RABIES BULLETIN EUROPE - VOL. 12/No 1/1988

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 first quarter 1988. The situation in general appears under 2., and in individual countries under 2.1 to 2.26.

In the miscellaneous section under **3.1** information on an international conference is given. Under **3.2** a note is presented for topical reasons: Finland had her first case of rabies in April 1988 after nearly 30 years of being rabies-free. **3.3** is a short write-up on a suspected rabies case in France which proved to be negative in the the end, and in connection with it, the difficulties of the intra-vitam laboratory diagnosis. Under **3.4** a human rabies case in the U.S.A. is described.

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

The last section lists the official contributors to the BULLETIN.

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

2. RABIES IN EUROPE, 1ST QUARTER 1988

During the first quarter 1988, **4394 cases** of rabies were reported in Europe. These were **3780** cases in **wild animals** (86%) and **614** cases in **domestic animals** (14%). Of the cases in wild animals 3516 (80% of total) were foxes, 63 badgers, 62 other mustelids, 113 deer and 26 other and unspecified species. Of the 614 domestic animals, 266 were dogs (of which 177 (66% of all dogs) were reported from Turkey, a country with dog-mediated rabies) 145 cats, 99 cattle, 15 horses, 87 small ruminants and 2 other domestic animals. These data are summarized in Table 1. Table 2 lists 'other animals species', less frequently involved in rabies.

Rabies-free countries in Europe participating in the surveillance are: Bulgaria, Finland, United Kingdom, Ireland, Iceland, Portugal, the mainland of Spain, and Sweden. There were no cases reported for this quarter from Denmark, Greece, Italy, the Netherlands and Norway.

No case of bat rabies was reported.

No human case was reported.

Individual country reports follow:

2.1 Rabies in Austria (AUT)

by H. Schnabl

During the first quarter 1988, out of 3697 samples received 681 were diagnosed rabid. Compared to the previous quarter (579 cases) an increase of cases was noticed by 17.6%.

Of 666 rabid wild animals (97.8% of total) 610 (89.5%) were foxes, 21 badgers, 11 martens, 23 roe deer and one polecat. Amongst 15 rabid domestic animals 6 were cattle, 4 cats, 2 sheep and 3 dogs.

The distribution of rabies cases in the federal provinces was as follows:

Tyrol: Lienz and Reutte (33 cases = 4.8% of total); Salzburg: all of the province, except Salzburg-Stadt (78 = 11.5%); Carinthia: all of the province, except Hermagor (144 = 21.4%); Styria: all of the province, except Fürstenfeld (344 = 50.5%); Burgenland: all of the province, except Mattersburg and Neusiedl (28 = 4.1%); Lower Austria: Horn and Zwettl (3 = 0.4%); Upper Austria: Freistadt, Gmunden, Urfahr-Umgebung, Vöcklabruck, Mag. Linz (49 = 7.2%); Vienna and Vorarlberg: rabies-free.

2.2 Rabies in Belgium (BEL)

by J. Tambeur

44 rabies cases were confirmed in 27 localities of the provinces Liège, Luxembourg and Namur during the first quarter 1988; 15 cases were in domestic animals (1 dog, 2 cats, 7 cattle and 5 small ruminants) and 29 in wild animals (all of them in foxes).

There was a decrease of cases by 50% compared to the fourth quarter 1987 and by 17% compared to the same quarter in 1987. There is a slow regression of the disease since 1982.

The two regions mainly involved were the centre of the province Liège and the south of the province Luxembourg.

The field trial of oral vaccination of foxes continues in the east of the province of Liège and is going to be extended covering all the area to the south of the river Meuse in autumn 1988.

2.3 Bulgaria (BUL)

The country remained rabies-free.

2.4 Rabies in Czechoslovakia (CZE)

by M. Olach and J. Neumann

In the first quarter of 1988 a total of 455 rabies cases were ascertained in Czechoslovakia (CSR-353, SSR-102). In comparison with the first quarter of 1987, the total number of rabies cases decreased by 2.2%. In the CSR rabies cases decreased by 11.7% (1st quarter 1987-400 cases); in the SSR they increased by 56.9% (1st quarter 1987-65 cases).

The fox accounted for the majority of cases (403). The other affected wildlife species were: 3 badgers, 8 roe-deer, 8 martens, 1 stag, 1 moufflon and 1 raccoon dog. Regarding the domestic animals, there were 10 dogs and 20 cats affected. The total involvement of rabies in wildlife amounted to 93.4% (425 cases) and in domestic animals to 6.6% (30 cases).

After a lengthy time, rabies was again recorded in the district of Kolín. The highest number of cases was ascertained in the North Bohemian Region (127 cases), followed by Central Bohemia (62 cases - increasing occurrence at present), West Bohemia (56 cases) and East Slovakia (48 cases). In regard to the districts, the highest figures were found in the districts

of Louny (39), followed by Litomerice and Chomutov (26 each), Pribram (22), Karlovy Vary (21), Pisek (15), Kutna Hora (12).

At the present time, rabies has been recorded in 450 foci involving 84 districts (in the CSR in 357 foci involving 58 districts, and in the SSR in 93 foci involving 26 districts).

No case of rabies was recorded in man.

2.5 Rabies in Germany, Democratic Republic (DDR)

During the first quarter 1988, 474 rabies cases were diagnosed in the Democratic Republic of Germany, 65 cases more than during the previous quarter and 13 more in comparison with the first quarter 1987. Of the 474 cases were 402 (84.8% of total) in wild animals - 366 foxes, 5 badgers, 11 stone martens, 18 roe deer, 1 fallow deer and 1 European bison, and 72 (15.2%) in domestic animals - 15 dogs, 33 cats, 3 horses, 7 cattle and 14 sheep.

There was a concentration of cases in the Bezirke (departments) of Erfurt (58 cases), Dresden and Magdeburg (52 cases each). All other departments recorded between 2 (Hauptstadt Berlin) and 40 (Gera).

2.6 Rabies in Denmark (DEN)

by E. Stougaard

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

2.7 Rabies in Germany, Federal Republic (DEU)

A total of 737 rabies cases were reported during the first quarter 1988, resulting in a reduction of 17.4% compared to the previous quarter (892 cases). In comparison with the first quarter 1987 (1198 cases) there has been a reduction of 38.5%.

In fox-mediated rabies a peak of rabies figures is expected in the first quarter, more precisely in March, due to the mating season when male foxes roam. This has been so for the Federal Republic of Germany until 1984, when figures dropped from the fourth quarter of the previous year to the first quarter of the new year. The drop has been noticed now for four consecutive years.

