	-	-	18		21
79	SUWALKI	-	1	1	-	-	-	2	-	-	1	-	1	2		4
81	SZCZECIN	2	2	-	-	-	-	4	19	-	-	1	6	26		30
87	TORUN	1	1	1	-	-	-	3	4	-	-	-	1	5		8
89	WALBRZYCH							0	7	-	-	-	-	7		7
91	WLOCLAWEK							0	2	-	-	-	1	3		3
93	WROCLAW	-	1	-	-	-	-	1	9	-	-	-	-	9		10
95	ZAMOSC							0	1	-	-	-	-	1		1
97	ZIELONA GORA	2	-	3	-	-	-	5	8	-	-	2	-	10		15
TOTAL		23	23	9	0	1	2	58	214	5	7	9	24	259	0	317
PER CENT		7.3	7.3	2.8	0.0	0.3	0.6	18.3	67.5	1.6	2.2	2.8	7.6	81.7	0.0	100.0

TUR TURKEY — **RABIES CASES** — **1. 4.90 - 30. 6.90**

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	2	-	-	-	-	-	2						0		2
006	ANKARA	2	1	-	-	1	-	4						0		4
007	ANTALYA	1	-	-	-	-	-	1						0		1
010	BALIKESIR	2	-	-	-	-	-	2						0		2
014	BOLU	1	-	-	-	-	-	1						0		1
015	BURDUR	-	1	-	-	-	-	1						0		1
016	BURSA	18	-	2	-	-	-	20						0		20
017	CANAKKALE	1	-	-	-	-	-	1						0		1
019	CORUM	1	-	-	-	-	-	1						0		1
020	DENIZLI	1	-	-	-	-	-	1						0		1
021	DIYARBAKIR	1	-	-	-	-	-	1						0		1
022	EDIRNE	1	-	-	-	-	-	1						0		1
023	ELAZIG	-	-	-	1	-	-	1						0		1
025	ERZURUM	2	-	-	-	-	-	2						0		2
027	GAZIANTEP	8	-	2	-	2	-	12						0		12
031	HATAY	3	-	-	-	-	-	3						0		3
032	ISPARTA	-	1	-	-	-	-	1						0		1
033	ICEL	3	-	-	-	-	-	3						0		3
034	ISTANBUL	25	-	4	-	1	-	30						0		30
035	IZMIR	12	1	6	-	-	-	19						0		19
038	KAYSERI	5	-	-	-	-	-	5						0		5
039	KIRKLARELI	1	-	-	-	-	-	1						0		1
040	KIRSEHIR	1	-	-	-	-	-	1						0		1
041	KOCAELI	7	-	1	-	-	-	8						0		8
042	KONYA	1	2	1	-	-	-	4						0		4
043	KUETAHYA	1	-	-	-	-	-	1						0		1
045	MANISA	4	-	1	-	-	-	5						0		5
047	MARDIN	2	-	-	-	-	-	2						0		2
050	NEVSEHIR	2	-	-	-	-	-	2						0		2
051	NIGDE	1	-	-	-	-	-	1						0		1
052	ORDU	2	-	-	-	-	-	2						0		2
054	SAKARYA	5	-	1	-	-	-	6						0		6
055	SAMSUN	4	-	2	-	-	-	6						0		6
057	SINOP	-	-	-	-	-	1	1						0		1
058	SIVAS	1	-	-	-	-	-	1						0		1
059	TEKIRDAG	1	-	-	-	-	-	1						0		1
066	YOZGAT	2	-	-	-	-	-	2						0		2
067	ZONGULDAK	7	1	1	-	-	-	9						0		9
TOTAL		131	7	21	1	4	1	165	0	0	0	0	0	0	0	165
PER CENT		79.4	4.2	12.7	0.6	2.4	0.6	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

SSR UNION OF SOVIET SOCIALIST REPUBLICS RABIES CASES 1/90 1. 1.90 - 31. 3.90															
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 RSFSR	59	30	212	9	108	1	419	106	-	-	-	9	115		534
02 MOLDAVIAN SSR	-	-	2	-	-	-	2	1	-	-	-	-	1		3
03 UKRAINIAN SSR	48	91	78	2	9	-	228	155	-	-	-	5	160		388
04 BYELORUSSIAN SSR	4	6	2	-	-	-	12	17	-	-	-	4	21		33
05 LITHUANIAN SSR	8	4	6	-	-	-	18	-	-	-	-	13	13		31
06 LATVIAN SSR	12	6	2	-	-	-	20	35	-	-	-	22	57		77
07 ESTONIAN SSR	8	6	1	-	-	-	15	24	-	-	-	14	38		53
TOTAL	139	143	303	11	117	1	714	338	0	0	0	67	405	0	1119
PER CENT	12.4	12.8	27.1	1.0	10.5	0.1	63.8	30.2	0.0	0.0	0.0	6.0	36.2	0.0	100.0

