

RABIES BULLETIN EUROPE - Vo1. 5/No 3/1981

C O N T E N T S

	Page
1. INTRODUCTION	1
2. RABIES IN EUROPE, 3RD QUARTER 1981	1
2.1 - 2.26 Situation in Individual Countries	2 - 8
3. MISCELLANEOUS	9
3.1 Human to Human Transmission of Rabies via Corneal Transplant - Thailand	9
3.2 Rabies Vaccine and Serological Testing	10
3.3 Scientific Meeting on Animal Rabies, Nancy, June 1981	11
4. RABIES CASE DATA	
4.1 Table 1, Europe, 3rd Quarter 1981	14
4.2 Table 2, Europe, Accumulated Totals of Rabies for the Period January 1st - September 30th, 1981.	15
4.3 Table 3, Europe, Other Animal Species, 3rd Quarter 1981	16
4.4 Tables; European Countries in 3rd Quarter 1981 and the European Part of the USSR in the 2nd Quarter 1981	17 - 32
5. LIST OF CONTRIBUTORS	33 - 34
6. ANNEX 1: Map of Rabies Cases in Europe, 3rd Quarter 1981	
ANNEX 2: Map of Rabies Cases in Turkey, 3rd Quarter 1981	

The RABIES BULLETIN EUROPE is compiled and edited by the

WHO Collaborating Centre for Rabies
Surveillance and Research

Dr. L. G. S c h n e i d e r, Chief
Helen C. J a c k s o n, Assistant Chief
K.-P. H o h n s b e e n, Statistician

at the
Federal Research Institute for Animal
Virus Diseases

D 7400 TUEBINGEN, Postfach 1149
Federal Republic of Germany

Tel. 07071 - 603 332 TELEX: 07 26 28 46

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

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

1. INTRODUCTION

This issue describes the reported rabies incidences in Europe for the third quarter of 1981. The situation is described in general under 2. and in individual countries under 2.1 to 2.26. The rabies case data are tabulated under 4.

The Republic of Ireland has become the 26th country to participate in the WHO Rabies Surveillance System. Ireland has been rabies-free since 1903 and a short account of the measures to maintain this freedom is found under 2.13 on page 5.

Rabies data from Rumania and the European part of the USSR covering the 3rd quarter 1981 have not yet been received. Rabies in the European part of the USSR during the 2nd quarter 1981 is described under 2.26.

There are three reports in the Miscellaneous section. Two human rabies cases both due to rabies infected cornea transplants from the same donor are described in 3.1. 3.2 reports further recommendations of the Immunization Practices Advisory Committee (ACIP) following the licensing of human diploid cell vaccine (HDCV) in 1980 in the USA (see also Bulletin No. 3/1980, pp. 7-11). The meeting on animal rabies held at Nancy, France in June 1981 is reported in 3.3.

The geographical distribution of rabies incidence in Europe during the 3rd quarter 1981 is shown on the maps in the Annex.

2. RABIES IN EUROPE, 3RD QUARTER 1981

Table 1 on page 14 summarises the rabies case data reported to the Centre for the period July - September 1981.

During the 3rd quarter 1981, a total of 4390 rabies cases were diagnosed. There were 3202 cases (72.9%) in wild animals and 1187 (27%) in domestic animals. Comparison with the preceding quarter of this year shows a reduction of 192 cases or 4.2% (Rumanian data for 2nd quarter omitted). Comparison with the 3rd quarter of 1980 when 4138 cases (again omitting Rumania) were reported, indicates an increase of 6.1%.

The percentage involvement of wild animals was not very different to that in the 2nd quarter. 64.8% of all cases were recorded in foxes, 4.4% in mustelids and 2.5% in deer. Among the domestic animals, dog rabies incidence fell from 536 to 380 (11.6% to 8.7%), cat rabies incidence remained fairly constant whereas the incidence in cattle and other farm animals increased by 217 cases (from 379 to 596) or from 8.2% to 13.6% involvement.

Small reductions in rabies incidence were reported from Austria, Czechoslovakia, Italy, Switzerland and Turkey. Yugoslavia reported a reduction of 608 cases since the previous quarter (from 858 to 250) as the first wave of infection in foxes in Slovenia passed a peak of incidence. Increased incidence was seen in Belgium, the German Democratic Republic, the German Federal Republic, France, Hungary, Luxembourg and Poland.

Finland, Portugal, Sweden and the United Kingdom continued to remain free of animal rabies and no cases were reported in Bulgaria, Denmark, the Netherlands, Norway and Spain.

One case of human rabies was registered in the United Kingdom. The infection is thought to have been acquired in India from a dog bite.

Individual country reports are as follows:

2.1 Rabies in Austria (AUT)

by W. Krocza and E. Scharfen

188 rabies cases were diagnosed during the third quarter 1981, about 10% fewer than in the previous quarter. 181 were wild life cases, of which 152 were foxes (80.9% of total), and 7 were in domestic animals.

In the zone of highest rabies density, in Steiermark (Styria), the number of positive cases increased by 21% from 105 cases to 127 cases. The disease crossed from Steiermark into Lower Austria and infected the districts Lilienfeld and Neunkirchen.

Isolated cases occurred in many districts along the border with Yugoslavia and Italy. These included the districts of Leibnitz in southern Styria, and Hermagor, Wolfsberg, Voelkermarkt and Villach Land in Carinthia. Scattered cases were found in the Tyrolean districts of Kufstein, Innsbruck Land and Imst and in the Vorarlberg, Bregenz and Dornbirn each reported two cases.

The Bundeslaender Burgenland, Wien (Vienna) Upper Austria and Salzburg were free of rabies.

2.2 Rabies in Belgium (BEL)

by R. Depierreux

35 rabies cases were diagnosed in Belgium during the 3rd quarter 1981. These were 28 (80%) foxes, 5 cattle, 1 marten and 1 deer. The increase, in comparison with the preceding quarter (23 cases), was observed particularly in September when 19 cases were registered. 9 cases were registered in August and 7 in July.

The tendency of a northward extension of the rabies front, manifested at the beginning of the year in the principally affected zone i.e. the south east of the province of Liège, has not been confirmed during the current quarter.

One case of rabies was reported from the community of Virton in the south of Belgium. In the neighbouring French departments of La Meuse and Le Meurthe and Moselle there has been a recent increase in rabies incidence and this suggests there is a possible threat of a new invasion of rabies into the southern part of Belgium.

2.3 Bulgaria (BUL)

The country remained rabies-free.

2.4 Rabies in Czechoslovakia (CZE)
by Dr. Neumann

During the 3rd quarter 1981 rabies was diagnosed in a total of 225 animals. 17 cases were ascertained in Slovakia and 208 in the Czech Socialist Republic. Rabies in domestic animals was diagnosed in 8 cats, 3 dogs and 1 heifer (young cow) and in wild animals in 203 foxes, 6 mustelids and 4 deer.

In accordance with the expected seasonal fluctuation, rabies incidence during the 3rd quarter decreased in comparison with the 2nd. The reduction did not occur throughout the country. Central Bohemia and South Moravia reported increases, from 8 to 18 and 9 to 21 cases respectively whereas West Bohemia, North Bohemia and Central Slovakia reported reductions, from 77 to 60, 80 to 48 and 17 to 9 cases.

New infections were found in the districts Beroun, Prague-West, Rokycany, Chrudim, Nitra, Liptovský Mikuláš and Michalovce. Recurrent infections were ascertained in the districts Opava and Levice.

No case of rabies was recorded in man.

2.5 Rabies in Denmark (DEN)
by S. Møllgaard

No cases of rabies were registered in the reporting period.

In spite of the gratifying situation, some control activities will be continued until April 1981. Poisoning with strychnine has been carried out in plantations near the Danish-German border and will go on throughout the winter months. Gassing of fox dens in parts of this area is envisaged for March and April 1982.

The northern section of the combat zone (Kolding and surrounding areas) has been cancelled as part of the controlled area.

2.6 Rabies in Germany, Democratic Republic (DDR)

470 cases of rabies were registered in the German Democratic Republic during the 3rd quarter 1981. There were 346 cases (73.6%) in foxes, 12 in mustelids and 19 (4.0%) in deer. Of domestic animal cases, 14 (3.0% of total) were dogs, 24 (5.1%) cats, 21 (4.5%) cattle and 31 (6.6%) sheep.

In comparison with the previous quarter (405 cases) there has been an increase of 16%. The proportion of cases in dogs and cats fell from 16.8% to 8.1% of total cases (68 cases in 2nd quarter and 38 cases in the 3rd) whereas the proportion in cattle and sheep rose from 5.4% to 11.1% (from 22 to 52 cases).

Small increases occurred in the Bezirke Rostock, Potsdam, Frankfurt, Halle, Erfurt, Gera, Dresden and Karl-Marx-Stadt. In Bezirk Schwerin, the number of cases fell from 33 to 16 while in remaining Bezirke there was little change.

2.7 Rabies in Germany, Federal Republic (DEU)

A total of 1320 cases was recorded for the 3rd quarter 1981. There were 1100 cases in wild animals and 220 (6.7%) in domestic animals. 952 cases (72.1% of total) were recorded in foxes. Total incidence increased by 218 or 19.7% in comparison with the 2nd quarter of this year.

The infection in Rheinland-Pfalz continued to move north and westwards, and the incidence increased from 154 cases in the previous quarter to 216. The Kreise Bitburg-Pruem and Daun near the boundary with Belgium were particularly affected. In Nordrhein-Westfalen (76 cases), rabies continued to affect southern and eastern Kreise, particularly Kreis Höxter where incidence increased from 17 cases to 30.

Hessen and Baden-Wuerttemberg both recorded a small increase, from 141 to 166 and 441 to 462, respectively, and the rabies situation was not markedly different to the previous quarter. In Bavaria (325 cases), the number of cases in Oberbayern (south east Bavaria) almost doubled from 67 in the previous quarter to 124, emphasizing the infection in the south of the region. In Unterfranken incidence fell from 35 to 20 and cases were largely restricted to the north (Rhoen-Grabfeld and Bad Kissingen).

2.8 Finland (FIN)

The country remained rabies-free.

2.9 Rabies in France (FRA)

by J. Blancou

A total of 550 rabies cases, of which 406 (73.4%) were in wild animals and 144 (26.2%) in domestic animals, were diagnosed in the 3rd quarter 1981. Among the wild animals, 391 (71.1% of total) were foxes while among domestic animals, 10 (1.8% of total) were dogs, 19 (3.4%) cats and 115 (21%) farm animals.