4/1984 - 1840	4/1985 - 1933	4/1986 - 1467	4/1987 - 892
1/1985 - 1641	1/1986 - 1483	1/1987 - 1198	1/1988 - 737
minus 199	minus 450	minus 269	minus 155

There is no doubt a connection to the field trial of oral rabies vaccination of foxes, started during spring 1983 and continuously enlarged in the different federal states (Bundesländer). What had been noticed in the field trial area, that rabies figures dropped, is now affecting figures of the country in general. In fact, certain areas have virtually become rabies-free by vaccination. But, there is an other experience as well: when areas under vaccination are left too early, foci still active start again

expanding. Here an intensive surveillance is very important, so that foci are located as early as possible.

Concentration of rabies cases was noticed in the federal state of Hessen and on both sides of the Bavaria/Baden-Württemberg border in the far northern part of Baden-Wuerttemberg.

2.8 Finland (FIN)

The country remained rabies-free.

Editors note: see article 3.2 in this issue.

2.9 Rabies in France (FRA)

by J. Blancou

559 rabies cases were reported during the first quarter 1988, 61 cases more than during the previous quarter. 482 cases were registered in foxes (86.2% of total), 16 in other wild animals and 61 in domestic animals (5 dogs, 18 cats, 17 cattle, 19 small ruminants and 2 horses).

The dèpartements (departments) with the greatest number of cases during this quarter were: Haute Saône (77 cases), Côte d'Or (72 cases) and Aube (48 cases).

The field trial of oral vaccination of foxes, carried out during the year 1987, has led to the complete disappearance of rabies in the vaccinated zones after 2 to 3 vaccination campaigns (Moselle-900 km², Meurthe et Moselle-300 km², Doubs-125 km²).

2.10 Rabies in Greece (GRE)

by A. Saravanos

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

2.11 United Kingdom (GBR)

The country remained rabies-free.

2.12 Rabies in Hungary (HUN)

by L. Koltai

During the first quarter 1988, 411 rabies cases were registered in Hungary. Compared to the same period 1987 (568 cases), there was a decrease by 27.6%. Most of the cases occurred in foxes (86.6% of total). Komitate (provinces) mostly affected were located in Transdanubia: Somogy (62 cases), Baranya (41) and Vas (30).

Orders have again been given for an obligatory vaccination of dogs against rabies.

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 first quarter 1988, no case of rabies was registered in Italy.

2.16 Rabies in Luxembourg (LUX)

by R. Frisch

During the first quarter 1988, there were two rabies cases registered in the eastern part of the Grand Duchy of Luxembourg. The two cases were located in the same area where cases were noted during the previous quarter and might impair the success of the oral vaccination of foxes hitherto practiced.

Therefore, an additional vaccination campaign is planned at the end of May 1988 to interrupt the chain of infection. The area to be vaccinated would be about 120 km².

2.17 Rabies in the Netherlands (NET)

by J.H.M. Nieuwenhuijs

During the first quarter 1988, no rabies case has been registered.

Here is a summary of the samples reveiling negative results during this quarter:

Animals investigated for rabies during the first quarter of 1988

Province	Red fox adult neg.	Red fox young neg.	Dog neg.	Cat neg.	Rat neg.	Ferret neg.	Roe Deer neg.	Bat neg.	Species unknown neg.	Number sent in
Groningen	16		1							17
Friesland			2	2				4		8
Drenthe	12									12
Overijssel	4	1						4		9
Gelderland	11		1	1	1	1		1		16
Utrecht	2									2
Flevoland							1			1
N-Holland			1	1				3		5
Z-Holland	1		2	1				1		5
Zeeland				1						1
N-Brabant	1		1	1						3
Limburg	3		1							4
Total number	51*	1	9	7	1	1	1	13	1**	85

* Including one fox, location unknown.
** Species unknown, location unknown.

2.18 Rabies in Norway (NOR)

by H.O. Bach-Gansmo

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

The mainland remained rabies-free.

2.19 Rabies in Poland (POL)

by J. Kolacz

A total of 424 cases of rabies was reported during the first quarter 1988. It is an increase of 33,8% compared to the same period in 1987 (317 cases).

86.3% of the total cases were registered in wild animals, mainly in foxes (72.4% of total). Other wild animals affected were raccoon dogs (5%), roe deer (5%), pine martens (2.6%), 4 badgers, 1 polecat and 1 moose. Rabid domestic animals were registered in cats (6.4%), dogs (4%) and farm animals (3.3%).

Ten provinces (there are a total of 49) were rabies-free during the said period.

2.20 Rabies in Portugal (POR)

The country remained rabies-free.

2.21 Rabies in Romania (ROM)

Eleven cases were reported during the first quarter 1988 in Romania: 5 foxes, 1 badger, 3 cattle and 2 dogs. These cases were scattered in the northern half of the country.

2.22 Rabies in Spain (SPA)

by J. Nombela

No case of rabies was reported from the mainland of Spain.

There were 2 dog cases (one of them imported from Morocco) during the first quarter of 1988 in Melilla, Spanish territory in North Africa.

2.23 Sweden (SWE)

The country remained rabies-free.

2.24 Rabies in Switzerland (SWI)

by A.I. Wandeler

During the first quarter of 1988, the Swiss Rabies Diagnostic Center received 552 animals for examination. 40 (7%) of these were positive for rabies compared to 25 (3% of 839) in the previous quarter and 24 (3% of 919) in the first quarter of 1987. 38 cases were observed in foxes, 1 in a cat, and 1 in a sheep.

10 rabid foxes originated from a side valley in lower canton Valais. The rest of rabid animals were registered in the cantons Geneva, Vaud and Jura, from areas not yet protected by oral fox immunization. All rabies cases were relatively close to the Swiss/French border.

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

2.25 Rabies in Turkey (TUR)

During the first quarter 1988, 207 rabies cases were registered in Turkey. In comparison with the previous quarter (210 cases) rabies figures have hardly changed.

The distribution of animal species involved follows the urban rabies pattern: 177 dogs, 21 cattle, 3 horses, 5 sheep and only 1 fox.

The distribution of cases within the country is relatively even; nevertheless with more reports in the coastal areas and less reports in the central parts.

2.26 Rabies in Yugoslavia (YUG)

During the first quarter 1988, 347 rabies cases were registered. Of these were 324 in wild animals (321 foxes, 1 badger, 1 roe deer, 1 other wild animal) and 23 in domestic animals (15 dogs, 3 cats, 2 cattle, 2 sheep, 1 other domestic animal).

During the last quarter, 227 cases of rabies were reported, compared to 137 during the first quarter 1987.

Slovenia reported most of the cases (164), followed by Croatia (123), Vojwodina (30), Bosnia and Hercegovina (23) and Serbia (7).

