RABIES BULLETIN EUROPE - VOL. 12/No 2/1988

C O N T E N T S

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1. INTRODUCTION

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

In the miscellaenous section under 3.1, an imported human rabies case in Australia is reported. Under 3.2 two WHO coordinated research programmes on dog ecology and oral immunisation of dogs against rabies in relation to dog rabies control is described.

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

The last part lists the official contributors to the BULLETIN.

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

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

During the second quarter 1988, 2968 cases of rabies were reported in Europe. These were 2424 cases in wild animals (81.7%) and 544 cases in domestic animals (18.3%). Of the cases in wild animals 2166 (73% of total) were foxes, 79 badgers, 63 other mustelids, 73 deer, 22 raccoon dogs, 3 wild cats, 3 wild boars, 1 chamois, 11 bats, 1 squirrel and 2 black rats. Of the 544 domestic animals 241 were dogs (of which 179 [74.3% of all dogs] were reported from Turkey, a country with dog-mediated rabies), 112 cats, 81 cattle, 19 horses, 85 small ruminants and 6 other domesticated animals. These data are summarized in Table 1.

The figures in Table 2 show accumulated totals of the first two quarters 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, United Kingdom, Ireland, Iceland, the mainland of Norway, Portugal and Sweden. There were no cases reported from Denmark, Greece, Italy, Svalbard (Norway) and Spain, but their last indigenously acquired case was recorded less than two years ago.

Finland recorded rabies after having been free for 29 years.

Bat rabies was reported from the Netherlands (10 cases) and the Federal Republic of Germany (1 case).

No human case was reported.

This quarter's total, of 2968 cases, was the lowest since the reporting started to the WHO Reference Centre, Tübingen, in 1977.

Individual country reports follow:

2.1 Rabies in Austria (AUT)

by H. Schnabl

During the second quarter 1988, of 4436 samples received, 457 were diagnosed rabid. Compared to the first quarter 1988 (681 cases) a decrease of 32.9% was registered.

Of 444 rabid wild animals (97.2% of total) 386 were foxes (84.5%), 28 badgers (6.1%), 3 martens, 3 polecats, 23 roe deer (5%) and one chamois. Of 13 rabid domestic animals (2.8% of total) 1 was a bovine, 1 a dog, 1 a pig, 3 were cats and 17 were sheep.

The distribution of rabies cases in the federal provinces (underlined) were as follows:

Burgenland	- Güssing and Oberpullendorf (9 cases = 2% of total)
Carinthia	- except Hermagor (88 = 19.3%)
Lower Austria	- Gmünd and Zwettl (3 = 0.7 %)
Upper Austria	- the districts of Freistadt, Gmunden, Vöcklabruck and Wels (43 = 9.4%)
Salzburg	- except Salzburg-Stadt (51 = 11.2%)
Styria	- except Fürstenfeld and Hartberg (243 = 53.2%)
Tyrol	- Lienz and Reutte
Vienna and Vorarlberg	- rabies-free.

2.2 Rabies in Belgium (BEL)

by J. Tambeur

66 rabies cases were confirmed in 36 localities of the provinces Liège, Limbourg, Luxembourg and Namur during the second quarter 1988. Of these were 14 cases in domestic animals (1 dog, 3 cattle, 1 horse, 9 small ruminants) and 52 cases in wild animals (51 foxes and 1 badger).

There was an increase of cases compared to the first quarter 1988 by 50%, and an increase by 43% compared to the same quarter 1987. Regarding the latter the increase for the fox amounted to 143%.

The areas mainly affected were: the east of the province of Liège, the centre of the province of Luxembourg and the centre of the province of Namur where rabies has crossed the river Meuse.

The oral vaccination of foxes in autumn will comprise 9500 km², and will take place in the part of the country situated south of the river Meuse and in one part between the rivers Sambre and Meuse.

2.3 Bulgaria (BUL)

The country remained rabies-free.

2.4 Rabies in Czechoslovakia (CZE)

by M. Olach and J. Neumann

During the second quarter 1988, 349 cases of rabies were recorded (296 in the Czech Socialist Republic and 53 in the Slovac Socialist Republic respectively). Compared to the first quarter 1988 the number of cases decreased by 106 (23.3%). In comparison with the same period of the last year (504 cases) there was a 30.7% decrease.

328 cases occurred in wild animals (94%). Of these 311 were foxes, 4 badgers, 9 martens, 2 stags, 1 roe deer and 1 wild cat. Of the domestic animals rabies was diagnosed in 6 dogs, 14 cats and one pig. Domestic animals represented 6 % of the total number of cases. The disease penetrated the district of Nymburk, which was rabies-free until now.

The highest number of cases was registered in the region of North Bohemia (99 cases), West Bohemia (68) and Central Bohemia (54).

In regard to districts, rabies was recorded most in Chomutov (24), Pribram (19), Karlovy Vary and Litomerice (17 each). From 30 June 1988 onward rabies is registered by taking into account that the whole territory of the Czechoslovak Socialist Republic is divided into 335 administrative units of 73 districts.

There was no case of rabies reported in man.

2.5 Rabies in Germany, Democratic Republic (DDR)

During the second quarter 1988, 382 cases of rabies were registered in the German Democratic Republic, 92 cases less than during the first quarter 1988 and 8 more than during the second quarter 1987 (374). Of the 382 cases were 317 (83%) in wild animals - 276 foxes, 11 badgers, 17 stone martens, 1 polecat, and 12 roe deer, and 65 (17%) in domestic animals - 21 dogs, 21 cats, 11 cattle and 12 sheep.

Concentration of cases was noticed in the southern districts (Bezirke) of the country-Dresden (53 cases), Karl-Marx-Stadt (41), Erfurt (42), and in the northern part-Rostock (46), Schwerin (36). All other districts reported less than 30 cases.

2.6 Rabies in Denmark (DEN)

by E. Stougaard

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

2.7 Rabies in Germany, Federal Republic (DEU)

A total of 438 rabies cases were reported during the second quarter 1988. Of these, 372 cases were in wild animals (319 foxes, 16 badgers, 11 martens, 23 roe deer, 1 fallow deer, 1 wild boar and 1 bat) and 66 in domestic animals (7 dogs, 18 cats, 5 horses, 15 cattle, 17 sheep and 4 goats). There was a reduction of cases compared to the previous quarter (737 cases) and to the same quarter of 1987 (856 cases). In fact, it was the quarter with the lowest number of cases reported since the European surveillance started in 1977.

In comparison with the second quarter 1987 there were drastic reductions noticed in the states (Bundesländer) of Nordrhein-Westfalen (from 120 to 17 cases), Rheinland-Pfalz (97 to 37 cases), Baden-Württemberg (177 to 100 cases) and Bavaria (315 to 113 cases). An increase was noticed in Hessen (105 to 113 cases) Lower Saxony (31 to 39 cases) and Saarland (9 to 18 cases).

Oral vaccination of foxes has been practiced in all states (Bundesländer), except for the city-states Bremen, Hamburg and Berlin, depending on financial resources which can be put aside for the field trial.

2.8 Rabies in Finland (FIN)

by S. Reinius

Having been absent from Finland since 1959 rabies has reappeared in animals and was diagnosed anew on April 8, 1988.

During the second quarter 1988, there were 494 animals examined for rabies. 19 (3.8%) of these were found positive: 13 raccoon dogs, 3 foxes, 1 badger, 1 dog and 1 cat. All cases have occurred in an area within 30 km from the city of Kouvola in south-eastern Finland, ca. 50 km from the coast of the gulf of Finland and ca. 100 km from the Finnish-Soviet border.

The diagnosis was made by the fluorescence antibody test, inoculation into mice and histology. An identification of the virus by monoclonal antibodies was carried out at the WHO Reference Centre for Rabies Surveillance and Research, Tübingen, and strongly indicates that the virus is of polar type.