Comparison with the previous quarter (412 cases) indicates an increase of 33.5%. This rise is significant when the time of year is taken into account. During the 3rd quarter of 1980 only 275 rabies cases were registered, half the number of the present quarter.

The increase is localised in the departments of La Meuse, La Moselle and La Meurthe et Moselle in the north-north east of France and to Doubs on the border with Switzerland. In these four departments, recorded rabies increased from 180 in the 2nd quarter to 313 in the 3rd quarter. The broad rabies front in France however, appears to have remained stable.

2.10 Rabies in Greece (GRE)

3 cases of dog rabies were reported during the 3rd quarter 1981. These are the first rabies cases registered in Greece since the 4th quarter 1979. All three came from the department of Evros near the border with Turkey.

2.11 United Kingdom (GBR)

The country remained free of rabies in animals.

A case of imported human rabies was reported in August. It is understood that the woman victim was bitten by a dog while on holiday in India in early July. As far as it is known post-exposure immunisation was not offered.

Further details of this case will be included in the Bulletin when they become available.

2.12 Rabies in Hungary (HUN)

During the 3rd quarter 1981, 194 rabies cases were reported from Hungary. This is an increase of 59% over the previous quarter when 122 cases were registered. 178 cases or 91.8% of the total were foxes. There were also 5 cases in dogs, 7 in cats, 2 in cattle and 2 in deer.

Rabies incidences were again most common in the northern parts of Hungary. Central and southern parts of the country reported more sporadic incidences. A noticeable concentration of 10 cases was registered in the Komitate of Vas in the vicinity of the boundary with Austria.

The areas reporting the largest increases of incidence were the Komitates Borsod-Abaúj-Zemplén, Szabolcs-Szatmár and Hajdu-Bihar in the north east and Komáron and Veszprem in the north west of the country. Together, they reported 75% (54 cases) of the increased incidence in Hungary.

2.13 Ireland (IRE)

by P. J. O'Connor

Ireland has been free of rabies since 1903.

The programme for the maintenance of this freedom is based on four pieces of national legislation:

- The Customs Consolidation Act, 1876
- The Importation of Dogs and Cats Order, 1929
- The Diseases of Animals Act, 1966
- The Rabies Order, 1976

The importation of dogs, cats and many other mammals into Ireland from all countries with the exception of Great Britain, the Isle of Man and the Channel Islands, is prohibited except under a licence issued by the Department of Agriculture prior to the intended importation. Such an import licence prescribes that the imported animal undergoes a period of at least six months in premises approved for the purposes of small animal quarantine by the Minister for Agriculture. During the statutory period of quarantine all animals are vaccinated twice with an approved vaccine.

Port controls on imports are maintained by Department of Agriculture personnel and customs officers by strict surveillance of all incoming aircraft, passenger and commercial sea traffic.

2.14 Rabies in Italy (ITA)
by A. Mantovani

113 rabies cases were reported in the 3rd quarter 1981 and the trend of progressive spread observed during the 1st and 2nd quarters was maintained. A total of 12 cases was reported for the whole of 1980. In contrast, 288 were reported in the first 9 months of 1981; 55 cases in the 1st quarter and 120 cases in the 2nd quarter.

Two main areas are involved: in the north of Italy neighbouring Austria and Switzerland and in north east Italy neighbouring Yugoslavia.

In Sondrio province (Region of Lombardy), 26 cases (23 foxes, 2 mustelids, 1 deer) in nine municipalities were reported. No new municipality was infected. In the adjacent area of Brescia province (Region of Lombardy), 14 cases from 7 municipalities were reported, 6 of which were newly infected. There were 13 cases of fox rabies and 1 case in a chamois. It is the first time that a chamois has been reported rabid in Italy.

Bolzano province reported 37 cases. Of these, there were 26 foxes, 8 mustelids, 2 deer and 1 domestic cat. 10 municipalities reported rabies and 4 of these were newly infected. Belluno province (Veneto Region) reported 5 rabid foxes all from the municipality of Vigo di Cadore. This was not infected during the previous two quarters.

In the province of Udine (Region Friuli-Venezia-Giulia), 31 foxes from 7 municipalities were found to be rabid. The infection was reported in 3 new municipalities.

2.15 Rabies in Luxembourg (LUX)
by R. Frisch

25 cases of rabies were recorded during the 3rd quarter 1981. There were 8 cases in domestic animals and 17 in wild animals (15 in foxes). Rabies was reported from the north, east and central areas of the country.

A total of 59 rabies cases have been recorded in the first nine months of 1981. In contrast, only 23 cases were registered in the Grand Duchy of Luxembourg during the whole of 1980.

2.16 Netherlands (NET)

The country remained rabies-free.

2.17 Rabies in Norway (NOR)

No case of rabies was reported from the Island of Svalbard during the 3rd quarter 1981.

2.18 Rabies in Poland (POL)

80 rabies incidences were registered in Poland during the 3rd quarter 1981, 13 more than in the previous quarter. There were 15 cases in domestic

animals - 11 cats and 4 cattle, and 65 cases in wild animals - 54 foxes, 4 mustelids, 2 deer, 3 racoon dogs and two squirrels. In contrast to the previous quarter when there were 10 cases of dog rabies and 2 of cat rabies, during this quarter there were no cases in dogs but 11 cases in cats.

Most reported incidences (75%) came from departments in the west or north of Poland.

There has been a marked reduction in rabies incidence during 1981. Whereas in the first 9 months 1980, 681 cases were registered, only 344 have been reported in the same period of 1981.

2.19 Portugal (POR)

The country remained rabies-free.

2.20 Rabies in Rumania (RUM)

No data were available for the reporting period.

2.21 Rabies in Spain (SPA)

Spain remained rabies-free during the 3rd quarter 1981.

2.22 Sweden (SWE)

The country remained rabies-free.

2.23 Rabies in Switzerland (SWI)

by A. I. Wandeler

During the 3rd quarter of 1981, the Swiss rabies diagnostic centre received 1139 animals for examination. 287 (25.2%) of these were positive for rabies, compared with 275 positive for rabies in the previous quarter. 59% were in foxes and 24% in domestic animals. As in previous quarters of 1981, a larger number of animals (48 foxes, 12 mustelids, 1 deer and 1 chamois) were diagnosed histologically in canton Vaud, bringing the total of proven rabid cases to 349 (353 in 2nd quarter 1981).

The epidemiological picture strongly resembles that of autumn 1977. There are cases scattered over the whole range of the Swiss Jura Mountains. From the canton of Vaud (Waadt) in the west, a frontwave is moving eastward, while another wave moves from the eastern cantons westward. In the Engadin (south east Switzerland), the epizootic has crossed the Maloja Pass (1817 m) into the Val Breglia and is now moving towards Lake Como in Italy.

The areas of experimental oral fox vaccination in the cantons Vaud and Valais (Wallis) are still free from rabies.

During the period of observation, 9 persons were bitten by proven rabid animals: 5 by cats, 1 by fox, 1 by marten, 1 by polecat and 1 by a goat.

2.24 Rabies in Turkey (TUR)

Turkey reported a total of 587 rabies incidences for the 3rd quarter 1981. Of these 327 (55.7%) were dogs, 45 (7.7%) cats, 206 (35%) cattle and other farm animals, 4 wolves and 5 cases in house mice.

In comparison with the preceding quarter (638 cases) there has been a reduction in incidence of 51 cases (8%). The number of cases in dogs however fell from 426 in the 2nd quarter to 327 (from 67% to 56% of all cases) whereas cases in cats and cattle increased from 30 to 45, and 139 to 164, respectively. Similar reductions of dog rabies incidence between the second and third quarters of the year occurred in previous years.

The overall geographical distribution of rabies was little changed with the north and west continuing to report the largest number of cases and only sporadic incidence in the south and east. Similarly, noticeable differences were not apparent within most provinces. The exceptions were reductions in the provinces Bursa (from 46 to 25 cases), Istanbul (from 55 to 45) and Sakarya (29 to 19).

2.25 Rabies in Yugoslavia (YUG)

250 rabies cases were registered in Yugoslavia during the 3rd quarter 1981. Comparison with the 2nd quarter of this year shows a remarkable drop of 608 (from 858 cases). There were 229 (91.6%) cases in wild animals and 21 (8.4%) in domestic animals.

The heavy infection in Slovenia was confined to districts near the border with Italy. Most other districts in northern Slovenia continued to report cases but in much smaller numbers than the previous quarter. The frontline did not extend southwards during the 3rd quarter 1981.

A total of 34 cases were reported from 19 districts in Serbia and Croatia.

2.26 Rabies in the Union of Soviet Socialist Republics (USSR)

-2nd quarter 1981-
by V. Pokrovskiy and B. Cherkasskiy

During the 2nd quarter 1981, 98 cases of rabies were registered in the European part of USSR territory. This is less than the previous quarter (142 cases) and also considerably less than during the 2nd quarters of 1979 and 1980 (264 and 178 cases respectively).

The greatest number of rabies cases (44%) was registered on the territory of the Ukrainian Soviet Socialist Republic.

3. MISCELLANEOUS

3.1 Human to Human Transmission of Rabies via Corneal Transplant - Thailand

The third and fourth reported cases of human-to-human rabies transmission by corneal transplant are described below. The temporal association of the 2 recipients' illnesses and the lack of other identified exposure, implicated the transplanted corneas as the source of rabies. As in the earlier transplant-associated cases, the diagnosis of rabies was not suspected before the donor's death. These cases underscore the importance of not using transplant tissue from persons who have died of neurologic illness of unknown cause.

On May 15, 1981, in Thailand, a woman died of rabies, 22 days after receiving a corneal transplant of the right eye. On May 24, 1981, a man also died of rabies, 33 days after receiving a corneal transplant of the right eye. Both recipients had received the corneal grafts from the same donor.

The donor of the corneas was a 16-year-old boy who had died following an unidentified illness. Three days before death, he refused to take food or water for unspecified reasons. He had cold, clammy skin, experienced occasional mental confusion and complained of headache and pain in the right leg. He remained at home until late the night of April 20, 1981, when relatives took him to Siriraj Hospital in Bangkok for treatment. In the outpatient department, he became cyanotic and died that night. Early the next morning both eyes were removed for use as corneal grafts. Relatives of the donor gave no definite history of animal bite for the patient. On autopsy, the forensic pathologist reported that the brain was slightly congested. Subepicardial haemorrhages were seen. Only mucous material without food residue was found in the stomach. No specific pathologic change was found in heart, brain, or lungs.