3. MISCELLANEOUS

3.1 WHO-Information

There will be an International meeting on rabies shortly:

Title: **INTERNATIONAL 2ND IMVI-ESSEN / WHO SYMPOSIUM ON RABIES - New Developments in Rabies Control**

Time: 5. - 7. Juli 1988

Place: Essen, Federal Republic of Germany

Organizer: WHO Collaboraing Centre,
Institut for Medical Virology and Immunology,
University of Essen
Hufelandstr. 55
D-4300 Essen 1
Federal Republic of Germany

Contact: Dr. O. Thraenhart

Phone: Country Code-201-7991-3530

3.2 Rabies in Finland after nearly 30 Years

by R. Berger

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

Until 6 May there were a total of 6 cases: 3 foxes, 2 raccoon dogs and 1 dog. All cases occurred in an area within 30 km of the city Kouvola in the south-eastern part of Finland.

Editors note:
This information is presented here for topical reasons. A complete reporting will be given at the usual time in issue 2/88 of this BULLETIN.

3.3 Difficulties in the Intra-Vitam Laboratory Diagnosis of Human Rabies - A Recent Case Report in France

by P. Sureau*

On 5th December 1987 a young male adult, aged 38, died at the hospital of Grenoble with symptoms of viral encephalitis of unknown aetiology. He originated from the village of Moye, near the city of Rumilly, "département" of Haute Savoie which is an enzootic area of rabies since 1978. No precise history of bite or scratch was recorded but being a cattle owner he might have been in contact with a rabid (undiagnosed) domestic herbivore. Rabies was suspected.

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Specimens were taken for laboratory diagnosis (corneal impressions and saliva samples) on 26 and 27 November and examined at the Pasteur Institute of Lyon by the direct fluorescent antibody test (FAT). They were considered as possibly positive while virus isolation attempts by inoculation of the saliva in neuroblastoma cell cultures were repeatedly unsuccessful, due to heavy bacterial contamination. Some suspicious results were obtained by FAT on corneal impressions and saliva samples taken on 4 December (one day before death). Adult and newborn mice were inoculated with saliva on 4 December: 7 out of 20 mice died with clinical symptoms compatible to rabies. On the brain of a mouse which died 11 days after inoculation the same suspicious inclusions were observed with the FAT on the original samples of 4 December..

A brain specimen, obtained by cerebral biopsy performed on 4 December, gave a clearly negative result with the FAT.

More specimens were taken after death and examined on 7 December: brain (cortex, brain stem, cerebellum), submaxillary gland, skin from the occipital region of the scalp. All of them gave clear negative results with the FAT. Inoculations to neuroblastoma cell cultures, with and without dilution, as well as inoculation of mice gave negative results also.

All specimens were transmitted to the Pasteur Institute, Paris, on 15 December for confirmation:

1. The direct fluorescent antibody test gave negative results on: impressions of various parts of the brain (cortex, brain stem, Ammon's horn, cerebellum), impressions of sub-maxillary gland, sediment of saliva (taken on 27 November) and impression of the brain of the mouse which had died 11 days after inoculation of that saliva sample, and on cryomicrotome sections of skin biopsy and sub-maxillary gland.

2. Virus isolation attempts by neuroblastoma cell culture inoculation gave negative results, after 24 and 48 hours incubation, after inoculation with: suspensions of various parts of the brain, sub-maxillary gland, and the mouse brain.

3. Virus isolation attempts by intra-cerebral inoculation of newborn (48h) mice gave negative results (negative FAT on brain of mice sacrificed on 5th post-inoculation day) with all above mentioned specimens.

4. Rapid Rabies Enzyme Immuno Diagnosis (RREID) gave negative results with human brain and mouse brain specimens.

5. Rabies RNA detection by a dot hybridization assay gave negative results when applied to human brain and salivary gland specimens.

6. Electron microscopic examination failed to detect any rabies virions in all human brain specimens.

7. Histo-pathological examination failed to detect any specific cytoplasmic inclusions (Negri bodies) in cells of Ammon's horn, brain stem and cerebellum Purkinje's cells of the human brain specimen.

It appears that the first misleading results obtained by the FAT on specimens taken intra vitam, and later on the inoculated mouse brain, were due to a heavy contamination by cocci, later identified as Streptococcus haemolyticus group B, which due to the fact that they secrete Protein A had

unspecifically fixed the fluorescein-conjugate immunoglobulin. In fact, these "inclusions" were all of similar round shape and similar very small size, and present in very great number. This aspect should have called attention on their unspecific nature. The recommended procedure of using in parallel the fluorescent conjugate saturated on the one hand by normal brain and on the other hand by rabid brain should have corrected the misinterpretation.

This observation calls attention on the possible difficulties of the intra vitam laboratory diagnosis of rabies, the need to carefully follow the recommended procedures, and the absolute necessity of using at the same time several diagnostic techniques before giving a positive or negative answer.

3.4 Human Rabies - California, U.S.A. 1987

In December 1987, the first case of human rabies in the United States since May 1985 was diagnosed in San Francisco, California. The patient was a 13-year-old male immigrant; the diagnosis was made post-mortem.

The patient had no history of exposure to a rabid animal and had not traveled outside the United States since arriving from the Philippines in 1981. He had traveled outside San Francisco county (a county with no reported rabies in terrestrial animals) only twice in the previous year, once for a picnic on a San Mateo County beach in August 1987 and once for a 3-day camping trip to Sonoma County in northern California with 82 classmates and teachers in October 1987. The purpose of the camping trip was to identify wild animals, but, aside from a deer, a dead rabbit, and bats that were seen by two students, no animals were reported by the other students or listed in the patient's camping journal. Interviews with relatives, classmates, friends, and teachers did not identify any likely animal contact.

The patient was well until November 26, when he began experiencing painful lower back spasms. These symptoms progressed, and he was taken to an emergency room on November 28. He complained of shaking chills and pain in the penis, buttocks, and lower back. His neurological examination was normal, and he was afebrile, but his white blood cell (WBC) count was 20,200 (74% segmented neutrophils, 4% band neutrophils, 21% lymphocytes, and 1% monocytes). He was sent home with medication for the pain and spasms but returned the next day reporting priapism, abdominal pain, and pruritus that caused him to scratch his lower right abdomen. Opisthotonic posturing was precipitated by touching his penis or his back.

He was admitted to the hospital, with a differential diagnosis of pyelonephritis or appendicitis. On admission, his temperature was 38.3°C (100.9°F) rectally and his blood pressure was 150/90 mm Hg. Laboratory evaluation revealed a WBC count of 17,000/mm^3 and a creatine phosphokinase (CPK) of 1,300 IU/mL (normal, 5-202). A urine toxic screen that was falsely positive for cocaine metabolites caused initial concern about drug ingestion. An exploratory laparotomy and appendectomy were performed; no abnormalities were found. Over the next 2 days, he became increasingly agitated. He complained of blurred vision and inability to move his legs, but examination revealed no focal neurological abnormalities. A psychiatric disorder was also considered because he had priapism and expressed great concern about recent pubertal changes.