SSR UNION OF SOVIET SOCIALIST REPUBLICS RABIES CASES 2/90 1. 4.90 - 30. 6.90															
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 RSFSR	42	18	86	7	165	1	319	43	-	-	-	-	43		362
02 MOLDAVIAN SSR							0	1	-	-	-	-	1		1
03 UKRAINIAN SSR	28	50	74	1	7	-	160	34	-	-	-	-	34		194
04 BYELORUSSIAN SSR	9	4	1	-	-	-	14	23	-	-	-	-	23		37
05 LITHUANIAN SSR	4	3	5	-	-	-	12	2	-	-	-	-	2		14
06 LATVIAN SSR	11	4	5	-	2	-	22	57	-	-	-	-	57		79
07 ESTONIAN SSR	7	2	1	-	-	-	10	26	-	-	-	-	26		36
TOTAL	101	81	172	8	174	1	537	186	0	0	0	0	186	0	723
PER CENT	14.0	11.2	23.8	1.1	24.1	0.1	74.3	25.7	0.0	0.0	0.0	0.0	25.7	0.0	100.0

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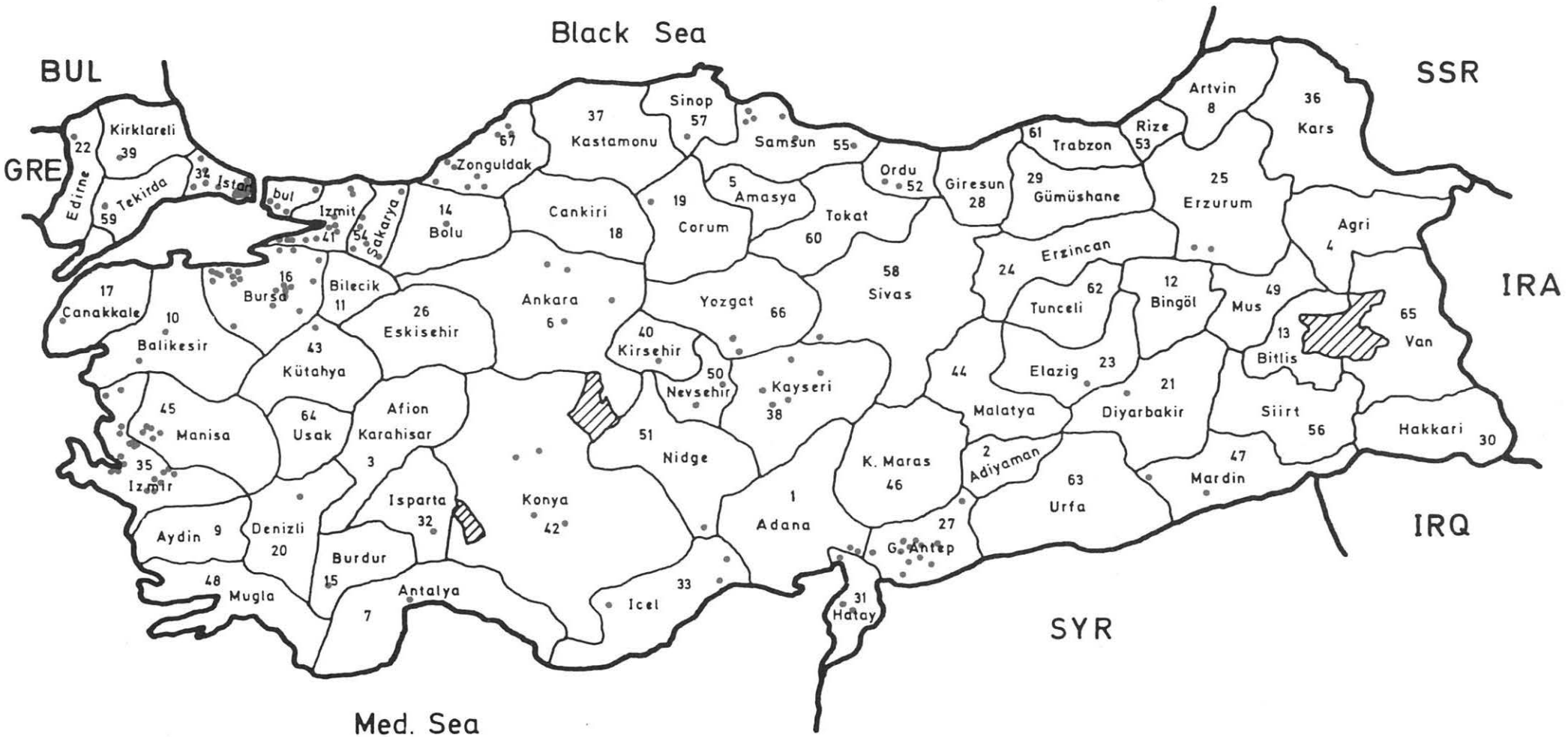
Tuebingen / DEU

Rabies Cases Turkey
2nd Quarter 1990
165 cases reported



WHO Coll. Centre
Tuebingen / DEU

Rabies Cases Europe
2nd Quarter 1990
4280 cases reported
11 bat rabies cases included

ICE
(rabies free)

(1)
NOR
(Island of Svalbard)

FIN
(0)

SWE
(rabies free)

DEN

IRE
(rabies free)

UNK
(rabies free)

NET
(4)

(659)
DDR

POL
(317)

SSR
(723)

(412)
DEU
(7)

BEL
(24)

(345)
CZE

(715)
FRA

(572)
AUT

HUN (153)

(5)
SWI

ROM
(8)

ITA
(0)

YUG
(156)

BUL
(rabies free)

POR
(rabies free)

SPA
(1)
(North Africa)

ALB
(no data)

(165) TUR

GRE
(rabies free)

0 50 100 km

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