The first recipient was a 41 year old housewife. Keratoplasty (cornea replacement) was performed on April 23rd. The operation was uneventful and she was discharged from hospital on May 12th, 19 days after the corneal transplant. She became ill on the third day at home (May 15) complaining of tinnitus and malaise and having difficulty swallowing food. At the local health centre she was given 1,000 ml of 5% dextrose in normal saline intravenously. Later the same day, she complained of chest discomfort and showed signs of aerophagia, slight dyspnoea, and insomnia. She was transferred to the Provincial Hospital of Nakhon Pathom. By this time, she had definite signs of aerophobia and hydrophobia. The clinical diagnosis of rabies was made and she was referred to Bamrasnaradul Infectious Hospital. She died within minutes of admission to the hospital. Brain material obtained at autopsy was found positive for rabies by fluorescent microscopic examination and mouse inoculation. No definite history of animal bites could be determined.

The second recipient was a 25 year old man. Penetrating keratoplasty (17 mm) was carried out on April 21 without complications. On May 22 (31 days after receiving the cornea), the patient complained of pain in the right eye and headache radiating to the neck. The corneal graft was then resutured under local anesthesia. In the evening he experienced more pain in the eye, chest discomfort and hyperaesthesia of both hands and feet. During the night his restlessness was associated with delirium and mental

confusion. On May 23 although thirsty, he would not drink and began to show signs of hydrophobia, hypersalivation, aerophagia and aerophobia. He complained of heart palpitations and an itching sensation on the right side of his head. A clinical diagnosis of rabies was made and he was referred to Bamrasnaradul Infectious Hospital for further treatment. He died on May 24, 33 days after the corneal transplant. An autopsy was not permitted. He had neither a history of an animal bite nor of contact with a known rabid animal.

After both recipients of corneal transplants had died of rabies, the donor's brain tissue was re-examined. Sections stained with hematoxylin-eosin stain were found to have Negri bodies in the cytoplasm of a few nerve cells, confirming the diagnosis of rabies for the donor.

The ophthalmologists and forensic pathologists who had been exposed to the patients were vaccinated against rabies with human diploid cell rabies vaccine (Institute Merieux).

(based on report in Morbidity and Mortality Weekly Report, September 25, 1981/Vol.30/No.37).

3.2 Rabies Vaccine and Serological Testing

-Recommendation of the Immunization Practices Advisory Committee (ACIP)-
(see also Rabies Bulletin Europe No. 3, 1980)

Human diploid cell strain rabies vaccine (HDCV) was licensed in the United States in June 1980. At its meeting on October 15, 1981, the Immunization Practices Advisory Committee (ACIP) reviewed data on seroconversion in persons properly vaccinated with HDCV. The data showed that 100% of vaccinees (510/510) had protective antibody levels following pre-exposure treatment while following post-exposure treatment, 99.9% (1,299/1,300) had protective antibody levels. In view of these findings, which corroborate prelicensure data, the ACIP now sees no reason to continue routine serologic testing of persons who receive the recommended pre-exposure or post-exposure treatment regimens of HDCV, i.e., pre-exposure: 3 intramuscular, 1.0-ml doses on days 0, 7, and 21 or 28; post-exposure: rabies immune globulin plus 5 intramuscular, 1.0-ml doses on days 0, 3, 7, 14, and 28.

Furthermore, the ACIP believes that routine serologic testing is no longer necessary following booster doses of HDCV for persons given the recommended primary HDCV vaccination or those shown to have had an adequate antibody response to primary vaccination with duck embryo vaccine (DEV) or other rabies vaccines.

Serologic testing is still recommended for persons vaccinated with DEV or those whose immune responses might be diminished by drug therapy or for other reasons.

(taken from Morbidity and Mortality Weekly Report. October 30th 1981/
Vol.30/No 42).

3.3 Joint CNER - WHO Scientific Meeting on Animal Rabies on the Occasion of the Tenth Anniversary of the Centre National d'Etudes sur la Rage (CNER) Nancy, June 1981

The following summarizes some results and conclusions of four topics of the Scientific Meeting on Animal Rabies.

(1) Antigenic characteristics of rabies virus

Rabies virus strains isolated in Europe, Africa, Asia and America were analysed by monoclonal antibodies and protection tests. Six collaborating laboratories presented results demonstrating that in any geographical area, the strains obtained from humans and terrestrial animals presented a more or less uniform pattern of reactivity with a panel of monoclonal antibodies directed against the nucleocapsid antigen. In addition, experimental animals were in general well protected from infection following vaccination with locally produced rabies vaccines.

Strains isolated from bats in Africa or Europe showed a different pattern of reactivity with the same panel of monoclonal antibodies. The protection afforded by local vaccines was only marginal in animals infected by strains of bat origin.

The significance of the findings is difficult to assess. The fact that some of the 'antigenic variants' were isolated from persons succumbing to rabies infection following bat bites and in spite of a complete anti-rabies treatment, would seem to indicate that some failures of post-exposure prophylaxis may be due to antigenic variation of rabies virus strains.

(2) Prophylaxis of rabies in domestic animals

Inactivated vaccines. Inactivated virus vaccines have excellent stability and can be kept for a long time. The results of serological studies show that they are capable of conferring a high level of immunity in the dog, cat, cow, sheep, fallow deer (Dama dama), mouflon (Ovis musimon) and horse. Tests have established that for some vaccines, a single injection in the dog, cat, cow and sheep can produce immunity lasting three years. Some of these vaccines have been successfully administered in combined forms.

Live vaccines. It has not been possible to re-isolate vaccine virus from cattle or dogs inoculated with multiple doses of live vaccine of the SAD-ERA strain. The serological response was proved satisfactory in cattle, dog, mule and cat. In one test carried out with cats however, satisfactory protection was not shown while the same test performed after vaccination with an inactivated vaccine revealed excellent protection.

(3) Prophylaxis of rabies in wild animals

Two types of vaccine for wild animals were considered: live vaccine (Flury HEP 675 and SAD vaccine) and inactivated vaccine.

Live vaccine

(a) Flury HEP (high egg passage) strain 675 has shown satisfactory immunogenic activity in foxes when given by the oral route, as demonstrated

by seroconversion and resistance to virulent challenge. The application of this strain by bait in a large group of foxes is being studied. The cloned Flury HEP strain 675 proved to be non-pathogenic for all wild animals tested and the excretion of this virus by the salivary glands does therefore not appear to be of epidemiological significance.

(b) The apparently successful halting of rabies in the Rhone Valley in the Valais of Switzerland by vaccination of wild foxes using baits containing live attenuated SAD virus grown in BHK (baby hamster kidney) 21 cells was described. Tetracycline marking indicated that about 60% of the foxes took up the baits. Studies of seroconversion in these populations, because of the technical difficulties involved, did not give conclusive results. In no instance was SAD virus re-isolated from the field.

(c) A field experiment in Switzerland to determine whether oral administration of SAD strain rabies virus to a variety of small animals, mainly rodents, would set up active spread of rabies was described. In one small isolated animal community (an island), there was no evidence that SAD virus became established after a single exposure to a high density of vaccine baits. It was concluded that rabies spread in small mammals was unlikely.

Inactivated vaccine

(a) An account was given of Canadian work in which trials were made using many materials to find the most attractive bait for foxes. Ground meat balls were found to be the best. On average, a fox took 2.8 baits and 80% of baits were taken up over three weeks. By incorporating tetracycline in the baits as a marker and examining the teeth of dead foxes, the percentage of foxes which took up baits was studied. Research on the development of enteric coatings for vaccine tablets was described.

(b) Studies carried out in the Pasteur Institute in Paris in rats to assess the efficacy of live or inactivated rabies vaccines directly deposited through incisions in the stomach, duodenum and intestines showed satisfactory immunity only when the vaccine was put into the intestines. Further studies in cats confirmed the efficacy of the enteric coat for vaccine, enabling it to pass through to the intestine. When the coated vaccine is swallowed (but not chewed) under anaesthesia, immunity is conferred.

(4) The behaviour of rabid wild animals

Information was presented on symptoms and signs of rabies observed in foxes kept in captivity and in foxes free in nature. The behaviour of other rabid animals was also described; a general conclusion was that the main characteristic of a rabid animal is a change in normal behaviour.

The behaviour of rabid foxes is usually characterized by a loss of fear of human beings. They walk during the day among domestic animals, across roads, villages, streets and even enter houses. Conversely, they can stand without moving, hidden in the fields. They generally attack when threatened (by cattle, dogs, humans) but sometimes without any provocation, biting trees, motorcars etc. They often become paralysed between the second and fourth day following the onset of illness, dying by the fifth or sixth day, sometimes in a furious state. A study of the movements and activity patterns of three radio-collared rabies infected foxes was described. Each fox utilized roughly the same activity area after symptoms developed as it

had beforehand. There were individual differences in the activity rhythms but all three were more active during the day than they had been previously.

Rabid badgers behave generally in the same way as rabid foxes, but rarely attacking dogs, cattle or humans. Rabid stone martens often attack and kill poultry, but also attack cats, cattle and man. Rabid deer often have paralysed hind legs, or get injured in throwing themselves against trees.

(based on 'Joint CNER-WHO Scientific Meeting on Animal Rabies on the Occasion of the Tenth Anniversary of the Centre National d'Etudes sur la Rage (C.N.E.R.)' World Health Organisation / Rabies Research / 81.13).