The main control measures are:

- Compulsory vaccination of dogs around the positive cases in the initial phase;
- Mass vaccination of dogs and cats on a voluntary basis at the expense of the owner in the whole country;
- Vaccination of horses and cattle which are kept on pasture within 50 km from the positive cases on a voluntary basis at the expense of the owner;
- Prohibition to use unvaccinated dogs for hunting;
- Increased reduction of raccoon dog, fox and badger population by trapping and culling in the affected area as well as in other parts of the country.

The vaccinations are performed only by authorized veterinarians.

Because, apparently, raccoon dogs and foxes are the principal vectors of rabies in Finland a field trial on oral vaccination of foxes and raccoon dogs will be started in autumn 1988 in an area of ca. 2000 km² around the positive rabies cases. The estimated raccoon dog density in the affected area is 0.2/km² (summer) and the estimated fox density 0.1/km² (winter) - 0.3/km² (summer).

As a consequence of the changed rabies situation the import conditions for dogs and cats were revised in June, 1988. Quarantine is no longer required. The animals entering the country must be vaccinated against rabies not longer than one year ago and not less than 30 days prior to importation.

2.9 Rabies in France (FRA)

by J. Blancou

408 rabies cases were registered during the second quarter 1988, 151 cases less than during the previous quarter. Of these 339 cases were diagnosed in the fox (83.1% of total), 15 in other wild animals, and 54 in domestic animals (1 dog, 15 cats, 7 cattle, 24 small ruminants, 6 horses and 1 donkey).

The départements (departments) mostly affected during this quarter were Cote d'or with 58 and Doubs with 52 cases.

In the zones where oral vaccination of foxes against rabies was carried out (Moselle-900 km², Meurthe et Moselle-320 km², Doubs-125 km²) the complete disappearence of the disease remained during this quarter.

2.10 Rabies in Greece (GRE)

by A. Saravanos

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

2.11 United Kingdom (GBR)

by M.J. Marriott

The country remained rabies-free.

Surveillance

During first and second quarters 1988, there were 9 incidents of suspected rabies cases outside quarantine, involving 3 cats, 2 dogs, 2 foxes, 1 mouse and 1 cow. Laboratory examination was carried out on 6 occasions. One case was excluded on post-mortem, one on clinical examination, and one after 7 days observation in isolation premises. During the above mentioned period laboratory examinations were carried out on the brains of 56 animals which had died in authorised quarantine premises, and all results were negative.

From January to June 1988 150 bats were also examined for rabies and found negative:

P. pipistrellus	97	N. noctula	4
Plecotus auritus	21	N. leisleri	1
E. serotinus	9	M. daubentoni	2
R. ferrumequinum	1	M. mystacinus	7
Unidentified	7	M. nattereri	1

2.12 Rabies in Hungary (HUN)

by L. Koltai

During the second quarter 1988, 157 rabies cases were registered in Hungary. In comparison with the same period 1987 (276 cases) there was a decrease by 43.1%. The decrease affected especially the fox, as can be seen by figure (2/87-225; 2/88-106) and by percentage of the animal species involved in the disease (2/87-81.5% of total; 2/88-67.5%). Cases in domestic animals have increased (2/87-43 = 15.6% of total; 2/88-47=30%), and here especially in cats (2/87-13 = 4.7%; 2/88-22 = 14%).

A concentration of cases was recorded in the south-western part of the country. Four provinces (Komitats) account for 45.9% of the total cases: Baranya (20), Somogy (21), Zala (18) and Tolna (13). All other provinces reported less than 10 cases.

2.13 Iceland (ISL)

The country remained rabies-free.

2.14 Ireland (IRE)

The country remained rabies-free.

2.15 Rabies in Italy (ITA)

by S. Prosperi

During the second quarter 1988, no case of rabies was registered in Italy.

A strict surveillance was carried out in zones of risk in the Alpine regions.

2.16 Rabies in Luxembourg (LUX)

by R. Frisch

In connection with the oral immunisation of foxes against rabies, carried out during 1986 to 1988, the present rabies situation in the Grand Duchy of Luxembourg has very much improved. Only one case in a marten has been registered during the second quarter 1988 in the north of the country near the Luxembourg/Belgium/German border. This favourable situation will be

once more supported as an other vaccination campaign covering the whole country is planned on the 17th and 18th September 1988.

The following animals have been examined for rabies in Luxembourg during the second quarter 1988 but reveiled negative results: 16 foxes, 6 martens, 1 wild boar and 1 squirrel.

2.17 Rabies in the Netherlands (NET)

by J.H.M. Nieuwenhuijs

During the second quarter of this year, 10 bats, 5 adult red foxes, one badger and one cow have been found rabid.

The bat rabies cases were located in the northern provinces Friesland, Drenthe, Overijssel and Noord-Holland.

The rabid foxes, the rabid badger and the rabid cow were registered in an area of just a few kilometres within the southern part of Limburg.

Most probably the cow and the badger became rabid as a result of a confrontation with one of the rabid foxes found in that specific area.

As a result of the diagnosed rabies cases in the area, the number of animals sent in for investigation has increased. The number of foxes (adult and young) sent in during the second quarter (304) is almost as high as the total number of foxes (311) investigated in 1987.

The number of investigated bats during this quarter (132) does not differ much from the number investigated in the second quarter of the previous year (101).

2.18 Rabies in Norway (NOR)

by H.O. Bach-Gansmo

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

The mainland remained rabies-free.

2.19 Rabies in Poland (POL)

A total of 231 cases of rabies was reported in Poland during the second quarter 1988. In comparison with the same quarter 1987 (345 cases) there was a decrease of cases by 33%.

204 cases (88.3% of total) were registered in wild animals (172 foxes, 9 raccoon dogs, 1 badger, 7 pine martens, 3 polecats, 1 ferret, 6 roe deer, 1 moose, 2 wild boar, 1 squirrel, 1 black rat) and 27 in domestic animals (11 dogs, 12 cats, 4 cattle).

Ten provinces reported between 10 and 14 cases, all others less than 10 and 10 provinces were rabies-free during the said period.

2.20 Portugal (POR)

The country remained rabies-free.

2.21 Rabies in Romania (ROM)

5 cases were reported during the second quarter 1988 in Romania: 4 foxes and 1 horse. They were located in 4 provinces: Bacan, Buzem, Sake-Mare and Salaj.

During the same quarter 1987, 10 rabies cases were reported.

2.22 Rabies in Spain (SPA)

by J. Nombela

No case of rabies was reported from Spain.

Surveillance

As a result of two bats diagnosed rabies positive in Valencia and Granada during the third quarter 1987 (see BULLETIN 3/87), several bats were examined for rabies but reveiled negative results:

From 29.9.1987 to 11.12.1987 in Andalusia (Granada, Sevilla, Huelva, Córdoba) -

Pipistrellus pipistrellus	12	Plecotus austriacus	1
Pipistrellus kuhlii	3	Tadarida tneiotis	3
Eptesicus serotinus	2	Miniopterus schreibersi	5
Rhinolophus ferroequinum	5	Myotis Myotis	6
Rhinolophus hipposideros	14	T o t a l	51

In September/November 1987 in Valencia -

Pipistrellus spp.	33	Myotis sp.	1
Sin sp	1	T o t a l	35

2.23 Sweden (SWE)

The country remained rabies-free.

2.24 Rabies in Switzerland (SWI)

by A.I. Wandeler

During the second quarter of 1988, the Swiss Rabies Diagnostic Center received 374 animals for examination. 11 (3%) of these were positive for rabies compared to 40 (7% of 552) in the previous quarter and 26 (6% of 441) in the second quarter of 1987. 6 were observed in foxes, 1 in a badger, 2 in sheep, 1 in a cat and 1 in a dog that had been imported from Zaire only about 2 months before it died.