Lumbar punctures, performed on November 30 and December 2, revealed no WBCs and normal protein levels (15 mg/dL on November 30 and 40 mg/dL on December 2). A computerized tomographic (CAT) scan of the head was normal; an electroencephalogram showed moderate diffuse slow wave activity. On December 2, he experienced episodes of hyperthermia (temperature as high as 41.7°C [107.1°F], hypotension (blood pressure 54mm Hg systolic), hypoventilation (arterial blood, pCO_2 55 mm Hg, pO_2 78 mm Hg), bradycardia (heart rate, 40/min), and increased oral secretions (>1 liter/day). He became comatose, was intubated, and was transferred to a university hospital with a diagnosis of metabolic encephalopathy.

At the time of transfer, the patient had no corneal reflexes, but his doll's eye and gag reflexes were intact. The patient was examined for arthropod or other bite marks, but none were found. A lumbar puncture on December 3 revealed 52 mg/dL of protein (normal, 15-50) and 4 WBC/mm^3 (21% polymorphonuclear leukocytes, 44% lymphocytes, 35 % monocytes). Magnetic resonance inmaging and CAT scans of the head revealed watershed infarcts. On December 8, a lumbar puncture showed a pleocytosis of 25 WBC/mm^3 (21% polymorphonuclear cells, 40% lymphocytes, 39% monocytes) and protein of 53 mg/dL. His CPK, which had risen to 10,000 IU/mL, decreased to 600 IU/mL after treatment with diuretics and fluids. His peripheral WBC count ranged between 22,700/mm^3 and 12,700/mm^3. Despite vigorous supportive measures, the patient's condition deteriorated. He died on December 15, 19 days after onset of illness, with a diagnosis of encephalitis of unknown etiology.

On December 18, brain tissue was tested and found positive for rabies by fluorescent rabies antibody staining. Negri bodies were found subsequently, and rabies virus was isolated from brain tissue. The virus was typed by monoclonal antibodies. Its reactivity with a panel of monoclonal antibodies to rabies virus nucleocapsid and glycoprotein antigens distinguished it from variants associated with the disease in insectivorous bats in the United States but was identical to that of the virus from the skunk rabies enzootic in northern California.

Serum specimens collected on November 28 and December 9 were negative for rabies-neutralizing antibody, but a postmortem specimen collected on December 16 had a titer of 65,536 by the rapid fluorescent focus inhibition test. No antibodies were detected in cerebrospinal fluid (CSF) samples collected on November 30, December 2, and December 8. Rabies virus could not be isolated from the latter specimen.

Because of possible contact with the patient and his copious secretions, 12 family members and 75 of 177 health-care workers received rabies postexposure prophylaxis, at a cost of $39,000 for the immune globulin and vaccinations. A questionnaire, designed to identify staff who had been exposed (defined as contamination of an open wound or mucous membrane with saliva, other respiratory tract secretions, brain tissue, or CSF) was administered to hospital, medical examiner, and transport staff. Twenty-five staff members reported exposures to patient's saliva and received rabies postexposure prophylaxis. Rabies postexposure prophylaxis was also administered to a number of other staff members whose exposure status was uncertain. None of three medical examiner's staff received vaccinations because isolation procedures (use of gowns, gloves, masks, and goggles) were followed during the autopsy.

MMWR's Editorial Note: The source of this child's exposure to rabies remains unknown. Including this case, nine cases of human rabies have been diagnosed in the United States since 1980. Three of the patients had been exposed to dogs in rabies-endemic countries outside the United States. The other six patients, including the one whose case is reported here, had no definite history of exposure to rabies. Three of these six cases were diagnosed post-mortem.

These six patients ranged from 5 to 27 years of age; four were 13 years of age or younger. Rabies virus could be isolated and typed by monoclonal antibodies from specimens from four of the patients. In two of the cases. the rabies variants were similar to those found in rabid insectivorous bats. Retrospective interviews with the family of one of these patients revealed that the patient was probably bitten by a bat 7 months before the onset of illness. Outside the United States, some cases involving patients with no reported exposure have been attributed to exposure to bats. The etiology of other cases cannot be determined. Cases of rabies involving persons with no known exposure have long puzzled investigators and, with the decline in indigenous human rabies in the United States, now make up a larger proportion of the total.

In the current case and a previous one, the rabies variant was similar to that found in rabid terrestrial animals in the state where the patient lived, a finding that suggests that contact with rabid bats was not responsible for the disease. Although the patients' families and friends were interviewed in depth and could recall no possible exposures, the patients themselves could not be thoroughly questioned. It is possible that, as children, they might not have understood the danger of contact with some animals or might not have reported superficial exposures. Both cases involved children who had emigrated from rabies-endemic areas several years earlier (seven years earlier for the patient whose illness is reported here and 4 years earlier for the other patient), a fact that raises the possibility of exposure in their country of origin. However, human rabies cases with incubation periods of a year or more are extremely rare. Unfortunately, monoclonal antibody typing cannot distinguish among the isolates from these two patients, variants found in some terrestrial wildlife epizootics (skunks in California and foxes in Texas), and those found in dog rabies enzootic areas of Asia.

As in other cases of rabies, many of the early features of this patient's illness (fever, chills, back pain) were nonspecific and suggestive of many common infections. Although priapism has been previously reported as a presenting manifestaion of rabies, its presence in a 13-year-old boy wary of recent pubertal changes and without signs or laboratory results compatible with more common causes of priapism (sickle cell anemia, chronic granulocytic leukemia, and spinal cord injury) presented a difficult diagnostic challenge. Other aspects of his illness, including abdominal pain, opisthotonic posturing, lability of temperature, pulse, and respiratory rate, have been more commonly noted in rabies cases. Although the normal CSF on two occasions may have further obscured the diagnosis, the cerebrospinal fluid is frequently normal during the first week of illness and sometimes remains normal even later in the course of the disease.

Because human rabies is rare in developed countries, the diagnosis is especially difficult without an exposure history. The disease should be

considered in the differential diagnosis of any person with rapidly progressive, unexplained encephalitis, even when no history of exposure to a rabid animal is given. Persons caring for such patients should avoid exposure to saliva and other potentially infectious materials. "

(TAKEN FROM MORBIDITY AND MORTALITY WEEKLY REPORT (MMWR), MAY 20, 1988, VOL.37/NO. 19, CENTERS FOR DISEASE CONTROL, ATLANTA, GA 30333, U.S.A.)