TABLE 1

EUR		EUROPE		3/81		RABIES CASES							1. 7.81 - 30. 9.81			
LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL	
CODE	NAME	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
AUT	AUSTRIA	-	3	4	-	-	-	7	152	13	4	12	-	181		188
BEL	BELGIUM	-	-	5	-	-	-	5	28	-	1	1	-	30		35
BUL	BULGARIA	*						0						0		0
CZE	CZECHOSLOVAKIA		3	8	1	-	-	12	203	2	4	4	-	213		225
DEN	DENMARK	*						0						0		0
DDR	GERMAN DEM. REPUBLIC		14	24	21	-	31	90	346	2	10	19	3	380		470
DEU	FED.REP. OF GERMANY		14	48	118	8	31	220	952	20	64	55	9	1100		1320
FIN	FINLAND	*						0						0		0
FRA	FRANCE		10	19	82	3	29	144	391	6	-	1	8	406		550
GRE	GREECE		3	-	-	-	-	3						0		3
GBR	UNITED KINGDOM	1)						0						0	1	1
HUN	HUNGARY		5	7	2	-	-	14	178	-	-	2	-	180		194
IRE	IRELAND	*						0						0		0
ITA	ITALY		-	1	-	-	-	1	98	6	4	3	1	112		113
LUX	LUXEMBOURG		-	1	7	-	-	8	15	-	2	-	-	17		25
NET	NETHERLANDS	*						0						0		0
NOR	NORWAY	*						0						0		0
POL	POLAND		-	11	4	-	-	15	54	3	1	2	5	65		80
POR	PORTUGAL	*						0						0		0
RUM	RUMANIA	2)														-
SPA	SPAIN	*						0						0		0
SWE	SWEDEN	*						0						0		0
SWI	SWITZERLAND + LIECHT		1	20	31	4	13	69	217	29	22	10	2	280		349
TUR	TURKEY		327	45	164	6	24	578	-	-	-	-	9	9		587
YUG	YUGOSLAVIA		3	10	8	-	-	21	209	-	-	-	20	229		250
TOTAL		380	197	447	21	128	14	1187	2843	81	112	109	57	3202	1	4390
PER CENT		8.7	4.5	10.2	0.5	2.9	0.3	27.0	64.8	1.8	2.6	2.5	1.3	72.9	0.0	100.0

* NO CASES, 1) ACQUIRED IN INDIA, 2) NO DATA.

TABLE 2: ACCUMULATED TOTALS OF RABIES CASES FOR THE PERIOD 1. JANUARY - 30. SEPTEMBER 1981.

EUR		EUROPE		1-3/81		RABIES CASES							1. 1.81 - 30. 9.81			
LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL	
CODE	NAME	DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
AUT	AUSTRIA	4	5	5	-	-	-	14	503	43	11	23	-	580		594
BEL	BELGIUM	2	-	7	-	2	-	11	69	-	1	1	-	71		82
BUL	BULGARIA	*						0						0		0
CZE	CZECHOSLOVAKIA	18	23	2	-	3	-	46	673	6	15	8	3	705		751
DEN	DENMARK	-	-	1	-	-	-	1	2	-	-	-	-	2		3
DDR	GERMAN DEM. REPUBLIC	75	105	37	1	54	1	273	965	7	38	60	5	1075	1	1349
DEU	FED. REP. OF GERMANY	58	138	199	22	99	1	517	3021	82	182	222	21	3528		4045
FIN	FINLAND	*						0						0		0
FRA	FRANCE	29	56	149	10	67	1	312	1169	11	-	2	20	1202		1514
GRE	GREECE	3	-	-	-	-	-	3						0		3
GBR	UNITED KINGDOM	1)						0						0	1	1
HUN	HUNGARY	18	28	5	-	-	-	51	575	1	-	2	1	579		630
IRE	IRELAND	*						0						0		0
ITA	ITALY	-	2	-	-	-	-	2	255	14	12	4	1	286		288
LUX	LUXEMBOURG	-	1	11	1	1	-	14	42	-	3	-	-	45		59
NET	NETHERLANDS	*						0						0		0
NOR	NORWAY	2)						0	-	-	-	-	1	1		1
POL	POLAND	23	28	17	-	-	1	69	233	5	6	16	16	276		345
POR	PORTUGAL	*						0						0		0
RUM	RUMANIA	3)	7	3	7	11	3	32	12	1	-	-	1	14		46
SPA	SPAIN	4)	1	-	-	-	-	1						0		1
SWE	SWEDEN	*						0						0		0
SWI	SWITZERLAND + LIECHT	7	59	47	5	32	-	150	797	64	40	32	2	935		1085
TUR	TURKEY	1116	103	381	10	63	28	1701	2	1	-	-	18	21		1722
YUG	YUGOSLAVIA	17	35	9	-	1	-	62	1609	6	-	-	117	1732		1794
TOTAL		1378	586	877	50	333	35	3259	9927	241	308	370	206	11052	2	14313
PER CENT		9.6	4.1	6.1	0.3	2.3	0.2	22.8	69.4	1.7	2.2	2.6	1.4	77.2	0.0	100.0

* NO CASES, 1) ACQUIRED IN INDIA, 2) ON ISLAND OF SVALBARD, 3) NO DATA FOR 3RD QUARTER, 4) IN NORTH AFRICA.

TABLE 3

EUR		EUROPE			3/81		RABIES CASES 'OTHER ANIMAL SPECIES'							1. 7.81 - 30. 9.81		
LOCATION		OTH. DOM. ANIMALS			OTHER WILD ANIMALS									UNSPEC	TOTAL	
CODE	NAME	DONKEY	PIG	DOMEST RABBIT	WOLF	RACCOON DOG	RACCOON	WILD BOAR	MOUFLON	CHAMOIS	SQUIRREL	HOUSE MOUSE	OTH. SM RODENT			OTHERS
DDR	GERMAN DEM. REPUBLIC	-	-	-	-	-	-	1	2	-	-	-	-	-	-	3
DEU	FED. REP. OF GERMANY	-	-	1	-	-	1	1	-	-	-	-	1	-	6	10
FRA	FRANCE	-	1	-	-	-	-	-	-	-	-	-	-	8	-	9
ITA	ITALY	-	-	-	-	-	-	-	-	1	-	-	-	-	-	1
POL	POLAND	-	-	-	-	3	-	-	-	-	2	-	-	-	-	5
SWI	SWITZERLAND + LIECHT	-	-	-	-	-	-	-	-	2	-	-	-	-	-	2
TUR	TURKEY	12	-	-	5	-	-	-	-	-	-	4	-	-	-	21
YUG	YUGOSLAVIA	-	-	-	-	-	-	-	-	-	-	-	-	20	-	20
TOTAL		12	1	1	5	3	1	2	2	3	2	4	1	28	6	71
PER CENT		16.9	1.4	1.4	7.0	4.2	1.4	2.8	2.8	4.2	2.8	5.6	1.4	39.4	8.4	100.0

AUT

A U S T R I A

R A B I E S C A S E S

1. 7.81 - 30. 9.81

LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL	
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
CODE	NAME															
K1	HERMAGOR	-	-	1	-	-	-	1	2	-	-	1	-	3		4
K4	SPITTAL/DRAU							0	3	-	1	1	-	5		5
K5	VILLACH-LAND							0	2	-	-	-	-	2		2
K6	VOELKERMARKT							0	5	-	-	-	-	5		5
K7	WOLFSBERG							0	1	-	-	-	-	1		1
K9	VILLACH-STADT							0	1	-	-	-	-	1		1
N10	LILIENTHAL							0	8	-	-	-	-	8		8
N14	NEUNKIRCHEN							0	1	-	-	-	-	1		1
N16	SCHEIBBS							0	4	-	-	-	-	4		4
ST1	BRUCK/MUR	-	1	1	-	-	-	2	25	4	-	3	-	32		34
ST5	GRAZ-LAND							0	24	2	-	3	-	29		29
ST7	JUDENBURG							0	1	-	-	-	-	1		1
ST9	LEIBNITZ							0	4	-	-	-	-	4		4
ST11	LIEZEN							0	3	3	1	-	-	7		7
ST12	MUERZZUSCHLAG							0	25	1	-	3	-	29		29
ST15	VOITSBERG	-	1	-	-	-	-	1	16	1	-	-	-	17		18
ST16	WEIZ							0	4	1	-	-	-	5		5
T1	IMST							0	4	-	1	-	-	5		5
T2	INNSBRUCK-LAND							0	5	-	-	-	-	5		5
T4	KUFSTEIN							0	2	-	-	-	-	2		2
T5	LANDECK	-	1	1	-	-	-	2	3	-	1	1	-	5		7
T6	LIENZ							0	7	-	-	-	-	7		7
V2	BREGENZ	-	-	1	-	-	-	1	-	1	-	-	-	1		2
V4	DORNBIRN							0	2	-	-	-	-	2		2
TOTAL		0	3	4	0	0	0	7	152	13	4	12	0	181	0	188
PER CENT		0.0	1.6	2.1	0.0	0.0	0.0	3.7	80.9	6.9	2.1	6.4	0.0	96.3	0.0	100.0

R A B I E S C A S E S															1. 7.81 - 30. 9.81	
LOCATION CODE NAME		D O M E S T I C A N I M A L S						W I L D A N I M A L S						HUMAN CASES	TOTAL	
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
BEL B E L G I U M																
LG LIEGE		-	-	3	-	-	-	3	24	-	-	1	-	25		28
LX LUXEMBOURG		-	-	2	-	-	-	2	4	-	1	-	-	5		7
TOTAL		0	0	5	0	0	0	5	28	0	1	1	0	30	0	35
PER CENT		0.0	0.0	14.3	0.0	0.0	0.0	14.3	80.0	0.0	2.9	2.9	0.0	85.7	0.0	100.0
GBR U N I T E D K I N G D O M																
CLOUCESTER *								0						0	1	1
GRE G R E E C E																
10 EVROS		3	-	-	-	-	-	3						0		3

* ACQUIRED IN INDIA.