Two rabid foxes originated from a side valley in lower canton Valais. Two animals were registered in the canton of Geneva, in an area not yet protected by oral fox vaccination. The rest of the cases - including the dog

from Zaire - were observed in the canton of Vaud. With the exception of a badger all came from areas that have been vaccinated for the first time this spring. All rabies cases were relatively close to the Swiss-French border.

A single human bite exposure to a proven rabid cat was recorded in the second quarter of 1987. The number of people treated for non-bite exposures is not known.

The following 28 bats were examined for rabies during the first and second quarters 1988 and reveiled negative results: 9 Pipistrellus pipistrellus, 6 Pipistrellus nathusii, 2 Plecotus auritus, 2 Nyctalus leisleri, 1 Pipistrellus savii, 1 Myotis mystacinus, 1 Eptesicus serotinus, 2 Nyctalus noctula, 4 Myotis myotis.

2.25 Rabies in Turkey (TUR)

During the second quarter 1988, 220 rabies cases were registered in Turkey, 13 cases more than during the previous quarter and 22 cases less than during the same period last year.

All animals affected were domestic animals: 179 dogs (81.4% of total), 1 cat, 5 horses, 1 donkey, 1 mule, 26 cattle and 7 sheep.

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

2.26 Rabies in Yugoslavia (YUG)

207 cases of rabies were reported in Yugoslavia during the second quarter 1988, 140 cases less than the previous quarter and 94 cases more than during the same period last year.

Of the 207 cases were 188 (90.8%) in foxes, 7 in badgers and 3 in roe deer. There were of 9 domestic animals 3 cases in dogs, 4 in cats, one in a horse and one in an other domesticated animal.

Most of the cases were registered in Slovenia and at the Slovenian/Croatian border. Scattered cases occurred in the other parts of Croatia, Bosnia and Hercegovina, Wojwodina and Serbia. Two isolated cases, 2 foxes, were diagnosed positive near the state border with Romania (ROM).

ADDENDUM

2.15 Rabies in Italy (ITA)

In a recent report from Italy, one rabies case was diagnosed in a fox at the Italian/Yugoslavian border on 20 August 1988. The country was rabies-free for two years. -

This information is presented here for topical reasons.

3. MISCELLANEOUS

3.1 Imported Human Rabies - Australia, 1987

In November 1987 the illness of a 10-year-old Australian boy who had died of acute encephalitis 4 months earlier was confirmed as being rabies. This is the first laboratory-confirmed case of human or animal rabies ever reported from Australia.

The child had traveled with his mother to India, Pakistan, Nepal, Singapore, and Thailand between February and October of 1986, but no animal bites were reported during this period. He remained well until June 23, 1987, when headache developed, followed by fever, vomiting, and chills. During the next few days, he became anorexic, had a few episodes of delirium at night, and had pain in his right arm. Eight days after the onset of illness, incoordination and diplopia developed, along with a progressive weakness in his legs. When admitted to a local hospital, the patient had palsies of the sixth cranial nerve on the right side and of the seventh cranial nerve bilaterally. Analysis of a cerebrospinal fluid specimen showed normal cell counts and normal protein and glucose levels. A diagnosis of atypical Guillain-Barré syndrome versus encephalitis was made, and on the 10th day of illness the patient was transferred to a regional medical center. At that time, he was unable to walk, and his reflexes were decreased on the right side. An electroencephalogram showed slow wave activity consistent with a diffuse encephalitis, and a computerized axial tomography scan was normal. A repeated lumbar puncture on the 12th day of illness showed 50 white blood cells/mm^3, 18 red blood cells/mm^3, elevated glucose, and normal protein levels. The patient was temporarily intubated because of irregular respiration. On the 14th day of illness, inappropriate antidiuretic hormone secretion, upper airway obstruction and pneumonia developed and the left lung collapsed. Seizures began 2 days later. The patient became comatose on the 19th day of illness, and he died 4 days later.

Hospital pathologists found eiosinophilic intracytoplasmic inclusions, suggestive of Negri bodies, on fixed sections of brain tissue. A serum sample taken on the 21st day of illness had a rabies neutralizing antibody titer of 1,400 when analyzed at a reference laboratory 4 months later. No specimens were available for virus isolation.

In December, extensive interviews with relatives, friends, and other contacts of the patient revealed that the patient, an animal lover, had been injured by two animals in the 2 years before his death. He was severely scratched by a neighbor's dog 2 months before his onset of illness, but the dog remained healthy and did not have rabies antibodies when tested in December 1987. However, according to a travel companion, the patient was bitten on a finger by wild monkey at a marketplace in northern India 16 months before the onset of illness. This incident was not reported to the boy's mother. A photograph of the patient feeding the monkeys at this marketplace was found in a school project he had prepared.

Rabies postexposure prophylaxis was recommended for nine health-care workers and four family members and friends who may have been exposed to the patient's saliva or nerve tissue during his illness.

MMWR's Editorial Note:

All available data indicate that this was an imported case of rabies. The only previous report of animal or human rabies in Australia is poorly documented, but, in 1867, a child and a dog from Tasmania had suspected rabies. Both animal and human rabies have been reported from all the countries in which the patient traveled except Singapore. (Nepal did not contribute to that survey). The monkey bite in northern India 16 months before the onset of illness must be considered the probable exposure, but the patient might have received other unreported bites while traveling in Asia. If the patient was exposed in Asia, the incubation period would have been between 8 and 16 months. In one large study of human rabies, approximately 1% of cases had incubation periods of over 1 year. Cases of monkey-transmitted human rabies are rare; however, one extremely long incubation period (37.5 months) was reported.

In the Australian boy's case, paralysis dominated the clinical picture. The clinical picture and the prolonged course before the onset of coma are consistent with the paralytic form of rabies, which occurs in approximately 20% of cases.

Since Australia is considered a rabies-free country, animal rabies vaccination is not required and animals that bite pople are not quarantined. If animal rabies should become endemic in Australia, an estimated 38,000 people per year might have to receive postexposure prophylaxis. In addition, millions of dollars would have to be spent on animal rabies vaccination and quarantine. Wild animals that might become reservoirs if rabies should be introduced into Australia include the dingo (a wild dog), red fox, feral cat, and bat. A limited serosurvey of bats in Queensland for rabies antibodies is in progress.

This report emphasizes the importance of rabies pre-exposure prophylaxis for travelers visiting rabies-endemic countries for more than 30 days, especially children who are likely to have unrecognized or unreported exposures. Preexposure prophylaxis can be administered intramuscularly or intradermally; however, the intradermal regimen should be completed at least 30 days before departure and should not be used if the person is taking chloroquine for malaria chemoprophylaxis.

The report cites seven references.

(TAKEN FROM MORBIDITY AND MORTALITY WEEKLY REPORT (MMWR), June 10, 1988, VOL.37/NO. 22, CENTERS FOR DISEASE CONTROL, ATLANTA, GA 30333, U.S.A.)

3.2 Dog Rabies Control

Dog rabies is still recorded in a great many countries and accounts for more than 99% of all human rabies cases recorded and for over 90% of all human post-exposure treatments. The severity of the disease and the resulting economic burden are of such magnitude that elimination of the disease in dogs has become imperative. New concepts in both vaccination and stray-dog control policies derived from research in 3 countries (Ecuador, Sri Lanka and Tunisia) could have a major impact on rabies control. Two WHO research programmes for rabies control, studies on dog ecology and the use of oral rabies vaccine in dogs, were discussed at meetings held from 22 to 26 February 1988 in WHO headquarters, Geneva. The information provided in the

reports of the meetings (WHO/Rab.Res./88.25;WHO/Rab.Res./88.26) encourages national authorities and communities to reassess dog-rabies control strategies in use and to initiate dog-ecology studies, either as part of ongoing control activities or prior to their implementation, in order to increase the effectiveness of programmes for the elimination of dog rabies. A brief extract of the 2 reports follows.

