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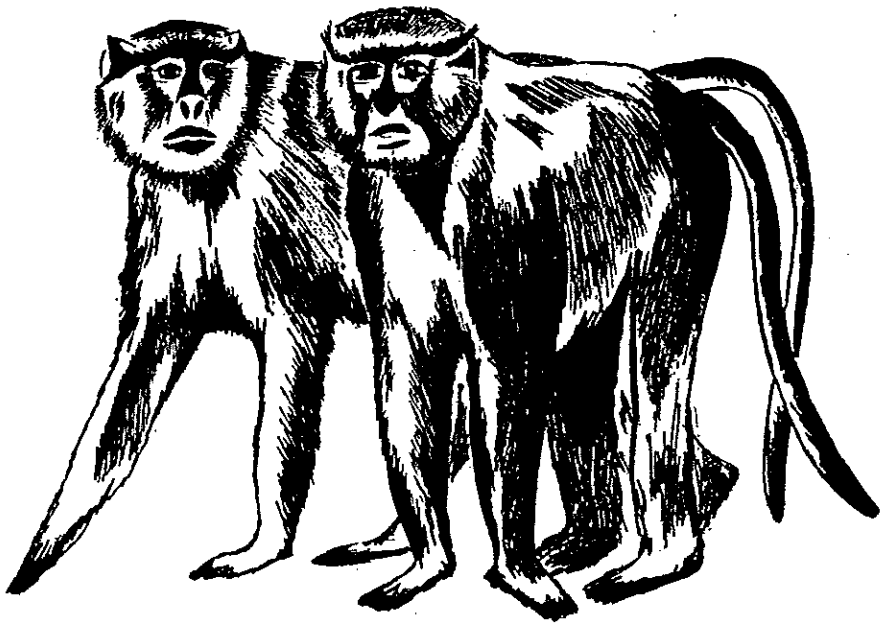
NON-HUMAN PRIMATES IN THE NETHERLANDS

A SURVEY OF IMPORT AND EXPORT, OWNERSHIP AND USE



FRANS A. VAN DER HELM & IGNAAS SPRUIT

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A survey of import and export, ownership and use

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THE INTERNATIONAL PRIMATE PROTECTION LEAGUE (NL)

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INTRODUCTION

Non-human primates are threatened in their existence. About 90 percent of the more than 200 species of primates live in tropical rain forests of Africa, Asia and South America. These forests are being destroyed by man's activities, and with them, their primate populations. One in three species is now considered endangered, vulnerable or rare (Mack & Mittermeier, 1984).
Although habitat loss is the greatest cause for the worldwide decline in primate populations, hunting pressures and trade also impose considerable threats. Especially those species which are already endangered by habitat-destruction can ill afford losses to trade.
The Netherlands is by tradition a country of transport and trade. This includes trading of exotic animals; in the past this trade was very extensive. Around 1970 it was estimated that about half of the international animal trade was in Dutch hands (Bergmans, 1981). The Netherlands used to be, and still is, a major country in primate trade.

Only relatively recently steps were taken to restrict and control trading of endangered animal species. Both the international Washington Convention, or CITES (1973), and the Dutch BUD Act (1977) provide protection for all non-human primate species.
In the Netherlands, all primate imports and exports are registered by the Ministry of Agriculture and Fisheries. This Ministry also supervises the possession of primates and their transfer within Dutch borders. Furthermore, the Ministry of Public Health keeps records of the use that is made of primates by research institutions, which are published in yearly reports.

Between 1977 and 1981, Dutch traders imported an average of 4,125 primates per year, mainly from Indonesia (Crab-eating and Pigtail macaques) and Kenya (Vervet monkeys, Olive, Yellow and Hamadryas baboons). Most of the animals were (re-)exported to research institutions in Belgium, France, Sweden and the USSR (Kavanagh, 1984). During this period, relatively few of these animals were used by Dutch institutions. For most of the research requirements, primates were captive-bred. Since 1983, no primates have been imported from the wild for utilization by Dutch research institutions.
Because of its close resemblance to man, the monkey or ape is used for entertainment. Also, primates may function as an important public attraction and have educational value as a zoo animal. It is used as a model of human beings in experiments, with purposes varying from the production of vaccines to the analysis of social structures. It's value as a breeding animal is not high for nature conservation, because of the low possibilities to return them to nature. Therefore breeding is only important for the exchange between labs and zoos.
In the past many primates were kept as pets. Most of them were kept in the seaports Amsterdam and Rotterdam, especially in the red-light districts of these cities. Nowadays, primate possession is restricted to holders of exemptions.