CZE

CZECHOSLOVAKIA

RABIES CASES

1. 7.81 - 30. 9.81

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							0	18	-	-	-	-	18		18
02	SOUTH BOHEMIA							0	9	1	-	-	-	10		10
03	WEST BOHEMIA	-	1	-	-	-	-	1	58	-	1	-	-	59		60
04	NORTH BOHEMIA	-	3	-	-	-	-	3	41	-	2	2	-	45		48
05	EAST BOHEMIA	-	1	-	-	-	-	1	3	-	-	-	-	3		4
06	SOUTH MORAVIA							0	19	1	-	1	-	21		21
07	NORTH MORAVIA	1	3	1	-	-	-	5	40	-	1	1	-	42		47
0	CSR	1	8	1	-	-	-	10	188	2	4	4	-	198		208
10	DISTRICT OF BRATISLAV							0						0		0
11	WEST SLOVAKIA							0	2	-	-	-	-	2		2
12	CENTRAL SLOVAKIA	1	-	-	-	-	-	1	8	-	-	-	-	8		9
13	EAST SLOVAKIA	1	-	-	-	-	-	1	5	-	-	-	-	5		6
1	SSR	2	-	-	-	-	-	2	15	-	-	-	-	15		17
TOTAL		3	8	1	0	0	0	12	203	2	4	4	0	213	0	225
PER CENT		1.3	3.6	0.4	0.0	0.0	0.0	5.3	90.2	0.9	1.8	1.8	0.0	94.7	0.0	100.0

DDR

GERMAN DEMOCRATIC REPUBLIC

R A B I E S C A S E S

1. 7.81 - 30. 9.81

LOCATION CODE NAME		D O M E S T I C A N I M A L S						W I L D A N I M A L S						HUMAN CASES	TOTAL	
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
I	ROSTOCK	2	2	3	-	1	-	8	38	-	2	2	-	42		50
II	SCHWERIN	2	1	1	-	-	-	4	12	-	-	-	-	12		16
III	NEUBRANDENBURG	2	2	-	-	-	-	4	31	-	1	2	-	34		38
IV	POTSDAM	-	2	2	-	-	-	4	23	-	1	3	2	29		33
V	FRANKFURT/ODER	-	4	-	-	2	-	6	41	-	2	1	1	45		51
VI	COTTBUS	-	2	-	-	-	-	2	9	-	-	-	-	9		11
VII	MAGDEBURG	1	-	-	-	-	-	1	30	1	-	2	-	33		34
VIII	HALLE	-	1	1	-	-	-	2	20	-	-	1	-	21		23
IX	ERFURT	-	2	2	-	1	-	5	33	1	2	1	-	37		42
X	GERA	1	1	2	-	1	-	5	13	-	-	1	-	14		19
XI	SUHL	1	-	2	-	-	-	3	30	-	2	2	-	34		37
XII	DRESDEN	2	1	1	-	4	-	8	24	-	-	2	-	26		34
XIII	LEIPZIG	-	-	1	-	-	-	1	3	-	-	-	-	3		4
XIV	KARL-MARX-STADT	3	6	6	-	22	-	37	38	-	-	2	-	40		77
XV	HAUPTSTADT BERLIN	-	-	-	-	-	-	0	1	-	-	-	-	1		1
TOTAL		14	24	21	0	31	0	90	346	2	10	19	3	380	0	470
PER CENT		3.0	5.1	4.5	0.0	6.6	0.0	19.1	73.6	0.4	2.1	4.0	0.6	80.9	0.0	100.0

DEU

FEDERAL REPUBLIC OF GERMANY

R A B I E S C A S E S

1. 7.81 - 30. 9.81

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	-	2	-	-	-	-	2	9	-	3	-	-	12		14
020	HAMBURG	-	-	-	-	-	-	0	1	-	-	-	-	1		1
031	BRAUNSCHWEIG	-	1	-	-	-	-	1	15	2	-	-	1	18		19
032	HANNOVER	-	1	-	-	-	-	1	9	1	1	2	1	14		15
033	LUENEBURG	-	-	-	-	-	-	0	8	-	-	-	1	9		9
034	WESER-EMS	-	2	-	-	-	-	2	6	-	-	-	2	8		10
040	BREMEN	-	-	-	-	-	-	0	-	-	-	-	-	0		0
051	DUESSELDORF	-	-	-	-	-	-	0	-	-	-	-	-	0		0
053	KOELN	-	-	2	-	-	-	2	13	1	1	-	-	15		17
055	MUENSTER	-	-	-	-	-	-	0	-	-	-	-	-	0		0
057	DETMOLD	-	1	11	1	5	-	18	14	2	4	4	-	24		42
059	ARNSBERG	-	1	1	-	-	-	2	13	-	-	1	1	15		17
061	DARMSTADT	-	2	5	-	5	-	12	68	1	1	4	-	74		86
062	KASSEL	1	5	3	4	6	-	19	47	-	6	7	1	61		80
071	KOBLENZ	-	1	5	-	2	-	8	55	-	2	4	-	61		69
072	TRIER	2	3	39	2	3	1	50	61	1	3	1	-	66		116
073	RHEINHESSEN-PFALZ	4	-	5	-	-	-	9	21	-	-	1	-	22		31
081	STUTTGART	-	6	1	-	-	-	7	19	1	1	2	-	23		30
082	KARLSRUHE	-	5	-	-	1	-	6	48	-	2	8	-	58		64
083	FREIBURG	4	5	7	-	2	-	18	132	6	11	7	-	156		174
084	TUEBINGEN	2	3	4	-	2	-	11	167	2	5	8	1	183		194
091	OBERBAYERN	-	3	16	-	5	-	24	91	1	6	2	-	100		124
092	NIEDERBAYERN	-	-	-	-	-	-	0	5	-	-	-	-	5		5
093	OBERPFALZ	-	2	1	-	-	-	3	40	-	4	-	-	44		47
094	OBERFRANKEN	-	3	-	-	-	-	3	29	1	3	2	-	35		38
095	MITTELFRANKEN	-	-	-	-	-	-	0	1	-	1	-	-	2		2
096	UNTERFRANKEN	-	1	2	-	-	-	3	17	-	-	-	-	17		20
097	SCHWABEN	-	1	15	1	-	-	17	59	1	9	2	1	72		89
100	SAARLAND	1	-	1	-	-	-	2	4	-	1	-	-	5		7
110	BERLIN (WEST)	-	-	-	-	-	-	0	-	-	-	-	-	0		0
TOTAL		14	48	118	8	31	1	220	952	20	64	55	9	1100	0	1320
PER CENT		1.1	3.6	8.9	0.6	2.3	0.1	16.7	72.1	1.5	4.8	4.2	0.7	83.3	0.0	100.0

FRA

FRANCE

RABIES CASES

1. 7.81 - 30. 9.81

LOCATION		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	1	-	-	-	-	1		1
02	AISNE	1	1	-	-	-	-	2	11	-	-	-	-	11		13
08	ARDENNES	-	-	1	-	1	-	2	5	-	-	-	-	5		7
10	AUBE	-	-	1	-	-	-	1	21	-	-	-	-	21		22
21	COTE D'OR	1	2	4	-	2	1	10	36	1	-	-	2	39		49
25	DOUBS	1	1	1	-	3	-	6	83	-	-	-	1	84		90
39	JURA							0	2	-	-	-	-	2		2
51	MARNE	-	-	-	1	-	-	1	8	-	-	-	-	8		9
52	MARNE (HAUTE)	-	-	1	-	-	-	1	4	-	-	-	-	4		5
54	MEURTHE-ET-MOSELLE	-	4	17	1	2	-	24	61	-	-	-	-	61		85
55	MEUSE	4	3	33	1	11	-	52	41	-	-	-	1	42		94
57	MOSELLE	1	-	19	-	3	-	23	18	-	-	1	2	21		44
60	OISE	-	1	-	-	-	-	1	4	-	-	-	-	4		5
67	RHIN (BAS)							0	3	-	-	-	-	3		3
68	RHIN (HAUT)							0	10	1	-	-	1	12		12
70	SAONE (HAUTE)	-	1	2	-	3	-	6	28	-	-	-	-	28		34
73	SAVOIE							0	2	-	-	-	-	2		2
74	SAVOIE (HAUTE)	-	3	1	-	-	-	4	13	1	-	-	-	14		18
76	SEINE MARITIME							0	3	-	-	-	-	3		3
77	SEINE-ET-MARNE							0	1	-	-	-	-	1		1
88	VOSGES	2	1	2	-	4	-	9	23	3	-	-	1	27		36
89	YONNE	-	2	-	-	-	-	2	4	-	-	-	-	4		6
90	TERR. DE BELFORT							0	9	-	-	-	-	9		9
TOTAL		10	19	82	3	29	1	144	391	6	0	1	8	406	0	550
PER CENT		1.8	3.5	14.9	0.5	5.3	0.2	26.2	71.1	1.1	0.0	0.2	1.5	73.8	0.0	100.0

HUN

HUNGARY

RABIES CASES

1. 7.81 - 30. 9.81

LOCATION		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							0	6	-	-	-	-	6		6
03	BACS-KISKUN	-	-	1	-	-	-	1	9	-	-	-	-	9		10
04	BEKES							0	5	-	-	-	-	5		5
05	BORSOD-ABAU-ZEMPLEN							0	14	-	-	1	-	15		15
06	CSONGRAD	-	1	-	-	-	-	1	6	-	-	-	-	6		7
07	FEJER							0	8	-	-	-	-	8		8
08	GYOER-SOPRON	-	1	-	-	-	-	1	3	-	-	-	-	3		4
09	HAJDU-BIHAR	-	2	-	-	-	-	2	9	-	-	-	-	9		11
10	HEVES	-	1	-	-	-	-	1	8	-	-	1	-	9		10
11	KOMAROM							0	4	-	-	-	-	4		4
12	NOGRAD							0	1	-	-	-	-	1		1
13	PEST							0	16	-	-	-	-	16		16
14	SOMOGY							0	11	-	-	-	-	11		11
15	SZABOLCS-SZATMAR	2	1	1	-	-	-	4	16	-	-	-	-	16		20
16	SZOLNOK	1	-	-	-	-	-	1	9	-	-	-	-	9		10
17	TOLNA							0	4	-	-	-	-	4		4
18	VAS							0	12	-	-	-	-	12		12
19	VESZPREM	-	1	-	-	-	-	1	21	-	-	-	-	21		22
20	ZALA	2	-	-	-	-	-	2	15	-	-	-	-	15		17
TOTAL		5	7	2	0	0	0	14	178	0	0	2	0	180	0	194
PER CENT		2.6	3.6	1.0	0.0	0.0	0.0	7.2	91.8	0.0	0.0	1.0	0.0	92.8	0.0	100.0