Three findings from these studies have direct implications for dog-rabies control: (**a**) about 15% of the dog population is not accessible for immunization, (**b**) dog-removal programmes are ineffective and costly, and (**c**) vaccination rates of up to 80% can be attained if the community participates in the planning and implementation of dog-rabies control campaigns.

Dog ecology

A rabies control programme should rely on some basic data on human and dog populations and their relationship. An assessment of the community's educational and motivational needs in relation to rabies control programmes is also recommended. Information on the human population should include its size, settlement patterns and density, social structure, religious affiliations and organization. As regards the dog population, data on the size, sex ratio, age structure and turnover are required. Data on the relationship between people and dogs should include the relative dependence of dogs on intentional human provision of essential needs, on the restriction of dogs by people, and on their accessibility to control programme personnel.

Data should be collected through appropriate surveys. For example, the social and ecological factors most influential on the size and structure of dog populations and the relationship to humans should be assessed in an initial, qualitative survey. The most significant parameters emerging in this survey would then be quantified and assessed by a questionnaire survey and direct observation/capture-recapture techniques.

Categorization of dogs

Comparative studies of dog ecology in different countries have been hampered by the lack of distinct nomenclature and clear definitions for dogs living in a variety of relationships with their human host population. The consultation proposed a categorization based on 2 parameters: (**a**) level of dependence and (**b**) the level of restriction. **D e p e n d e n c e** describes a dog-to-man bond based on intentional provision of food, physical shelter, care and any other action to meet the prerequisites for the survival, propagation and well-being of the dog. **R e s t r i c t i o n s** can be any physical or biological constraint intentionally imposed on a dog. This refers not only to movement restriction and confinement in a human's premises but to its supervision outside these premises. A matrix based on the 2 parameters defines first the restricted dog (fully dependent and restricted), then with decreasing levels of dependency and restriction the family dog, neighbourhood dog, unrestricted dog and eventually the feral dog (unrestricted and independent). The term **s t r a y** should only be used to define a dog not in compliance with regulatory requirements (i.e. confinement, leashing, etc).

Oral rabies immunization of dogs

One obstacle to dog rabies control is the significant proportion (15%) of the dog population which cannot be reached at any given time by conventional immunization programmes (i.e. parenteral administration of the vaccine). In such situations, inadequate immunization coverage usually leads to a decreased disease incidence but not to the elimination of the disease. Application of oral vaccine through baits may offer new strategies and

approaches permitting a significant increase in the immunization coverage, both when applied exclusively and in combination with vaccine by injection.

Limited studies have shown the immunogenicity, safety and protection rate of 3 oral vaccines and the efficacy of different oral baits for administration of the vaccine. However, further research is required on the appropriateness of the levels of attenuation for the target and non-target animal species of the candidate vaccine strains as well as on the level of the immune response and duration of antibody titres in dogs. Vaccine production, titres and stability need to be improved and potency requirements defined. Safety precautions and educational requirements related to the distribution of the baits also need to be established.

(TAKEN FROM WEEKLY EPIDEMIOLOGICAL RECORD 63, No. 34, 257-258, 1988, WHO GENEVA).

TABLE 1

EUR EUROPE 2/88 RABIES CASES 1. 4.88 - 30. 6.88

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		
AUT	AUSTRIA	1	3	1	-	7	1	13	386	28	6	23	1	444		457
BEL	BELGIUM	1	-	3	1	9	-	14	51	1	-	-	-	52		66
BUL	BULGARIA *							0						0		0
CZE	CZECHOSLOVAKIA	6	14	-	-	-	1	21	311	4	9	3	1	328		349
DDR	GERMAN DEM. REPUBLIC	21	21	11	-	12	-	65	276	11	18	12	-	317		382
DEN	DENMARK *							0						0		0
DEU	FED.REP. OF GERMANY	7	18	15	5	21	-	66	319	16	11	24	2	372		438
FIN	FINLAND	1	1	-	-	-	-	2	3	1	-	-	13	17		19
FRA	FRANCE	1	15	7	6	24	1	54	339	8	6	-	1	354		408
GBR	UNITED KINGDOM *							0						0		0
GRE	GREECE *							0						0		0
HUN	HUNGARY	9	22	13	-	3	-	47	106	-	1	1	2	110		157
IRE	IRELAND *							0						0		0
ISL	ICELAND *							0						0		0
ITA	ITALY *							0						0		0
LUX	LUXEMBOURG							0	-	-	1	-	-	1		1
NET	NETHERLANDS	-	-	1	-	-	-	1	5	1	-	-	10	16		17
NOR	NORWAY *							0						0		0
POL	POLAND	11	12	4	-	-	-	27	172	1	11	7	13	204		231
POR	PORTUGAL *							0						0		0
ROM	ROMANIA	-	-	-	1	-	-	1	4	-	-	-	-	4		5
SPA	SPAIN *							0						0		0
SWE	SWEDEN *							0						0		0
SWI	SWITZERLAND + LIE 1)	1	1	-	-	2	-	4	6	1	-	-	-	7		11
TUR	TURKEY	179	1	26	5	7	2	220						0		220
YUG	YUGOSLAVIA	3	4	-	1	-	1	9	188	7	-	3	-	198		207
TOTAL		241	112	81	19	85	6	544	2166	79	63	73	43	2424	0	2968
PER CENT		8.1	3.8	2.7	0.6	2.9	0.2	18.3	73.0	2.7	2.1	2.5	1.4	81.7	0.0	100.0

* NO CASES. 1) 1 DOG IMPORTED FROM ZAIRE.

TABLE 2

EUR EUROPE 1-2/88 RABIES CASES 1. 1.88 - 30. 6.88

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		
AUT	AUSTRIA	4	7	7	-	9	1	28	996	49	18	46	1	1110		1138
BEL	BELGIUM	2	2	10	1	14	-	29	80	1	-	-	-	81		110
BUL	BULGARIA *							0						0		0
CZE	CZECHOSLOVAKIA	16	34	-	-	-	1	51	714	7	17	12	3	753		804
DDR	GERMAN DEM. REPUBLIC	36	54	18	3	26	-	137	642	16	29	31	1	719		856
DEN	DENMARK *							0						0		0
DEU	FED.REP. OF GERMANY	15	35	30	11	48	-	139	917	38	23	56	2	1036		1175
FIN	FINLAND	1	1	-	-	-	-	2	3	1	-	-	13	17		19
FRA	FRANCE	6	33	24	8	43	1	115	821	12	12	5	2	852		967
GBR	UNITED KINGDOM *							0						0		0
GRE	GREECE *							0						0		0
HUN	HUNGARY	20	42	23	-	12	1	98	462	1	2	3	2	470		568
IRE	IRELAND *							0						0		0
ISL	ICELAND *							0						0		0
ITA	ITALY *							0						0		0
LUX	LUXEMBOURG	-	-	-	1	-	-	1	-	1	1	-	-	2		3
NET	NETHERLANDS	-	-	1	-	-	-	1	5	1	-	-	10	16		17
NOR	NORWAY *							0						0		0
POL	POLAND	28	39	15	-	3	-	85	479	5	23	29	34	570		655
POR	PORTUGAL *							0						0		0
ROM	ROMANIA	2	-	3	1	-	-	6	9	1	-	-	-	10		16
SPA	SPAIN	2	-	-	-	-	-	2						0		2
SWE	SWEDEN *							0						0		0
SWI	SWITZERLAND + LIE 1)	1	2	-	-	3	-	6	44	1	-	-	-	45		51
TUR	TURKEY	356	1	47	8	12	2	426	1	-	-	-	-	1		427
YUG	YUGOSLAVIA	18	7	2	1	2	2	32	509	8	-	4	1	522		554
TOTAL		507	257	180	34	172	8	1158	5682	142	125	186	69	6204	0	7362
PER CENT		6.9	3.5	2.4	0.5	2.3	0.1	15.7	77.2	1.9	1.7	2.5	0.9	84.3	0.0	100.0

* NO CASES, 1) 1 DOG IMPORTED FROM ZAIRE.