TABLE 1

EUR EUROPE 1/88 RABIES CASES 1. 1.88 - 31. 3.88

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	3	4	6	-	2	-	15	610	21	12	23	-	666		681
BEL	BELGIUM	1	2	7	-	5	-	15	29	-	-	-	-	29		44
BUL	BULGARIA *							0						0		0
CZE	CZECHOSLOVAKIA	10	20	-	-	-	-	30	403	3	8	9	2	425		455
DDR	GERMAN DEM. REPUBLIC	15	33	7	3	14	-	72	366	5	11	19	1	402		474
DEN	DENMARK *							0						0		0
DEU	FED.REP. OF GERMANY	8	17	15	6	27	-	73	598	22	12	32	-	664		737
FIN	FINLAND *							0						0		0
FRA	FRANCE	5	18	17	2	19	-	61	482	4	6	5	1	498		559
GBR	UNITED KINGDOM *							0						0		0
GRE	GREECE *							0						0		0
HUN	HUNGARY	11	20	10	-	9	1	51	356	1	1	2	-	360		411
IRE	IRELAND *							0						0		0
ISL	ICELAND *							0						0		0
ITA	ITALY *							0						0		0
LUX	LUXEMBOURG	-	-	-	1	-	-	1	-	1	-	-	-	1		2
NET	NETHERLANDS *							0						0		0
NOR	NORWAY *							0						0		0
POL	POLAND	17	27	11	-	3	-	58	307	4	12	22	21	366		424
POR	PORTUGAL *							0						0		0
ROM	ROMANIA	2	-	3	-	-	-	5	5	1	-	-	-	6		11
SPA	SPAIN 1)	2	-	-	-	-	-	2						0		2
SWE	SWEDEN *							0						0		0
SWI	SWITZERLAND + LIECHT	-	1	-	-	1	-	2	38	-	-	-	-	38		40
TUR	TURKEY	177	-	21	3	5	-	206	1	-	-	-	-	1		207
YUG	YUGOSLAVIA	15	3	2	-	2	1	23	321	1	-	1	1	324		347
TOTAL		266	145	99	15	87	2	614	3516	63	62	113	26	3780	0	4394
PER CENT		6.1	3.3	2.3	0.3	2.0	0.0	14.0	80.0	1.4	1.4	2.6	0.6	86.0	0.0	100.0

* NO CASES, 1) IN NORTH AFRICA.

TABLE 2

EUR EUROPE 1/88

RABIES CASES
'OTHER ANIMAL SPECIES'

1. 1.88 - 31. 3.88

LOCATION CODE NAME	OTHER DOMESTIC ANIMALS		OTHER WILD ANIMALS					TOTAL
	PIG	OTH.DOM. ANIMALS	RACOON DOG	WILD BOAR	EUROPEAN BISON	MOUFLON	OTH.WILD ANIMALS	
CZE CZECHOSLOVAKIA	-	-	1	-	-	1	-	2
DDR GERMAN DEM. REPUBLIC	-	-	-	-	1	-	-	1
FRA FRANCE	-	-	-	1	-	-	-	1
HUN HUNGARY	1	-	-	-	-	-	-	1
POL POLAND	-	-	21	-	-	-	-	21
YUG YUGOSLAVIA	-	1	-	-	-	-	1	2
TOTAL	1	1	22	1	1	1	1	28
PER CENT	3.6	3.6	78.6	3.6	3.6	3.6	3.6	100.0

AUT AUSTRIA RABIES CASES 1. 1.88 - 31. 3.88

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		
103	EISENSTADT-LAND							0	1	-	-	-	-	1		1
104	GUESSING							0	15	-	1	-	-	16		16
105	JENNERSDORF							0	1	1	-	-	-	2		2
108	OBERPULLENDORF							0	6	-	-	-	-	6		6
109	OBERWART							0	3	-	-	-	-	3		3
201	KLAGENFURT-STADT							0	2	-	-	-	-	2		2
202	VILLACH-STADT							0	1	-	-	-	-	1		1
204	KLAGENFURT-LAND	-	-	1	-	-	-	1	9	1	-	-	-	10		11
205	SANKT VEIT AN DER GL	-	-	2	-	-	-	2	57	1	-	3	-	61		63
206	SPITTAL AN DER DRAU	-	1	2	-	-	-	3	19	1	-	1	-	21		24
207	VILLACH-LAND							0	5	-	-	-	-	5		5
208	VOELKERMARKT							0	5	-	-	-	-	5		5
209	WOLFSBERG							0	14	-	-	-	-	14		14
210	FELDKIRCHEN	1	-	-	-	-	-	1	19	-	1	-	-	20		21
311	HORN							0	1	-	-	-	-	1		1
325	ZWETTL							0	2	-	-	-	-	2		2
401	LINZ-STADT							0	1	-	-	-	-	1		1
406	FREISTADT							0	7	-	1	-	-	8		8
407	GMUNDEN	-	2	-	-	-	-	2	27	1	2	1	-	31		33
416	URFAHR-LAND							0	4	-	-	1	-	5		5
417	VOECKLABRUCK							0	2	-	-	-	-	2		2
502	HALLEIN	-	-	-	-	1	-	1	9	-	-	-	-	9		10
503	SALZBURG-LAND							0	6	-	-	-	-	6		6
504	SANKT JOHANN IM PONG							0	6	-	-	-	-	6		6
505	TAMSWEG	-	-	1	-	-	-	1	32	-	-	1	-	33		34
506	ZELL AM SEE							0	21	-	-	1	-	22		22
601	GRAZ-STADT							0	14	1	-	-	-	15		15
602	BRUCK AN DER MUR							0	15	-	-	-	-	15		15
603	DEUTSCHLANDSBERG							0	6	-	-	-	-	6		6
604	FELDBACH							0	1	-	1	-	-	2		2
606	GRAZ-LAND	1	-	-	-	-	-	1	99	4	2	3	-	108		109
607	HARTBERG							0	2	-	-	-	-	2		2
608	JUDENBURG							0	32	-	-	2	-	34		34
609	KNITTELFELD							0	11	-	-	-	-	11		11
610	LEIBNITZ	1	-	-	-	-	-	1	8	-	-	1	-	9		10
611	LEOBEN							0	34	7	2	7	-	50		50
612	LIEZEN							0	4	-	-	-	-	4		4
613	MUERZZUSCHLAG							0	3	-	-	-	-	3		3
614	MURAU	-	1	-	-	1	-	2	62	3	-	1	-	66		68
615	RADKERSBURG							0	1	-	-	-	-	1		1
616	VOITSBERG							0	4	-	-	-	-	4		4
617	WEIZ							0	10	-	-	-	-	10		10
707	LIENZ							0	17	1	2	1	-	21		21
708	REUTTE							0	12	-	-	-	-	12		12
TOTAL		3	4	6	0	2	0	15	610	21	12	23	0	666	0	681
PER CENT		0.4	0.6	0.9	0.0	0.3	0.0	2.2	89.6	3.1	1.8	3.4	0.0	97.8	0.0	100.0

RABIES CASES 1. 1.88 - 31. 3.88

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	-	3	-	-	-	4	11	-	-	-	-	11		15
LX LUXEMBOURG	-	2	4	-	4	-	10	16	-	-	-	-	16		26
NA NAMUR	-	-	-	-	1	-	1	2	-	-	-	-	2		3
TOTAL	1	2	7	0	5	0	15	29	0	0	0	0	29	0	44
PER CENT	2.3	4.5	15.9	0.0	11.4	0.0	34.1	65.9	0.0	0.0	0.0	0.0	65.9	0.0	100.0
LUX LUXEMBOURG															
11 ECHTERNACH							0	-	1	-	-	-	1		1
12 GREVENMACHER	-	-	-	1	-	-	1						0		1
TOTAL	0	0	0	1	0	0	1	0	1	0	0	0	1	0	2
SPA SPAIN															
52 MELILLA (NORTH AFRICA	2	-	-	-	-	-	2						0		2