ITA ITALY

RABIES CASES

1. 7.81 - 30. 9.81

LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS		
23030	CEPINA VALDISOTTO						0	-	1	-	1	-	2		2
23030	LIVIGNO						0	3	-	-	-	-	3		3
23030	MAZZO DI VALTELLIN						0	-	-	1	-	-	1		1
23030	SERNIO						0	1	-	-	-	-	1		1
23030	VALFURVA						0	1	-	-	-	-	1		1
23034	GROSOTTO						0	1	-	-	-	-	1		1
23035	SONDALO						0	4	-	-	-	-	4		4
23037	TIRANO						0	8	-	-	-	-	8		8
23038	VALDIDENTRO						0	5	-	-	-	-	5		5
25040	CORTENO GOLGI						0	2	-	-	-	-	2		2
25040	INCUDINE						0	1	-	-	-	-	1		1
25040	MONNO						0	5	-	-	-	-	5		5
25048	EDOLO						0	1	-	-	-	-	1		1
25050	TEMU						0	-	-	-	-	1	1		1
25050	VIONE						0	2	-	-	-	-	2		2
25059	VEZZA D'OGGIO						0	2	-	-	-	-	2		2
32040	VIGO DI CADORE						0	5	-	-	-	-	5		5
33040	DRENCHIA						0	4	-	-	-	-	4		4
33040	GRIMACCO						0	11	-	-	-	-	11		11
33040	PREPOTTO						0	3	-	-	-	-	3		3
33040	SAN LEONARDO DEL F						0	3	-	-	-	-	3		3
33040	SAVOGNA						0	6	-	-	-	-	6		6
33046	PULFERO						0	2	-	-	-	-	2		2
33049	SAN PIETRO AL NATI						0	2	-	-	-	-	2		2
39015	SAN LEONARDO IN PA						0	3	-	-	-	-	3		3
39020	CURON VENOSTA	-	1	-	-	-	1	2	2	-	-	-	4		5
39020	GLORENZA						0	1	1	-	-	-	2		2
39020	SLUDERNO						0	1	-	1	-	-	2		2
39020	TUBRE						0	3	-	-	-	-	3		3
39023	LASA						0	3	-	-	-	-	3		3
39024	MALLES VENOSTA						0	3	2	1	2	-	8		8
39026	PRATO ALLO STELVIO						0	4	-	-	-	-	4		4
39028	SILANDRO						0	6	-	-	-	-	6		6
39040	RACINES						0	-	-	1	-	-	1		1
TOTAL		0	1	0	0	0	1	98	6	4	3	1	112	0	113
PER CENT		0.0	0.9	0.0	0.0	0.0	0.9	86.7	5.3	3.5	2.7	0.9	99.1	0.0	100.0

LUX

L U X E M B O U R G

R A B I E S C A S E S

1. 7.81 - 30. 9.81

LOCATION		D O M E S T I C A N I M A L S						W I L D A N I M A L S						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS		
0001	LUXEMBOURG						0	1	-	1	-	-	2		2
0402	CONTERN	-	1	-	-	-	1						0		1
0505	HEFFINGEN	-	-	1	-	-	1						0		1
0507	LINTGEN						0	2	-	-	-	-	2		2
0508	LORENTZWEILER						0	1	-	-	-	-	1		1
0603	CLERVAUX						0	3	-	-	-	-	3		3
0610	WEISWAMPACH						0	1	-	-	-	-	1		1
0702	BETTENDORF	-	-	1	-	-	1						0		1
0710	MEDERNACH	-	-	2	-	-	2						0		2
0713	SCHIEREN						0	1	-	-	-	-	1		1
1101	BEAUFORT	-	-	2	-	-	2	1	-	-	-	-	1		3
1102	BECH						0	2	-	-	-	-	2		2
1104	CONSDORF						0	1	-	1	-	-	2		2
1107	ROSPORT						0	1	-	-	-	-	1		1
1206	MANTERNACH	-	-	1	-	-	1	1	-	-	-	-	1		2
TOTAL		0	1	7	0	0	8	15	0	2	0	0	17	0	25
PER CENT		0.0	4.0	28.0	0.0	0.0	32.0	60.0	0.0	8.0	0.0	0.0	68.0	0.0	100.0

POL

POLAND

RABIES CASES

1. 7.81 - 30. 9.81

LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL	
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
01	WARSZAWA							0	2	-	-	-	-	2		2
05	BIALYSTOK							0	1	-	-	-	-	1		1
09	BYDGOSZCZ							0	1	-	-	-	-	1		1
11	CHELM							0	1	-	-	-	-	1		1
13	CIECHANOW							0	-	-	-	-	1	1		1
15	CZESTOCHOWA	-	1	-	-	-	-	1	4	-	-	-	-	4		5
17	ELBLAG							0	1	-	-	-	-	1		1
19	GDANSK	-	1	-	-	-	-	1	2	-	-	-	-	2		3
21	GORZOW							0	1	-	-	-	-	1		1
23	JELENIA GORA							0	5	-	-	-	-	5		5
29	KIELCE							0	1	-	-	-	-	1		1
33	KOSZALIN							0	3	-	-	-	-	3		3
39	LEGNICA							0	2	-	-	-	-	2		2
41	LESZNO							0	3	-	-	-	-	3		3
43	LUBLIN							0	1	1	-	-	-	2		2
51	OLSZTYN	-	1	2	-	-	-	3	3	1	-	1	4	9		12
57	PILA							0	2	-	-	-	-	2		2
63	POZNAN	-	1	-	-	-	-	1	1	-	-	-	-	1		2
65	PRZEMYSL	-	1	-	-	-	-	1						0		1
67	RADOM	-	1	1	-	-	-	2						0		2
77	SLUPSK							0	-	-	-	1	-	1		1
79	SUWALKI	-	1	-	-	-	-	1	-	-	1	-	-	1		2
81	SZCZECIN							0	8	-	-	-	-	8		8
87	TORUN	-	1	-	-	-	-	1						0		1
89	WALBRZYCH	-	1	1	-	-	-	2	2	-	-	-	-	2		4
93	WROCLAW							0	1	-	-	-	-	1		1
95	ZAMOSC	-	1	-	-	-	-	1	3	1	-	-	-	4		5
97	ZIELONA GORA	-	1	-	-	-	-	1	6	-	-	-	-	6		7
TOTAL		0	11	4	0	0	0	15	54	3	1	2	5	65	0	80
PER CENT		0.0	13.8	5.0	0.0	0.0	0.0	18.7	67.5	3.8	1.2	2.5	6.2	81.2	0.0	100.0

SWI

SWITZERLAND AND LIECHTENSTEIN

R A B I E S C A S E S

1. 7.81 - 30. 9.81

LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL	
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
01	AARGAU							0	8	-	-	1	-	9		9
04	BASEL-STADT							0	2	-	-	-	-	2		2
05	BASEL-LAND							0	2	-	1	-	-	3		3
06	BERN	-	2	-	-	-	-	2	23	4	4	-	-	31		33
07	FREIBURG	-	4	2	1	1	-	8	36	-	2	1	-	39		47
08	GENEVE							0	1	2	-	-	-	3		3
09	GLARUS	-	1	3	-	1	-	5	7	5	1	-	1	14		19
10	GRAUBUENDEN	-	1	9	-	1	-	11	24	4	-	-	-	28		39
12	NEUCHATEL	-	1	1	-	-	-	2	2	3	-	-	-	5		7
15	SCHAFFHAUSEN							0	1	2	-	-	-	3		3
16	SCHWYZ	-	-	-	-	1	-	1	8	3	-	-	-	11		12
17	SOLOTHURN	-	1	1	-	1	-	3	12	-	3	-	-	15		18
18	ST.GALLEN	-	1	-	-	-	-	1	3	1	-	1	-	5		6
20	THURGAU	-	2	1	-	-	-	3	10	-	-	1	-	11		14
22	VAUD	1	2	5	-	5	-	13	55	4	9	4	1	73		86
25	ZUERICH	-	4	6	1	2	-	13	22	1	1	2	-	26		39
26	JURA	-	1	3	2	1	-	7	1	-	1	-	-	2		9
TOTAL		1	20	31	4	13	0	69	217	29	22	10	2	280	0	349
PER CENT		0.3	5.7	8.9	1.1	3.7	0.0	19.8	62.2	8.3	6.3	2.9	0.6	80.2	0.0	100.0

TUR

TURKEY

RABIES CASES

1. 7.81 - 30. 9.81

LOCATION CODE NAME		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS		
001	ADANA	1	2	-	-	-	-	3						0	3
003	AFYON	3	1	3	-	-	-	7						0	7
005	AMASYA	4	-	6	-	1	1	12						0	12
006	ANKARA	27	1	7	-	1	-	36						0	36
007	ANTALYA	2	-	5	1	-	-	8						0	8
008	ARTVIN	1	-	-	-	-	-	1						0	1
009	AYDIN	9	2	11	-	1	-	23						0	23
010	BALIKESIR	4	1	6	-	2	-	13						0	13
011	BILECIK	3	-	1	-	1	-	5						0	5
014	BOLU	9	-	8	-	-	-	17						0	17
015	BURDUR	1	-	-	-	-	-	1						0	1
016	BURSA	10	1	8	1	3	-	23	-	-	-	-	2	2	25
017	CANAKKALE	2	-	1	-	-	1	4						0	4
018	CANKIRI	7	-	3	-	-	1	11						0	11
019	CORUM	5	1	4	-	1	-	11						0	11
020	DENIZLI	12	-	-	1	-	-	13						0	13
021	DIYARBAKIR	1	-	1	-	-	-	2						0	2
022	EDIRNE	6	-	5	1	1	-	13						0	13
024	ERZINCAN	-	-	4	-	-	-	4	-	-	-	-	1	1	5
025	ERZURUM	1	-	-	-	-	-	1						0	1
027	GAZIANTEP	2	-	-	-	-	-	2						0	2
028	GIRESUN	9	-	3	-	-	-	12						0	12
031	HATAY	-	1	-	-	-	-	1						0	1
033	ICEL	1	1	-	-	-	-	2						0	2
034	ISTANBUL	32	8	3	-	2	-	45						0	45
035	IZMIR	45	10	5	-	1	1	62	-	-	-	-	1	1	63
036	KARS	6	-	4	-	-	-	10						0	10
037	KASTAMONU	7	-	2	-	-	-	9	-	-	-	-	1	1	10