The aim of this report is to provide a survey of the numbers and species of non-human primates in the Netherlands, and the various purposes for which they are imported or exported, kept or used.
With the extensive data on primate possession and utilisation, the Netherlands have a unique position. This report is interesting for two reasons:

- for the first time a survey is provided on the amounts and different aspects of primate utilisation in a western country.
- the different ways of collecting data by the gouvernment and other institutes cood be evaluated critically and compared with each other.

Over a period of four months, data were collected at both ministries mentioned above.
Further, information was provided by the enforcement authorities that keep primates. Several zoos, laboratories and reception centres were visited.
Finally, existing literature on the subjects of primate trade, possession and utilization has been used to check and evaluate the data.

I. LEGISLATION

In this chapter a survey is given of international and Dutch legislation in respect to trade in endangered animal species, with special attention to primates. The Washington Convention, EC Regulations and the Dutch BUD Act and Import and Export Decree are briefly discussed.
Various countries which are member to the Washington Convention or the EC, have not yet reached full implentation of the regulations below. The following paragraphs describe the regulations as they have been officially formulated.

International and Dutch legislation concerning the utilization of laboratory animals is reviewed in chapter V.

1. The Washington Convention

The Washington Convention had its beginning in 1962, when the Conference on Conservation of Nature and Natural Resources in Modern African States, held in Tanzania, proposed a treaty to curtail poaching and control international marketing or wildlife. In March 1973, the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) was concluded. It is commonly known as CITES or the Washington Convention. CITES came into effect on 1 July 1975, having being ratified by ten countries.
More than ninety countries have acceded to CITES by now; the Netherlands ratified CITES in 1984.
CITES regulates trade in both live and dead animals, and their easily recognisable parts and derivatives. A species (including subspecies or geographically separate populations) can be listed in any of three appendices, depending on its conservation and trade status.
Each member states must submit annual reports to the CITES Secretariat of e.g. the number and type of permits and certificates that were issued. Parties to the Convention meet every two years to update the Appendices and review implementation problems.

Appendix I includes species threatened with extinction which are or may be affected by trade. Trade in Appendix I species is subject to strict regulation and can be authorized only in exceptional circumstances. Both import and export permits are required before species can be traded internationally; the import permit must certify that the specimen is not to be used for primarily commercial purposes. The export permits can only be issued after goverment-designated scientific and management authorities have determined that the trade will not be detrimental to the survival of the wild species, and that the specimen was not obtained in contravention of the laws of the exporting country.
CITES provides that import of Appendix I species shall not be primarily for commercial purposes. There must be principal reasons, such as vital scientific research. In issuing an import permit, the import authorities are not required to investigate the legality of the exportation; merely the purpose of the

import, the qualifications of the recepient and the not primary commercial nature of the shipment.
Appendix I species bred in captivity may be treated as though they were Appendix II species. Specimens qualify to be called "captive-bred" only when the breeding operation concerned is managed in a manner which can reliably produce second generation (F2) offspring and when the operation is registered with the CITES Secretariat.

Appendix II includes all species which may become threatened with extinction if trade is not regulated to avoid over-exploitation, and species with which they may be confused. Export permits are required from their country of origin before import into another country is allowed. The issue of the export permit depends on decisions by the scientific and management authorities that a specimen was obtained legally, and that the trade will not be detrimental to the survival of the species, or its role in the ecosystem.

Appendix III includes species designated by member countries which want to protect their populations of these species. Trade in animals and plants and products from these populations is regulated by a system of export permits similar to those applying to Appendix II species.

CITES also covers re-export of specimens previously imported. In this case a re-export certificate from the goverment of the re-exporting country is required. Before this certificate can be issued, it must be proved that the original importation was in accordance with CITES regulations.
Specimens held in captivity before the provisions of CITES applied to them are exempt from controls if the management authorities issue certificates to that effect.