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. 1.88 - 31. 3.88

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	-	3	-	-	-	-	3	58	-	-	1	-	59		62
02	SOUTH BOHEMIA	-	3	-	-	-	-	3	31	-	1	-	-	32		35
03	WEST BOHEMIA							0	54	-	1	1	-	56		56
04	NORTH BOHEMIA	5	1	-	-	-	-	6	108	3	4	5	1	121		127
05	EAST BOHEMIA	-	2	-	-	-	-	2	24	-	-	-	-	24		26
06	SOUTH MORAVIA	-	1	-	-	-	-	1	21	-	2	-	-	23		24
07	NORTH MORAVIA							0	23	-	-	-	-	23		23
0	CSR	5	10	-	-	-	-	15	319	3	8	7	1	338		353
10	DISTRICT OF BRATISLAV							0						0		0
11	WEST SLOVAKIA	1	2	-	-	-	-	3	9	-	-	-	-	9		12
12	CENTRAL SLOVAKIA	1	4	-	-	-	-	5	36	-	-	1	-	37		42
13	EAST SLOVAKIA	3	4	-	-	-	-	7	39	-	-	1	1	41		48
1	SSR	5	10	-	-	-	-	15	84	-	-	2	1	87		102
TOTAL		10	20	0	0	0	0	30	403	3	8	9	2	425	0	455
PER CENT		2.2	4.4	0.0	0.0	0.0	0.0	6.6	88.6	0.7	1.8	2.0	0.4	93.4	0.0	100.0

DDR GERMAN DEMOCRATIC REPUBLIC

R A B I E S C A S E S

1. 1.88 - 31. 3.88

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	-	2		2
02	COTTBUS	1	4	-	-	2	-	7	28	-	-	3	-	31		38
03	DRESDEN	-	1	-	-	2	-	3	44	-	4	1	-	49		52
04	ERFURT	-	5	-	-	1	-	6	46	1	-	5	-	52		58
05	FRANKFURT/ODER	1	-	-	-	-	-	1	18	1	-	2	-	21		22
06	GERA	1	3	-	-	3	-	7	31	-	-	2	-	33		40
07	HALLE	5	4	-	-	-	-	9	18	-	-	-	-	18		27
08	KARL-MARX-STADT	-	3	2	-	5	-	10	17	-	1	1	-	19		29
09	LEIPZIG	-	1	-	-	-	-	1	8	-	-	-	-	8		9
10	MAGDEBURG	2	2	3	1	1	-	9	38	1	1	3	-	43		52
11	NEUBRANDENBURG	2	1	-	1	-	-	4	26	-	3	-	1	30		34
12	POTSDAM							0	5	-	-	-	-	5		5
13	ROSTOCK	2	4	-	-	-	-	6	27	2	1	-	-	30		36
14	SCHWERIN	-	1	2	1	-	-	4	33	-	1	1	-	35		39
15	SUHL	1	4	-	-	-	-	5	26	-	-	-	-	26		31
TOTAL		15	33	7	3	14	0	72	366	5	11	19	1	402	0	474
PER CENT		3.2	7.0	1.5	0.6	3.0	0.0	15.2	77.2	1.1	2.3	4.0	0.2	84.8	0.0	100.0

DEU FEDERAL REPUBLIC OF GERMANY — RABIES CASES — 1. 1.88 - 31. 3.88

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
010	SCHLESWIG-HOLSTEIN							0						0		0
020	HAMBURG							0						0		0
031	BRAUNSCHWEIG	-	1	2	-	-	-	3	27	-	-	3	-	30		33
032	HANNOVER	1	-	-	1	-	-	2	11	-	-	1	-	12		14
033	LUENEBURG							0	3	-	-	-	-	3		3
034	WESER-EMS							0						0		0
040	BREMEN							0						0		0
051	DUESSELDORF							0						0		0
053	KOELN							0	9	-	-	-	-	9		9
055	MUENSTER							0						0		0
057	DETMOLD	-	1	-	-	-	-	1	6	2	-	-	-	8		9
059	ARNSBERG							0	3	-	1	-	-	4		4
061	DARMSTADT	-	2	2	2	-	-	6	62	1	2	7	-	72		78
062	KASSEL	1	7	2	1	5	-	16	92	2	2	10	-	106		122
071	KOBLENZ	-	-	1	-	9	-	10	19	-	-	1	-	20		30
072	TRIER	1	-	5	-	6	-	12	16	1	-	-	-	17		29
073	RHEINHESSEN-PFALZ	-	-	2	-	1	-	3	12	-	-	-	-	12		15
081	STUTTGART	1	1	-	-	-	-	2	42	4	-	2	-	48		50
082	KARLSRUHE	2	1	1	-	-	-	4	52	1	-	2	-	55		59
083	FREIBURG	-	1	-	-	-	-	1	33	4	1	1	-	39		40
084	TUEBINGEN							0	30	1	1	-	-	32		32
091	OBERBAYERN	1	-	-	1	-	-	2	17	-	-	-	-	17		19
092	NIEDERBAYERN							0	19	-	-	-	-	19		19
093	OBERPFALZ	1	2	-	-	-	-	3	25	1	2	1	-	29		32
094	OBERFRANKEN							0	11	-	-	-	-	11		11
095	MITTELFRANKEN	-	-	-	-	2	-	2	21	1	-	-	-	22		24
096	UNTERFRANKEN	-	1	-	1	4	-	6	58	3	1	3	-	65		71
097	SCHWABEN							0	21	1	2	-	-	24		24
100	SAARLAND							0	9	-	-	1	-	10		10
110	BERLIN (WEST)							0						0		0
TOTAL		8	17	15	6	27	0	73	598	22	12	32	0	664	0	737
PER CENT		1.1	2.3	2.0	0.8	3.7	0.0	9.9	81.1	3.0	1.6	4.3	0.0	90.1	0.0	100.0