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	-	-	-	-	2						0		2
039 KIRKLARELI	4	1	2	-	-	-	7						0		7
040 KIRSEHIR	1	-	1	-	-	-	2						0		2
041 KOCAELI	6	-	4	-	1	1	12						0		12
042 KONYA	3	7	3	-	1	-	14						0		14
043 KUETAHYA	3	-	2	2	-	2	9						0		9
044 MALATYA	1	-	-	-	-	-	1						0		1
045 MANISA	10	1	5	-	6	-	22						0		22
047 MARDIN	3	-	1	-	-	-	4						0		4
048 MUGLA	3	-	1	-	-	-	4						0		4
052 ORDU	15	1	9	-	-	-	25						0		25
053 RIZE	1	1	-	-	-	-	2						0		2
054 SAKARYA	17	-	2	-	-	-	19						0		19
055 SAMSUN	21	3	22	-	1	1	48	-	-	-	-	1	1		49
057 SINOP	6	1	5	-	-	-	12						0		12
058 SIVAS	4	-	-	-	-	-	4						0		4
059 TEKIRDAG	4	-	1	-	-	-	5						0		5
060 TOKAT	2	-	2	-	1	1	6						0		6
062 TUNCELI	1	-	2	-	-	-	3						0		3
063 URFA	1	-	1	-	-	1	3						0		3
064 USAK	2	-	1	-	-	-	3						0		3
066 YOZGAT	8	-	5	-	-	2	15	-	-	-	-	3	3		18
067 ZONGULDAK	-	-	5	-	-	-	5						0		5
TOTAL	327	45	164	6	24	12	578	0	0	0	0	9	9	0	587
PER CENT	55.7	7.7	27.9	1.0	4.1	2.0	98.5	0.0	0.0	0.0	0.0	1.5	1.5	0.0	100.0

YUG

YUGOSLAVIA

RABIES CASES

1. 7.81 - 30. 9.81

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
III/ 16	IVANICGRAD							0	3	-	-	-	-	3		3
III/ 17	DUGO SELO							0	4	-	-	-	-	4		4
III/ 18	VRBOVEC							0	2	-	-	-	-	2		2
III/ 20	DONJA STUBICA							0	1	-	-	-	-	1		1
III/ 23	PREGRADA							0	2	-	-	-	-	2		2
III/ 25	IVANEC	2	-	-	-	-	-	2	3	-	-	-	-	3		5
III/ 28	NOVI MAROF							0	1	-	-	-	-	1		1
III/ 32	DURDEVAC							0	2	-	-	-	-	2		2
III/ 36	GARESNICA							0	2	-	-	-	-	2		2
III/ 38	PAKRAC							0	1	-	-	-	-	1		1
III/ 40	GRUBISNO POLJE							0	1	-	-	-	-	1		1
III/ 41	VIROVITICA							0	1	-	-	-	-	1		1
III/ 50	VALPOVO							0	2	-	-	-	-	2		2
III/ 52	BELI MANASTIR							0	1	-	-	-	-	1		1
V / 1	LJUBLJANA							0	2	-	-	-	-	2		2
V / 2	VRHNIKA	-	1	-	-	-	-	1	3	-	-	-	-	3		4
V / 4	LOGATEC	-	-	5	-	-	-	5	7	-	-	-	-	7		12
V / 7	SEZANA							0	1	-	-	-	-	1		1
V / 11	AJDOVSCINA							0	2	-	-	-	-	2		2
V / 12	NOVA GORICA	-	2	1	-	-	-	3	45	-	-	-	-	45		48
V / 13	IDRIJA							0	12	-	-	-	6	18		18
V / 14	TOLMIN	-	2	-	-	-	-	2	30	-	-	-	6	36		38
V / 15	RADOVLJICA							0	-	-	-	-	1	1		1
V / 17	SKOFJA LOKA							0	27	-	-	-	1	28		28
V / 19	KRANJ							0	1	-	-	-	-	1		1

YUG CONTINUED

LOCATION		DOMESTIC ANIMALS						WILD ANIMALS						HUMAN CASES	TOTAL	
		DOG	CAT	CATTLE	HORSE	SHEEP GOAT	OTHERS	TOTAL	FOX	BADGER	OTHER MUSTEL	DEER	OTHERS			TOTAL
V / 21	DOMZALE							0	-	-	-	-	1	1		1
V / 34	MOZIRJE	-	-	2	-	-	-	2	3	-	-	-	-	3		5
V / 36	TRBOVLJE	1	-	-	-	-	-	1	1	-	-	-	-	1		2
V / 38	SLOVENJGRADEC							0	1	-	-	-	1	2		2
V / 39	RAVNE NA KOROSKE							0	5	-	-	-	-	5		5
V / 40	DRAVOGRAD							0	-	-	-	-	1	1		1
V / 41	RADLJE OB DRAVI							0	6	-	-	-	-	6		6
V / 42	MARIBOR							0	9	-	-	-	1	10		10
V / 44	CELJE	-	1	-	-	-	-	1	2	-	-	-	-	2		3
V / 46	LASKO	-	1	-	-	-	-	1	10	-	-	-	1	11		12
V / 47	SENTJUR PRI CELJ							0	1	-	-	-	1	2		2
V / 48	SMARJE PRI JELSA							0	3	-	-	-	-	3		3
V / 49	SLOV.BISTRICA	-	1	-	-	-	-	1						0		1
V / 50	PTUJ							0	2	-	-	-	-	2		2
V / 55	MURSKA SOBOTA							0	6	-	-	-	-	6		6
VI / 1	BEOGRAD	-	1	-	-	-	-	1						0		1
VI1/ 3	TITEL							0	1	-	-	-	-	1		1
VI1/ 23	ALIBUNAR							0	1	-	-	-	-	1		1
VI1/ 27	NOVA CRNJA							0	1	-	-	-	-	1		1
VI1/ 40	SOMBOR	-	1	-	-	-	-	1	1	-	-	-	-	1		2
TOTAL		3	10	8	0	0	0	21	209	0	0	0	20	229	0	250
PER CENT		1.2	4.0	3.2	0.0	0.0	0.0	8.4	83.6	0.0	0.0	0.0	8.0	91.6	0.0	100.0

USR		UNION OF SOVIET SOCIALIST REPUBLICS (EUROPEAN PART)		R A B I E S C A S E S IN ANIMALS			1. 4.81 - 30. 6.81
LOCATION		D A T E S			T O T A L		
CODE	NAME	1. 4. - 30. 4.	1. 5. - 31. 5.	1. 6. - 30. 6.			
01	RSFSR						
011	REGIONS OF THE NORTH AND THE NORTH-WEST	-	-	-	-		
012	REGIONS OF THE CENTRE	4	2	7	13		
013	REGIONS OF THE NORTH CAUCASUS	-	1	1	2		
014	REGIONS OF THE POVOLJE AND THE URALS	12	4	6	22		
02	THE MOLDAVIAN SSR	-	1	1	2		
03	THE UKRAINIAN SSR	23	10	10	43		
04	THE BYELORUSSIAN SSR	5	2	1	8		
05	THE LITHUANIAN SSR	-	-	1	1		
06	THE LATVIAN SSR	1	1	2	4		
07	THE ESTONIAN SSR	1	1	1	3		
TOTAL		46	22	30	98		

LIST OF CONTRIBUTORS

- AUT AUSTRIA
 Dr. W. K r o c z a
 Director
 Dr. E. S c h a r f e n
 Bundesanstalt für Tierseuchen-
 bekämpfung
 Robert-Koch-Gasse 17
 A-2340 Mödling /Austria
- BEL BELGIUM
 Dr. R. D e p i e r r e u x
 Ministère de l'Agriculture
 -Inspection Vétérinaire-
 18, Bd. de Berlaimont
 B-1000 Bruxelles/Belgium
- BUL BULGARIA
 Dr. N. T. B e l e v
 Directeur Général des Services
 Vétérinaires
 Ministry of Agriculture
 Sofia /Bulgaria
- CZE CZECHOSLOVAKIA
 Dr. M. C a p k a
 Chief Veterinary Officer
 Dr. N e u m a n n
 Federal Ministry of Agriculture
 and Food
 11006 Praha-Tesnov /CSR
- DDR GERMAN DEMOCRATIC REPUBLIC
 Dr. K.-H. L e b e n t r a u
 Ministerrat der Deutschen
 Demokratischen Republik
 Ministerium für Gesundheitswesen
 Hauptabteilung Internationale
 Beziehungen / Abt. Nichtsozia-
 listische Staaten/WHO
 Rathausstr. 3
 DDR 102 Berlin
- DEN DENMARK
 Dr. E. S t o u g a a r d
 Chief Vet. Officer
 Veterinaerdirektoratet
 Frederiksgade 21
 DK-1265 Copenhagen /Denmark
 Dr. S. M ø l l g a a r d
 Senior Veterinary Officer
 Solsortevej 3B
 DK-8210 Aarhus /Denmark
 Dr. J. M u e l l e r
 State Veterinary Serum Lab.
 Bülowsvej 27
 DK-1870 Copenhagen /Denmark
- FIN FINLAND
 Dr. R. B e r g e r
 Chief of Animal Health Division
 Ministry of Agriculture
 and Forestry
 Veterinary Department
 Helsinki /Finland
- FRA FRANCE
 Dr. L. A n d r a l
 Directeur
 Dr. J. B l a n c o u
 Centre d'Etudes sur la Rage
 de Nancy
 B.P. No. 9
 Malzeville /France
- GBR UNITED KINGDOM
 Dr. W.H.G. R e e s
 Chief Veterinary Officer
 Ministry of Agriculture,
 Fisheries & Food
 -Animal Health Division-
 Tolworth Surbiton /Surrey
- GRE GREECE
 Dr. P. N. D r a g o n a s
 General Director
 Veterinary Service
 Ministry of Agriculture
 Hellenic Republic
 2, Acharnon Street
 Athens (102) /Greece
- HUN HUNGARY
 Dr. A. G l ó z i k
 Director of Veterinary Services
 Dr. Laszlo K o l t a i
 Ministry of Agriculture
 Kossuth L. tér 9-11
 Budapest V./Hungary
- IRE IRELAND
 Dr. P. J. O' C o n n o r
 Deputy Director Veterinary Services
 Dr. P. J. R o g a n
 Veterinary Liaison Officer
 Department of Agriculture
 Agriculture House
 Dublin 2/Ireland
- ITA ITALY
 Dr. A. M a n t o v a n i
 Dr. S. P r o s p e r i
 Istituto di Malatti Infettive
 Università degli Studi di Bologna
 Via S. Giacomo 9/2
 I-40126 Bologna /Italy

- LUX LUXEMBOURG
Dr. R. F r i s c h
Directeur de l'Inspect.Général Vét.
Ministère de l'Agriculture
B.P. 1403
Luxembourg
- NET NETHERLANDS
Dr. C.J. V e r m e u l e n
Staatsoezicht op de
Volksgezondheid
Koningin-Julianaplein 3
2595AA s'Gravenhage/Netherlands
- NOR NORWAY
Dr. Reidar V o l l a n
Director of Vet. Services