Primates are divided by CITES into 15 families which include 56 genera and 201 species. With the exception of man, all primate species have been listed in either Appendix I or Appendix II, including the Tree-shrews (Tupaiidae).
Among the species listed on Appendix I are all lemurs (family lemuridae), dwarf- and mouse lemurs (Cheirogaleidae), indri (Indriidae), the Aye-aye (Daubentoniidae), and all gibbons (Hylobatidae) and great apes (Pongidae).

2. EC Regulations 3626/82 and 3418/83

Ten of the twelve EC member states have ratified CITES. The EC intends to remove all border controls between member states by 1992; as CITES is an agreement regulating trade, its application by some member states, but not by others, might be incompatible with the principles of free trade in the Community. A legal framework for uniform application of CITES was provided by EC Council Regulation 3626/82 and Commission Regulation 3418/83. These came into force on 1 January 1984.
The EC regulations broadly reflect CITES, but impose a number of stricter measures. Some of these are mentioned here.

- Import permits are required to import animals, plants or products from all three CITES appendices, not just Appendix I species.
- Certain Appendix II species are given the same degree of protection as Appendix I species. These species are listed by Annex C1.
- Imports of certain Appendix II species, listed as Annex C2 species, are subject to a more severe restriction than under CITES. Imports of these species are only allowed if they do not have a harmful effect on the conservation of the species.
- The sale or display of Appendix I and Annex CI animals for commercial purposes is prohibited.

The EC regulations allow exemptions from the ban on trade in Appendix I and Annex CI species if trade is for scientific research, or if specimens are bred in captivity.
All primate species which are not listed by Appendix I of CITES are listed by Annex C2 of the EC.

3. Legislation in the Netherlands

Two laws have been adopted in the Netherlands to regulate trade in endangered species:
- The Endangered Exotic Animal Species Act (Wet Bedreigde Uitheemse Diersoorten, BUD) of 1977.
- The Import and Export Decree of 25 February 1984, pursuant to the more general Import and Export Act of 1961.

The BUD Act was designed in 1975 and came into force in 1977. At first, this Act related to living animals only. A second step was the enforcement for dead specimens and recognizable parts in 1980.
The BUD Act has only one list, and thus only one degree of protection for the listed animals. The regimen is that of Appendix I species of CITES and includes also a ban of transport and possession of the listed animals.
Import and export are not mentioned as a violation in the BUD Act. The ban on possession, however, in fact also prohibits import and export of listed species.

In order to enforce EC Regulations 3626/82 and 3418/83, it was decided to issue a Royal Decree pursuant to the General Import and Export Act in which import and export of species listed by the EC Regulations could be banned.
This Act has an A- and B-list. List A covers all CITES Appendix I species that are, for various reasons, not listed by the BUD Act plus the Annex C1 species of the EC Regulations. List B covers Appendix II species of CITES, Annex C2 species of the EC Regulations and Appendix III species of CITES.

All primate species are listed by the BUD Act. Unlike CITES, the BUD Act does not consider the tree-shrews (Scandentia or Tupaiidae) as primates; this family is not listed. The tree-shrews are covered by List B of the Import and Export Decree.

In the Netherlands, the management authority as defined by CITES is represented by the Directorate for Nature Conservation,

Environment Protection and Wildlife Management of the Ministry of Agriculture and Fisheries (Afdeling Natuur, Milieu en Faunabeheer van het Ministerie van Landbouw en Visserij).
The Scientific Advisory Commission (Commissie van Advies) functions as the Scientific Authority in the Netherlands. This commission was founded in 1976 to enforce the BUD Act. The members of this commission are experts on different major groups of animals and plants. Also, a zoo director and a representative of the Dutch Pet Trade Organisation sit on this commission.
For the import of animals listed by the BUD Act and Annex C1 a permit is issued only if there is a valid export document from the country of origin.
Import applications are checked by the members of the scientific authority. In general, import permits for Appendix I/Annex C1 species will only be issued for animals that were born in captivity.
Export permits will only be issued for Appendix I/Annex C1 animals that are captive-bred.
For a re-export permit, either a CITES document with the country of origin and number of the permit is required, or an EC document that mentions the country of origin and the number of the export document of that country.
Permits may be withdrawn when the required conditions are not met.
Copies of import and export permits are collected by Customs officers and are returned to the Ministry. Documents that have been used for import and export are collected, and provided to the WTMU for the processing of annual reports (WTMU stands for "Wildlife Trade Monitoring Unit". This unit is part of the International Union for the Conservation of Nature and Natural Resources, or IUCN).