FRA F R A N C E — R A B I E S C A S E S — 1. 1.88 - 31. 3.88

LOCATION CODE	NAME	DOMESTIC ANIMALS							WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS	TOTAL		
01	AIN							0	3	-	-	-	-	3		3
02	AISNE	-	-	-	1	-	-	1	8	-	-	-	-	8		9
08	ARDENNES	-	-	1	-	-	-	1	12	-	-	-	-	12		13
10	AUBE	-	-	1	-	-	-	1	46	-	-	-	1	47		48
21	COTE D'OR	-	1	2	-	6	-	9	62	-	-	1	-	63		72
25	DOUBS	-	1	-	-	-	-	1	32	-	1	-	-	33		34
39	JURA	-	1	-	-	-	-	1	30	-	1	-	-	31		32
51	MARNE							0	3	-	-	-	-	3		3
52	MARNE (HAUTE)	1	1	2	-	1	-	5	11	-	-	-	-	11		16
54	MEURTHE ET MOSELLE	2	2	6	-	-	-	10	13	-	-	2	-	15		25
55	MEUSE	-	3	2	-	1	-	6	16	-	1	-	-	17		23
57	MOSELLE	2	-	-	1	-	-	3	10	-	1	-	-	11		14
58	NIEVRE	-	-	-	-	3	-	3	19	1	-	-	-	20		23
60	OISE	-	-	1	-	1	-	2	23	1	-	-	-	24		26
67	RHIN (BAS)	-	3	-	-	1	-	4	22	-	-	-	-	22		26
68	RHIN (HAUT)							0	22	-	2	2	-	26		26
70	SAONE (HAUTE)	-	3	1	-	5	-	9	68	-	-	-	-	68		77
74	SAVOIE (HAUTE)	-	1	-	-	-	-	1	10	1	-	-	-	11		12
77	SEINE ET MARNE							0	27	-	-	-	-	27		27
88	VOSGES	-	1	1	-	1	-	3	13	-	-	-	-	13		16
89	YONNE							0	29	1	-	-	-	30		30
90	TERR.DE BELFORT							0	3	-	-	-	-	3		3
91	ESSONNE	-	1	-	-	-	-	1						0		1
TOTAL		5	18	17	2	19	0	61	482	4	6	5	1	498	0	559
PER CENT		0.9	3.2	3.0	0.4	3.4	0.0	10.9	86.2	0.7	1.1	0.9	0.2	89.1	0.0	100.0

HUN HUNGARY

RABIES CASES

1. 1.88 - 31. 3.88

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	7	-	-	-	-	7		7
02	BARANYA	-	2	-	-	2	-	4	36	-	1	-	-	37		41
03	BACS-KISKUN	1	-	-	-	-	-	1	12	-	-	-	-	12		13
04	BEKES							0	5	-	-	-	-	5		5
05	BORSOD-ABAUJ-ZEMPLEN	1	1	1	-	-	-	3	10	-	-	-	-	10		13
06	CSONGRAD	-	-	-	-	-	1	1	18	-	-	-	-	18		19
07	FEJER	-	1	3	-	-	-	4	22	-	-	-	-	22		26
08	GYOER-SOPRON							0	4	-	-	-	-	4		4
09	HAJDU-BIHAR	1	-	-	-	4	-	5	22	-	-	-	-	22		27
10	HEVES	-	2	-	-	-	-	2	9	-	-	-	-	9		11
11	KOMAROM	2	-	-	-	-	-	2	11	-	-	-	-	11		13
12	NOGRAD	-	2	-	-	-	-	2	11	-	-	-	-	11		13
13	PEST	3	-	2	-	-	-	5	25	-	-	-	-	25		30
14	SOMOGY	1	2	1	-	1	-	5	57	-	-	-	-	57		62
15	SZABOLCS-SZATMAR	1	1	-	-	-	-	2	25	1	-	-	-	26		28
16	SZOLNOK	1	4	1	-	-	-	6	11	-	-	-	-	11		17
17	TOLNA	-	2	2	-	-	-	4	8	-	-	-	-	8		12
18	VAS							0	29	-	-	1	-	30		30
19	VESZPREM	-	1	-	-	2	-	3	18	-	-	-	-	18		21
20	ZALA	-	2	-	-	-	-	2	16	-	-	1	-	17		19
TOTAL		11	20	10	0	9	1	51	356	1	1	2	0	360	0	411
PER CENT		2.7	4.9	2.4	0.0	2.2	0.2	12.4	86.6	0.2	0.2	0.5	0.0	87.6	0.0	100.0

POL POLAND — RABIES CASES — 1. 1.88 - 31. 3.88

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	15	-	-	-	-	15		16
03	BIALA PODLASKA							0	1	-	-	1	-	2		2
05	BIALYSTOK	2	1	2	-	1	-	6	7	-	-	-	3	10		16
07	BIELSKO-BIALA							0	3	-	-	1	-	4		4
09	BYDGOSZCZ	2	1	-	-	-	-	3	8	-	-	-	2	10		13
11	CHELM	-	1	-	-	-	-	1	1	-	-	-	-	1		2
13	CIECHANOW	1	2	-	-	-	-	3	24	1	-	-	3	28		31
15	CZESTOCHOWA							0	11	-	-	-	-	11		11
17	ELBLAG	-	-	1	-	-	-	1						0		1
19	GDANSK	-	1	-	-	-	-	1	10	1	-	-	4	15		16
21	GORZOW	1	-	-	-	-	-	1	9	-	-	1	1	11		12
23	JELENIA GORA							0	19	-	-	-	-	19		19
25	KALISZ							0	19	-	-	-	-	19		19
27	KATOWICE	2	2	-	-	1	-	5	29	-	4	1	-	34		39
29	KIELCE							0	3	-	-	1	-	4		4
33	KOSZALIN							0	10	-	2	1	1	14		14
39	LEGNICA							0	6	-	-	-	-	6		6
41	LESZNO	1	-	-	-	-	-	1	6	-	-	4	-	10		11
43	LUBLIN	-	1	-	-	-	-	1	3	1	-	-	-	4		5
45	LOMZA							0	-	-	-	1	-	1		1
49	NOWY SACZ	-	1	-	-	-	-	1	1	-	-	-	-	1		2
51	OLSZTYN	5	1	6	-	-	-	12	6	-	2	3	1	12		24
53	OPOLE							0	21	-	-	1	-	22		22
55	OSTROLEKA	-	1	-	-	-	-	1	5	-	-	-	1	6		7
57	PILA	1	1	-	-	-	-	2	7	-	-	1	-	8		10
63	POZNAN	-	8	-	-	-	-	8	11	-	1	1	-	13		21
65	PRZEMYSL							0	1	-	-	-	-	1		1
67	RADOM							0	2	-	-	-	-	2		2
69	RZESZOW	-	-	2	-	-	-	2						0		2
71	SIEDLCE							0	2	-	-	-	-	2		2
77	SLUPSK	1	1	-	-	1	-	3	6	-	-	-	1	7		10
79	SUWALKI	-	1	-	-	-	-	1	1	-	-	-	1	2		3
81	SZCZECIN							0	6	-	1	2	1	10		10
83	TARNOBRZEG							0	6	1	-	-	-	7		7
87	TORUN							0	1	-	-	1	-	2		2
89	WALBRZYCH	-	2	-	-	-	-	2	14	-	1	-	-	15		17
93	WROCLAW	-	1	-	-	-	-	1	13	-	-	-	1	14		15
95	ZAMOSC	-	1	-	-	-	-	1	2	-	-	-	1	3		4
97	ZIELONA GORA							0	18	-	1	2	-	21		21
TOTAL		17	27	11	0	3	0	58	307	4	12	22	21	366	0	424
PER CENT		4.0	6.4	2.6	0.0	0.7	0.0	13.7	72.4	0.9	2.8	5.2	5.0	86.3	0.0	100.0