TABLE 3

EUR EUROPE 2/88

RABIES CASES
'OTHER ANIMAL SPECIES'

1. 4.88 - 30. 6.88

LOCATION CODE	NAME	OTHER DOMESTIC ANIMALS				OTHER WILD ANIMALS							TOTAL
		DONKEY	MULE	PIG	OTHER	RACOON DOG	WILD CAT	WILD BOAR	CHAMOIS	INSECTIV BAT	SQUIRREL	BLACK RAT	
AUT	AUSTRIA	-	-	1	-	-	-	-	1	-	-	-	2
CZE	CZECHOSLOVAKIA	-	-	1	-	-	1	-	-	-	-	-	2
DEU	FED.REP. OF GERMANY	-	-	-	-	-	-	1	-	1	-	-	2
FIN	FINLAND	-	-	-	-	13	-	-	-	-	-	-	13
FRA	FRANCE	1	-	-	-	-	-	-	-	-	-	1	2
HUN	HUNGARY	-	-	-	-	-	2	-	-	-	-	-	2
NET	NETHERLANDS	-	-	-	-	-	-	-	-	10	-	-	10
POL	POLAND	-	-	-	-	9	-	2	-	-	1	1	13
TUR	TURKEY	1	1	-	-	-	-	-	-	-	-	-	2
YUG	YUGOSLAVIA	-	-	-	1	-	-	-	-	-	-	-	1
TOTAL		2	1	2	1	22	3	3	1	11	1	2	49
PER CENT		4.1	2.0	4.1	2.0	44.9	6.1	6.1	2.0	22.4	2.0	4.1	100.0

AUT AUSTRIA RABIES CASES 1. 4.88 - 30. 6.88

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		
104	GUESSING							0	7	-	-	-	-	7		7
108	OBERPULLENDORF							0	2	-	-	-	-	2		2
201	KLAGENFURT-STADT							0	2	-	-	-	-	2		2
202	VILLACH-STADT							0	3	-	-	-	-	3		3
204	KLAGENFURT-LAND							0	6	-	-	1	-	7		7
205	SANKT VEIT AN DER GL	-	-	1	-	1	-	2	14	1	-	1	-	16		18
206	SPITTAL AN DER DRAU	1	1	-	-	2	-	4	24	1	-	1	-	26		30
207	VILLACH-LAND							0	1	-	-	-	-	1		1
209	WOLFSBERG							0	23	-	-	-	-	23		23
210	FELDKIRCHEN	-	-	-	-	1	-	1	3	-	-	-	-	3		4
309	GMUEND							0	1	-	-	-	-	1		1
325	ZWETTL							0	2	-	-	-	-	2		2
406	FREISTADT							0	2	-	-	-	-	2		2
407	GMUNDEN							0	26	4	-	-	-	30		30
417	VOECKLABRUCK							0	9	-	-	1	-	10		10
418	WELS-LAND							0	1	-	-	-	-	1		1
502	HALLEIN							0	4	-	-	-	-	4		4
503	SALZBURG-LAND							0	2	-	-	-	-	2		2
504	SANKT JOHANN IM PONG							0	2	-	-	-	-	2		2
505	TAMSWEG							0	29	1	-	1	-	31		31
506	ZELL AM SEE							0	12	-	-	-	-	12		12
601	GRAZ-STADT							0	1	-	-	-	-	1		1
602	BRUCK AN DER MUR							0	29	5	2	4	-	40		40
603	DEUTSCHLANDSBERG							0	8	-	1	-	-	9		9
604	FELDBACH							0	1	-	-	-	-	1		1
606	GRAZ-LAND							0	38	6	-	3	1	48		48
608	JUDENBURG							0	12	-	-	-	-	12		12
609	KNITTELFELD	-	1	-	-	-	-	1	6	-	-	-	-	6		7
610	LEIBNITZ							0	2	1	1	-	-	4		4
611	LEOBEN	-	-	-	-	1	-	1	21	4	-	8	-	33		34
612	LIEZEN							0	8	1	-	-	-	9		9
613	MUERZZUSCHLAG							0	3	-	-	-	-	3		3
614	MURAU	-	1	-	-	1	1	3	56	3	1	1	-	61		64
615	RADKERSBURG							0	1	-	-	-	-	1		1
616	VOITSBERG							0	1	-	-	-	-	1		1
617	WEIZ							0	7	1	-	1	-	9		9
707	LIENZ	-	-	-	-	1	-	1	12	-	1	-	-	13		14
708	REUTTE							0	5	-	-	1	-	6		6
TOTAL		1	3	1	0	7	1	13	386	28	6	23	1	444	0	457
PER CENT		0.2	0.7	0.2	0.0	1.5	0.2	2.8	84.5	6.1	1.3	5.0	0.2	97.2	0.0	100.0

RABIES CASES 1. 4.88 - 30. 6.88

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															
LG	LIEGE	1	-	-	1	-	-	2	18	-	-	-	-	18		20
LI	LIMBURG							0	1	1	-	-	-	2		2
LX	LUXEMBOURG	-	-	1	-	9	-	10	20	-	-	-	-	20		30
NA	NAMUR	-	-	2	-	-	-	2	12	-	-	-	-	12		14
TOTAL		1	0	3	1	9	0	14	51	1	0	0	0	52	0	66
PER CENT		1.5	0.0	4.5	1.5	13.6	0.0	21.2	77.3	1.5	0.0	0.0	0.0	78.8	0.0	100.0
FIN	FINLAND															
05	KYMI	1	1	-	-	-	-	2	3	1	-	-	13	17		19
TOTAL		1	1	0	0	0	0	2	3	1	0	0	13	17	0	19
PER CENT		5.3	5.3	0.0	0.0	0.0	0.0	10.5	15.8	5.3	0.0	0.0	68.4	89.5	0.0	100.0
LUX	LUXEMBOURG															
06	CLERVAUX							0	-	-	1	-	-	1		1
NET	NETHERLANDS															
01	DRENTHE							0	-	-	-	-	2	2		2
02	FRIESLAND							0	-	-	-	-	3	3		3
05	LIMBURG	-	-	1	-	-	-	1	5	1	-	-	-	6		7
07	NOORD-HOLLAND							0	-	-	-	-	4	4		4
08	OVERIJSSEL							0	-	-	-	-	1	1		1
TOTAL		0	0	1	0	0	0	1	5	1	0	0	10	16	0	17
PER CENT		0.0	0.0	5.9	0.0	0.0	0.0	5.9	29.4	5.9	0.0	0.0	58.8	94.1	0.0	100.0