Dr. H.O. B a c h - G a n s m o
Deputy Director of Vet. Services
Det Kongelige Landbruksdepartement
Akersgt. 42 / Postboks 8007 Dep.
Oslo 1/Norway
- POL POLAND
Dr. Jan K o l a c z
Head of Animal Health Division
Ministry of Agriculture
ul. Wspolna
00-930 Warszawa /Poland

Dr. Danuta S e r o k o w a
Head of Anthroozoonoses Lab.
National Institute of Hygiene
ul. Chocimska 24
00-791 Warszawa /Poland
- POR PORTUGAL
Dr. Mário T e i x e i r a
Ministério da Agricultura e Pescas
Direccao-Geral dos Servicos Pec.
Servicos de Sanidade Veterinaria
Lissabon /Portugal
- RUM RUMANIA
Dr. Ion D i d a
Directeur de la Direction
Sanitaire Vétérinaire
Ministère de l'Agriculture
B-dul Republicii 24
Bucuresti/Rumania
- SPA SPAIN
Dr. M. A. D i a z Y u b e r o
Subdirector General de Sanidad
Animal
Ministerio de Agricultura
Madrid /Espagne
- SWE SWEDEN
Dr. B. H e n r i c s o n
Head of Department
Lantbruksstyrelsen
National Board of Agriculture
Veterinary and Animal
Production Department
Vallgatan 6
S-551 83 Jönköping /Sweden
- SWI SWITZERLAND
Dr. A. I. W a n d e l e r

Dr. F. S t e c k
Vet. Bacteriological Institute
University of Berne
Länggass Str. 122
CH-3001 Berne /Switzerland
- TUR TURKEY
Dr. Hasan E r t a n
General Director of Vet. Serv.

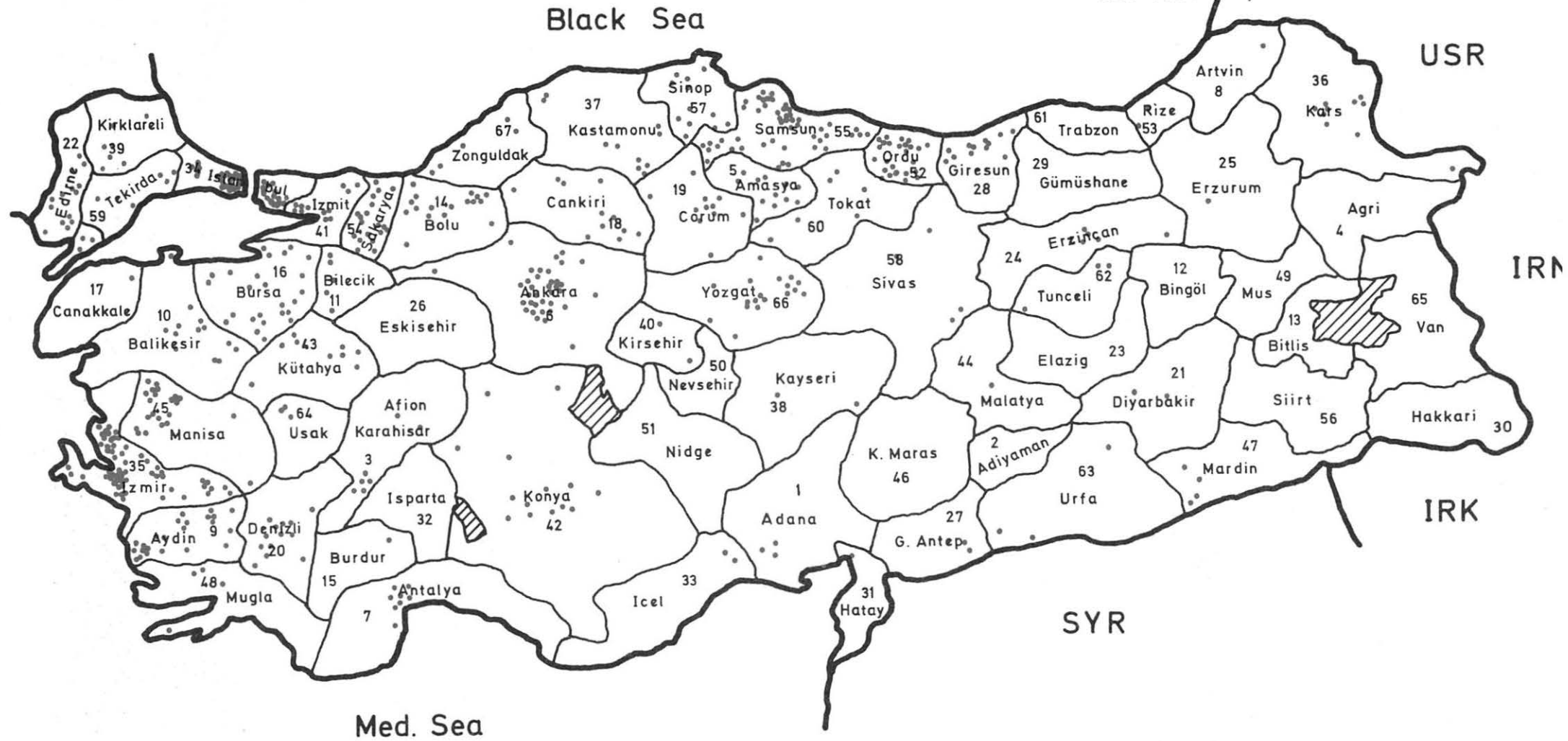
Dr. F. Y ü c e l
Director, Zoonoses Department
Tarim ve Orman Bakanligi,
Ministry of Agricult.
Ankara /Turkey
- USR UNION OF SOVIET SOCIALIST
REPUBLICS
Prof. B. C h e r k a s s k i y
Chief of Zoonoses Laboratory

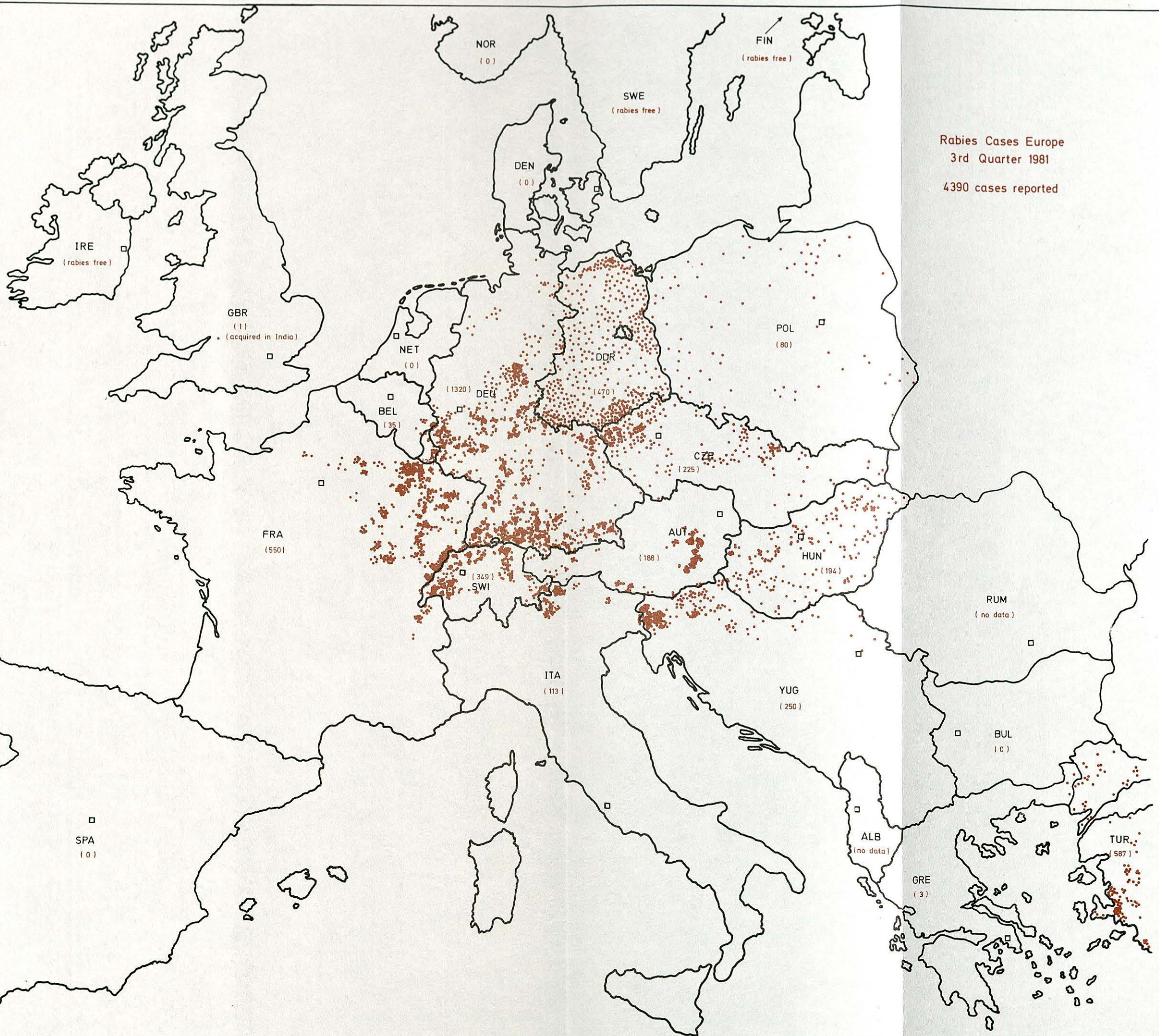
Prof. V. P o k r o v s k i y
Head of Central Institute
Central Institute of Epidemiology
Ministry of Public Health
Moscow /USSR
- YUG YUGOSLAVIA
Dr. M. B u g a r s k i
Head, Veterinary Department
Federal Commitee for Agriculture
Belgrad /Yugoslavia

Dr. Milos P e t r o v i ć
Institut Pasteur
Hajduk Velikova 1
21000 Novi Sad /Yugoslavia

WHO Coll. Centre
Tuebingen / DEU

Rabies Cases Turkey
3rd Quarter 1981
587 cases reported





Rabies Cases Europe
3rd Quarter 1981
4390 cases reported