TUR TURKEY

RABIES CASES

1. 1.88 - 31. 3.88

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	8	-	2	-	-	-	10						0		10
002	ADIYAMAN	-	-	1	-	-	-	1						0		1
003	AFYON	4	-	-	-	-	-	4						0		4
007	ANTALYA	3	-	-	-	-	-	3	1	-	-	-	-	1		4
009	AYDIN	6	-	-	-	1	-	7						0		7
010	BALIKESIR	6	-	1	-	-	-	7						0		7
011	BILECIK	4	-	-	-	-	-	4						0		4
014	BOLU	3	-	1	-	1	-	5						0		5
015	BURDUR	1	-	1	-	-	-	2						0		2
016	BURSA	9	-	1	1	-	-	11						0		11
019	CORUM	2	-	1	-	-	-	3						0		3
020	DENIZLI	2	-	-	-	-	-	2						0		2
022	EDIRNE	3	-	-	1	-	-	4						0		4
023	ELAZIG	4	-	-	-	-	-	4						0		4
024	ERZINCAN	1	-	-	-	-	-	1						0		1
026	ESKISEHIR	3	-	-	-	-	-	3						0		3
027	GAZIANTEP	4	-	-	-	1	-	5						0		5
028	GIRESUN	1	-	-	-	-	-	1						0		1
033	ICEL	1	-	-	-	-	-	1						0		1
034	ISTANBUL	8	-	1	-	-	-	9						0		9
035	IZMIR	18	-	1	-	-	-	19						0		19
036	KARS	1	-	-	-	-	-	1						0		1
037	KASTAMONU	1	-	1	-	-	-	2						0		2
038	KAYSERI	11	-	-	-	-	-	11						0		11
039	KIRKLARELI	6	-	-	-	-	-	6						0		6

TUR CONTINUED

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		
041	KOCAELI	7	-	1	-	-	-	8						0		8
042	KONYA	6	-	-	-	-	-	6						0		6
043	KUETAHYA	6	-	1	-	-	-	7						0		7
044	MALATYA	1	-	-	-	-	-	1						0		1
045	MANISA	6	-	-	-	1	-	7						0		7
046	KAHRAMAN MARAS	2	-	-	-	-	-	2						0		2
047	MARDIN	1	-	-	-	-	-	1						0		1
050	NEVSEHIR	1	-	-	-	-	-	1						0		1
051	NIGDE	1	-	-	-	-	-	1						0		1
052	ORDU	8	-	1	-	-	-	9						0		9
053	RIZE	1	-	-	-	-	-	1						0		1
054	SAKARYA	9	-	-	-	-	-	9						0		9
055	SAMSUN	11	-	3	-	1	-	15						0		15
057	SINOP	3	-	-	-	-	-	3						0		3
059	TEKIRDAG	2	-	-	-	-	-	2						0		2
060	TOKAT	-	-	1	-	-	-	1						0		1
061	TRABZON	1	-	-	-	-	-	1						0		1
063	URFA	1	-	-	1	-	-	2						0		2
064	USAK	-	-	1	-	-	-	1						0		1
066	YOZGAT	-	-	1	-	-	-	1						0		1
067	ZONGULDAK	-	-	1	-	-	-	1						0		1
TOTAL		177	0	21	3	5	0	206	1	0	0	0	0	1	0	207
PER CENT		85.5	0.0	10.1	1.4	2.4	0.0	99.5	0.5	0.0	0.0	0.0	0.0	0.5	0.0	100.0

RABIES CASES 1. 1.88 - 31. 3.88

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															
13	CLUJ							0	2	-	-	-	-	2		2
15	COVASNA	1	-	3	-	-	-	4						0		4
21	HARGHITA							0	1	-	-	-	-	1		1
25	MARAMURES							0	1	-	-	-	-	1		1
32	SALAJ	1	-	-	-	-	-	1	1	-	-	-	-	1		2
34	SUCEAVA							0	-	1	-	-	-	1		1
TOTAL		2	0	3	0	0	0	5	5	1	0	0	0	6	0	11
PER CENT		18.2	0.0	27.3	0.0	0.0	0.0	45.5	45.5	9.1	0.0	0.0	0.0	54.5	0.0	100.0
SWI	SWITZERLAND AND LIECHTENSTEIN															
08	GENEVE	-	-	-	-	1	-	1	19	-	-	-	-	19		20
22	VAUD							0	9	-	-	-	-	9		9
23	VALAIS							0	10	-	-	-	-	10		10
26	JURA	-	1	-	-	-	-	1						0		1
TOTAL		0	1	0	0	1	0	2	38	0	0	0	0	38	0	40
PER CENT		0.0	2.5	0.0	0.0	2.5	0.0	5.0	95.0	0.0	0.0	0.0	0.0	95.0	0.0	100.0
YUG	YUGOSLAVIA															
10	SR BOSNA I HERCEGOVIN	-	-	1	-	1	-	2	21	-	-	-	-	21		23
30	SR HRVATSKA	2	-	-	-	-	1	3	120	-	-	-	-	120		123
50	SR SLOVENIJA	6	1	-	-	-	-	7	154	1	-	1	1	157		164
60	SR SRBIJA	4	-	-	-	-	-	4	3	-	-	-	-	3		7
61	SAP VOJVODINA	3	2	1	-	1	-	7	23	-	-	-	-	23		30
TOTAL		15	3	2	0	2	1	23	321	1	0	1	1	324	0	347
PER CENT		4.3	0.9	0.6	0.0	0.6	0.3	6.6	92.5	0.3	0.0	0.3	0.3	93.4	0.0	100.0

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WHO Coll. Centre
Tuebingen / DEU

Rabies Cases Turkey
1st Quarter 1988
207 cases reported

WHO Coll. Centre
Tuebingen / DEU

Rabies Cases Europe
1st Quarter 1988

4394 cases reported

ISL
(rabies free)

NOR
(mainland rabies free)

SWE
(rabies free)

FIN
(rabies free)

DEN
(0)

IRE
(rabies free)

GBR
(rabies free)

USR
(no data)

NET
(0)

BEL
(44)

DEU
(737)

DDR
(474)

POL
(424)

CZE
(455)

FRA
(559)

AUT
(681)

HUN
(411)

SWI
(40)

ROM
(11)

ITA
(0)

YUG
(347)

BUL
(rabies free)

POR
(rabies free)

SPA
(2)
(in North Africa)

ALB
(no data)

GRE
(0)

TUR
(207)

0 50 100 km