CZE C Z E C H O S L O V A K I A R A B I E S C A S E S 1. 4.88 - 30. 6.88

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						0		0
01	CENTRAL BOHEMIA	1	4	-	-	-	-	5	49	-	-	-	-	49		54
02	SOUTH BOHEMIA	1	1	-	-	-	1	3	12	-	1	1	-	14		17
03	WEST BOHEMIA	2	1	-	-	-	-	3	64	-	1	-	-	65		68
04	NORTH BOHEMIA	1	3	-	-	-	-	4	90	-	5	-	-	95		99
05	EAST BOHEMIA							0	24	2	-	1	-	27		27
06	SOUTH MORAVIA							0	19	-	-	-	-	19		19
07	NORTH MORAVIA							0	10	1	-	1	-	12		12
0	CSR	5	9	-	-	-	1	15	268	3	7	3	-	281		296
10	DISTRICT OF BRATISLAV	-	1	-	-	-	-	1						0		1
11	WEST SLOVAKIA	-	1	-	-	-	-	1	9	-	-	-	-	9		10
12	CENTRAL SLOVAKIA	1	2	-	-	-	-	3	16	1	2	-	1	20		23
13	EAST SLOVAKIA	-	1	-	-	-	-	1	18	-	-	-	-	18		19
1	SSR	1	5	-	-	-	-	6	43	1	2	-	1	47		53
TOTAL		6	14	0	0	0	1	21	311	4	9	3	1	328	0	349
PER CENT		1.7	4.0	0.0	0.0	0.0	0.3	6.0	89.1	1.1	2.6	0.9	0.3	94.0	0.0	100.0

DDR GERMAN DEMOCRATIC REPUBLIC — R A B I E S C A S E S — 1. 4.88 - 30. 6.88

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	HAUPTSTADT BERLIN							0	-	-	-	1	-	1		1
02	COTTBUS	1	-	1	-	-	-	2	13	1	1	1	-	16		18
03	DRESDEN	-	-	1	-	2	-	3	47	1	1	1	-	50		53
04	ERFURT	1	5	2	-	3	-	11	26	-	3	2	-	31		42
05	FRANKFURT/ODER	1	-	-	-	-	-	1	25	1	1	1	-	28		29
06	GERA	3	3	1	-	3	-	10	15	1	1	1	-	18		28
07	HALLE	4	1	-	-	-	-	5	13	1	1	-	-	15		20
08	KARL-MARX-STADT	3	2	-	-	2	-	7	32	-	1	1	-	34		41
09	LEIPZIG							0	4	-	1	-	-	5		5
10	MAGDEBURG	2	-	5	-	-	-	7	21	1	-	-	-	22		29
11	NEUBRANDENBURG	-	1	1	-	-	-	2	10	-	2	-	-	12		14
12	POTSDAM							0	6	1	-	-	-	7		7
13	ROSTOCK	2	5	-	-	2	-	9	29	2	2	4	-	37		46
14	SCHWERIN	4	4	-	-	-	-	8	23	2	3	-	-	28		36
15	SUHL							0	12	-	1	-	-	13		13
TOTAL		21	21	11	0	12	0	65	276	11	18	12	0	317	0	382
PER CENT		5.5	5.5	2.9	0.0	3.1	0.0	17.0	72.3	2.9	4.7	3.1	0.0	83.0	0.0	100.0

DEU FEDERAL REPUBLIC OF GERMANY — RABIES CASES — 1. 4.88 - 30. 6.88

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		
010	SCHLESWIG-HOLSTEIN							0	-	-	-	-	1	1		1
020	HAMBURG							0						0		0
031	BRAUNSCHWEIG	-	-	2	1	-	-	3	17	-	-	1	-	18		21
032	HANNOVER	-	2	-	-	2	-	4	12	-	-	1	1	14		18
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	-	-	2	3	-	-	-	-	3		5
055	MUENSTER							0						0		0
057	DETMOLD	-	1	1	-	-	-	2	6	-	-	-	-	6		8
059	ARNSBERG							0	4	-	-	-	-	4		4
061	DARMSTADT	2	-	1	1	3	-	7	28	1	-	-	-	29		36
062	KASSEL	-	6	2	-	3	-	11	52	2	3	9	-	66		77
071	KOBLENZ	-	-	-	-	1	-	1	12	2	-	-	-	14		15
072	TRIER	-	1	1	-	4	-	6	5	-	-	1	-	6		12
073	RHEINHESSEN-PFALZ	-	-	-	1	-	-	1	9	-	-	-	-	9		10
081	STUTTGART	-	1	1	-	-	-	2	17	1	1	1	-	20		22
082	KARLSRUHE	-	-	1	-	1	-	2	21	-	2	5	-	28		30
083	FREIBURG	-	2	-	-	1	-	3	24	3	-	1	-	28		31
084	TUEBINGEN	-	-	2	-	3	-	5	12	-	-	-	-	12		17
091	OBERBAYERN	1	-	1	1	-	-	3	7	-	-	-	-	7		10
092	NIEDERBAYERN							0	7	1	1	-	-	9		9
093	OBERPFALZ	2	1	-	-	-	-	3	9	2	2	-	-	13		16
094	OBERFRANKEN							0	3	2	-	-	-	5		5
095	MITTELFRANKEN	-	1	-	-	-	-	1	16	-	-	2	-	18		19
096	UNTERFRANKEN	2	2	1	-	3	-	8	29	2	1	1	-	33		41
097	SCHWABEN							0	13	-	-	-	-	13		13
100	SAARLAND	-	-	2	-	-	-	2	13	-	1	2	-	16		18
110	BERLIN (WEST)							0						0		0
TOTAL		7	18	15	5	21	0	66	319	16	11	24	2	372	0	438
PER CENT		1.6	4.1	3.4	1.1	4.8	0.0	15.1	72.8	3.7	2.5	5.5	0.5	84.9	0.0	100.0

FRA FRANCE — RABIES CASES — 1. 4.88 – 30. 6.88

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		
02	AISNE							0	4	–	–	–	–	4		4
08	ARDENNES	–	2	–	–	–	–	2	10	–	–	–	–	10		12
10	AUBE	–	–	–	1	2	–	3	33	–	–	–	–	33		36
21	COTE D'OR	–	1	–	–	4	–	5	53	–	–	–	–	53		58
25	DOUBS	–	1	–	–	2	–	3	49	–	–	–	–	49		52
39	JURA							0	20	2	–	–	–	22		22
51	MARNE	–	–	–	–	1	–	1	4	–	–	–	–	4		5
52	MARNE (HAUTE)	–	–	–	–	2	–	2	5	–	–	–	–	5		7
54	MEURTHE ET MOSELLE	–	4	3	2	–	–	9	19	–	–	–	1	20		29
55	MEUSE	1	–	1	–	–	–	2	17	–	–	–	–	17		19
57	MOSELLE	–	–	–	–	1	–	1	5	–	–	–	–	5		6
58	NIEVRE	–	–	–	–	3	–	3	14	1	–	–	–	15		18
60	OISE							0	4	–	–	–	–	4		4
67	RHIN (BAS)	–	1	2	–	2	1	6	9	–	–	–	–	9		15
68	RHIN (HAUT)	–	3	–	–	–	–	3	14	1	4	–	–	19		22
70	SAONE (HAUTE)	–	–	1	–	6	–	7	19	–	1	–	–	20		27
74	SAVOIE (HAUTE)							0	2	1	–	–	–	3		3
77	SEINE ET MARNE	–	–	–	1	–	–	1	15	–	–	–	–	15		16
88	VOSGES	–	3	–	2	–	–	5	14	3	1	–	–	18		23
89	YONNE	–	–	–	–	1	–	1	26	–	–	–	–	26		27
90	TERR.DE BELFORT							0	3	–	–	–	–	3		3
TOTAL		1	15	7	6	24	1	54	339	8	6	0	1	354	0	408
PER CENT		0.2	3.7	1.7	1.5	5.9	0.2	13.2	83.1	2.0	1.5	0.0	0.2	86.8	0.0	100.0

HUN HUNGARY

RABIES CASES

1. 4.88 - 30. 6.88

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	BUDAPEST							0	1	-	-	-	-	1		1
02	BARANYA	6	5	-	-	2	-	13	7	-	-	-	-	7		20
03	BACS-KISKUN	1	2	1	-	-	-	4	3	-	-	-	-	3		7
04	BEKES	-	1	3	-	-	-	4	1	-	-	-	-	1		5
05	BORSOD-ABAUJ-ZEMPLEN							0	7	-	-	-	1	8		8
06	CSONGRAD	-	2	-	-	-	-	2	3	-	-	-	-	3		5
07	FEJER	-	1	1	-	-	-	2	6	-	-	-	-	6		8
08	GYOER-SOPRON							0	2	-	-	1	-	3		3
09	HAJDU-BIHAR	-	1	1	-	-	-	2	5	-	-	-	-	5		7
10	HEVES	-	1	1	-	-	-	2						0		2
11	KOMAROM	-	1	-	-	-	-	1	4	-	-	-	-	4		5
12	NOGRAD							0	3	-	-	-	1	4		4
13	PEST	1	-	-	-	-	-	1	8	-	-	-	-	8		9
14	SOMOGY	1	3	1	-	1	-	6	15	-	-	-	-	15		21
15	SZABOLCS-SZATMAR	-	-	2	-	-	-	2	4	-	-	-	-	4		6
16	SZOLNOK	-	1	-	-	-	-	1	1	-	-	-	-	1		2
17	TOLNA	-	2	2	-	-	-	4	9	-	-	-	-	9		13
18	VAS							0	7	-	-	-	-	7		7
19	VESZPREM	-	-	1	-	-	-	1	5	-	-	-	-	5		6
20	ZALA	-	2	-	-	-	-	2	15	-	1	-	-	16		18
TOTAL		9	22	13	0	3	0	47	106	0	1	1	2	110	0	157
PER CENT		5.7	14.0	8.3	0.0	1.9	0.0	29.9	67.5	0.0	0.6	0.6	1.3	70.1	0.0	100.0

POL POLAND — RABIES CASES — 1. 4.88 - 30. 6.88

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	WARSZAWA	1	-	-	-	-	-	1	7	-	1	1	-	9		10
05	BIALYSTOK							0	5	-	-	-	1	6		6
07	BIELSKO-BIALA							0	-	-	-	1	-	1		1
09	BYDGOSZCZ	-	1	2	-	-	-	3	6	-	1	-	1	8		11
11	CHELM							0	1	-	-	-	-	1		1
13	CIECHANOW	-	1	1	-	-	-	2	5	-	-	-	-	5		7
15	CZESTOCHOWA							0	3	-	-	-	-	3		3
17	ELBLAG							0	2	-	-	-	-	2		2
19	GDANSK	-	1	-	-	-	-	1	6	1	-	-	1	8		9
21	GORZOW							0	10	-	-	-	-	10		10
23	JELENIA GORA							0	12	-	-	-	-	12		12
25	KALISZ							0	4	-	-	-	-	4		4
27	KATOWICE							0	10	-	1	-	-	11		11
29	KIELCE							0	7	-	-	-	-	7		7
31	KONIN							0	3	-	-	-	2	5		5
33	KOSZALIN	1	-	-	-	-	-	1	7	-	1	-	2	10		11
35	KRAKOW							0	1	-	-	-	-	1		1
37	KROSNO							0	2	-	1	-	-	3		3
39	LEGNICA							0	4	-	1	-	-	5		5
41	LESZNO	-	1	-	-	-	-	1	3	-	1	-	-	4		5
49	NOWY SACZ							0	1	-	-	-	-	1		1
51	OLSZTYN	1	-	-	-	-	-	1	3	-	2	2	2	9		10
53	OPOLE	1	-	-	-	-	-	1	12	-	-	1	-	13		14
57	PILA	-	-	1	-	-	-	1	6	-	-	-	-	6		7
61	PLOCK							0	2	-	-	-	-	2		2
63	POZNAN	2	5	-	-	-	-	7	6	-	-	-	-	6		13
65	PRZEMYSL							0	7	-	1	-	-	8		8
67	RADOM	-	1	-	-	-	-	1						0		1
71	SIEDLCE	1	-	-	-	-	-	1	-	-	-	1	-	1		2
75	SKIERNIEWICE	-	1	-	-	-	-	1	1	-	-	-	-	1		2
77	SLUPSK	2	-	-	-	-	-	2	4	-	-	-	-	4		6
79	SUWALKI							0	5	-	-	1	2	8		8
81	SZCZECIN	2	-	-	-	-	-	2	7	-	-	-	1	8		10
83	TARNOBRZEG							0	2	-	-	-	-	2		2
89	WALBRZYCH							0	6	-	-	-	1	7		7
91	WLOCLAWEK							0	1	-	-	-	-	1		1
93	WROCLAW							0	4	-	-	-	-	4		4
95	ZAMOSC							0	1	-	1	-	-	2		2
97	ZIELONA GORA	-	1	-	-	-	-	1	6	-	-	-	-	6		7
TOTAL		11	12	4	0	0	0	27	172	1	11	7	13	204	0	231
PER CENT		4.8	5.2	1.7	0.0	0.0	0.0	11.7	74.5	0.4	4.8	3.0	5.6	88.3	0.0	100.0

RABIES CASES 1. 4.88 - 30. 6.88

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		
ROM ROMANIA															
04 BACAU							0	2	-	-	-	-	2		2
10 BUZAU							0	1	-	-	-	-	1		1
31 SATU-MARE	-	-	-	1	-	-	1						0		1
32 SALAJ							0	1	-	-	-	-	1		1
TOTAL	0	0	0	1	0	0	1	4	0	0	0	0	4	0	5
PER CENT	0.0	0.0	0.0	20.0	0.0	0.0	20.0	80.0	0.0	0.0	0.0	0.0	80.0	0.0	100.0
SWI SWITZERLAND AND LIECHTENSTEIN															
08 GENEVE	-	1	-	-	-	-	1	1	-	-	-	-	1		2
22 VAUD 1)	1	-	-	-	2	-	3	3	1	-	-	-	4		7
23 VALAIS							0	2	-	-	-	-	2		2
TOTAL	1	1	0	0	2	0	4	6	1	0	0	0	7	0	11
PER CENT	9.1	9.1	0.0	0.0	18.2	0.0	36.4	54.5	9.1	0.0	0.0	0.0	63.6	0.0	100.0
YUG YUGOSLAVIA															
10 SR BOSNA I HERCEGOVIN							0	12	-	-	-	-	12		12
30 SR HRVATSKA	1	-	-	-	-	1	2	50	-	-	1	-	51		53
50 SR SLOVENIJA	1	3	-	1	-	-	5	114	7	-	2	-	123		128
60 SR SRBIJA							0	4	-	-	-	-	4		4
61 SAP VOJVODINA	1	1	-	-	-	-	2	8	-	-	-	-	8		10
TOTAL	3	4	0	1	0	1	9	188	7	0	3	0	198	0	207
PER CENT	1.4	1.9	0.0	0.5	0.0	0.5	4.3	90.8	3.4	0.0	1.4	0.0	95.7	0.0	100.0

1) 1 DOG IMPORTED FROM ZAIRE.

TUR TURKEY

RABIES CASES

1. 4.88 – 30. 6.88

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		
001	ADANA	3	–	–	–	–	–	3						0		3
002	ADIYAMAN	2	–	–	–	–	–	2						0		2
003	AFYON	1	–	–	–	–	–	1						0		1
006	ANKARA	1	1	–	–	–	–	2						0		2
007	ANTALYA	2	–	–	–	–	1	3						0		3
009	AYDIN	4	–	–	–	–	–	4						0		4
010	BALIKESIR	3	–	2	–	1	–	6						0		6
011	BILECIK	2	–	–	–	–	–	2						0		2
014	BOLU	5	–	–	–	–	–	5						0		5
015	BURDUR	1	–	1	–	–	–	2						0		2
016	BURSA	11	–	–	–	–	–	11						0		11
017	CANAKKALE	1	–	–	–	–	–	1						0		1
018	CANKIRI	1	–	–	–	–	–	1						0		1
019	CORUM	3	–	1	–	–	–	4						0		4
020	DENIZLI	2	–	–	–	–	–	2						0		2
022	EDIRNE	2	–	–	–	–	–	2						0		2
023	ELAZIG	1	–	–	–	–	–	1						0		1
026	ESKISEHIR	1	–	–	–	–	–	1						0		1
027	GAZIANTEP	11	–	1	1	1	1	15						0		15
029	GUEMUESHANE	–	–	1	–	–	–	1						0		1
031	HATAY	1	–	–	–	–	–	1						0		1
032	ISPARTA	1	–	–	–	–	–	1						0		1
034	ISTANBUL	2	–	–	–	1	–	3						0		3
035	IZMIR	17	–	2	2	–	–	21						0		21
037	KASTAMONU	1	–	1	–	–	–	2						0		2

TUR CONTINUED

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		
038	KAYSERI	1	-	-	-	-	-	1						0		1
039	KIRKLARELI	3	-	1	-	1	-	5						0		5
041	KOCAELI	4	-	-	-	-	-	4						0		4
042	KONYA	6	-	-	-	-	-	6						0		6
043	KUETAHYA	6	-	1	-	-	-	7						0		7
044	MALATYA	1	-	-	-	-	-	1						0		1
045	MANISA	4	-	-	-	-	-	4						0		4
046	KAHRAMAN MARAS	3	-	2	-	-	-	5						0		5
050	NEVSEHIR	4	-	-	-	-	-	4						0		4
051	NIGDE	1	-	-	-	-	-	1						0		1
052	ORDU	15	-	2	-	-	-	17						0		17
054	SAKARYA	9	-	3	-	-	-	12						0		12
055	SAMSUN	17	-	3	-	2	-	22						0		22
057	SINOP	10	-	2	1	-	-	13						0		13
060	TOKAT	8	-	-	1	-	-	9						0		9
061	TRABZON	1	-	-	-	-	-	1						0		1
063	URFA	2	-	-	-	-	-	2						0		2
064	USAK	-	-	-	-	1	-	1						0		1
066	YOZGAT	1	-	-	-	-	-	1						0		1
067	ZONGULDAK	4	-	3	-	-	-	7						0		7
TOTAL		179	1	26	5	7	2	220	0	0	0	0	0	0	0	220
PER CENT		81.4	0.5	11.8	2.3	3.2	0.9	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0

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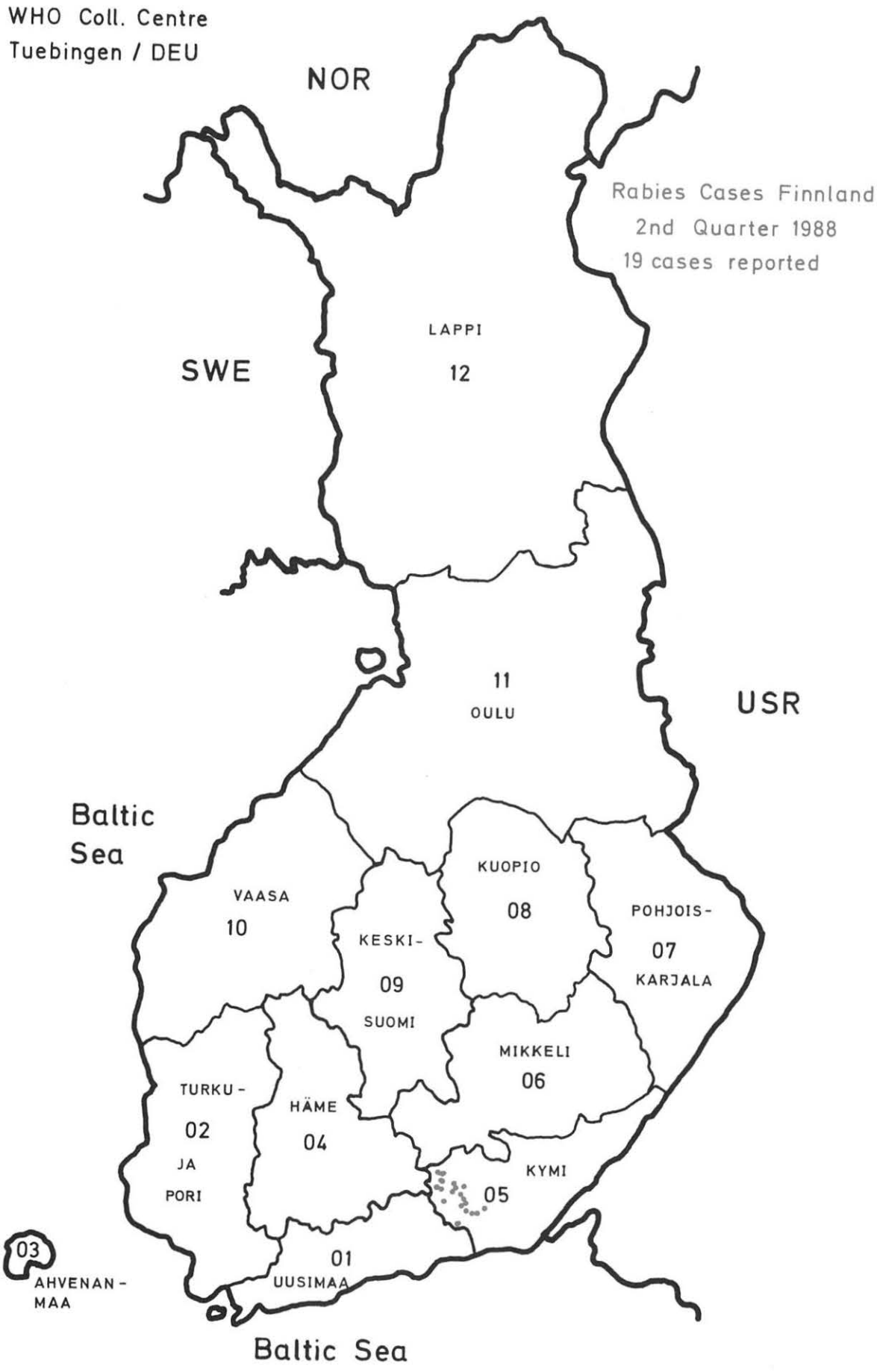
WHO Coll. Centre
Tuebingen / DEU

Rabies Cases Turkey
2nd Quarter 1988
220 cases reported


WHO Coll. Centre
Tuebingen / DEU
NOR
Rabies Cases Finnland
2nd Quarter 1988
19 cases reported
LAPPI
12
SWE
11
OULU
USR
Baltic
Sea
KUOPIO
08
VAASA
10
KESKI-
09
SUOMI
POHJOIS-
07
KARJALA
MIKKELI
06
TURKU-
02
JA
PORI
HÄME
04
KYMI
05
03
AHVENAN-
MAA
01
UUSIMAA
Baltic Sea

WHO Coll. Centre
Tuebingen / DEU

Rabies Cases Europe
2nd Quarter 1988

2968 cases reported

11 bat rabies cases included

ISL
(rabies free)

NOR
(mainland rabies free)

SWE
(rabies free)

FIN
(19)

DEN
(0)

IRE
(rabies free)

GBR
(rabies free)

NET
(7)

(10)

BEL
(66)

(1)

(1)
DEU
(437)

(382)
DDR

POL
(231)

USR
(no data)

CZE
(349)

(457)
AUT

HUN
(157)

FRA
(408)

SWI
(11)

ROM
(5)

ITA
(0)

YUG
(207)

BUL
(rabies free)

POR
(rabies free)

SPA
(0)

ALB
(no data)

GRE
(0)

TUR
(220)

0 50 100 km