The special enforcement authority concerning CITES, the BUD and Import and Export Act is the General Inspection Service (Algemene Inspectie Dienst, AID) of the Ministry of Agriculture and Fisheries. The AID has three regional ofices. In case of violation of one of the Acts, a legal report is made for the district attorney. When the offence is small, often an administrative settlement is reached, involving confiscation of the animals or plants concerned and a small fine. If the offender does not agree to a settlement, the case is taken into court.
Seized animals are placed in quarantine facilities of a zoo or a private holding station.
When the district attorney has settled the matter and animals are officially confiscated, in case of Appendix II or Annex C2 species the holding station or zoo may sell the animals or keep them. In general, Appendix I and Annex C1 species will remain the property of the state of the Netherlands; they are put on breeding loan, and are accomodated by zoos or private breeders. Primates, however, are always donated to the zoo or holding station concerned.

For animals listed by the BUD Act an administrative system exists. When the Act came into force in 1977, the public was informed that private possession of listed species would be prohibited, unless current owners applied for a licence before the date of enforcement. This procedure was repeated in 1983 before some changes in legislation took place.

All large (and some of the smaller zoos) have been granted a "general exemption", which allows the possession and exchange of animals. The same applies to most research institutions.
The file that applies to zoos, scientific research institutions and private persons is used to control movement of BUD-animals in the Netherlands.

. IMPORT AND EXPORT

Introduction

rld-wide, the number of primates traded from the wild has
clined four-fold during past decades: from well over 200,000 in
e late 1950's to approximately 65,000 in 1979 (Mack &
ttermeier, 1984). The largest demand for primates comes from
dical and other research institutions. To an increasing extent,
imates are captive-bred by research institutions, because it
came difficult and increasingly expensive to obtain primates
om the wild. Furthermore, wild-caught animals often were
flicted by diseases.
e "recycling" of laboratory animals (using the same animal for
re than one project) and the improvement of techniques for
ccine production also resulted in a decrease in imports from
e wild.

e import of wild-caught primates by zoos or zoo-animal traders
the Netherlands has decreased over the past decades. In
neral, zoos have become more engaged in nature conservation
d are in the process of becoming "producers" instead of
onsumers". But also the enforcement of CITES and the national
D Act has had its effect on the trade of primates for zoo-
rposes. Almost all imports or (re-)exports by zoos or zoo-
imal traders concern pre-convention or captive-bred animals.
e BUD Act does not allow private possession of primates, and
s ruled out imports by private persons. The import of wild-
ught primates for circuses or other stictly commercial purposes
s also been banned. Circus imports and exports concern only
ptive-bred or pre-convention primates, which are part of
avelling menageries.

nbers of primates imported from the wild are given in the
pendices I and II. To put these data into their proper
:spective, some general remarks on the mortality of wild-caught
imates during transport are made here.

e export of primates can be divided into four phases:
Capture and storage at the place of capture;
Transport to the exporter;
Air travel to the country of import;
Transport and quarantine in the country of destination.

:h phase causes the animal stress, which endangers its life.
e animal runs the highest risk during phase one and two. In
ieral, not more than 40 to 50% of the originally captured
.mates survive these phases (Belonje, 1984).
e mortality during air transport is probably relatively low,
: actual information is scarce. The International Air
insport Association has laid down "Live Animals Regulations".
vever, these regulations are not always followed, which often
sults in unnecessary high mortality rates. Also, the CITES
:retariat has formulated guidelines for transport and

The commonest causes of death are pneumonia and enteritis, combined with stress and malnutrition (Belonje, 1984).

There is still some international commerce in primate skins, trophies and skulls. The import and export of dead primates, their parts of derivatives to or from the Netherlands, however, is negligible. Occasionally, a pre-convention trophy is imported or exported by a private owner. Such transports are ignored in this chapter; the same applies to the occasional shipment of primate blood samples or sera by research institutions.
Finally, acts by Dutch traders completely outside the Netherlands are left out. They can be of importance, but are impossible to collect. F.e: a Dutch trader was involved in a smuggle of gorilla's from the Cameroun, via Zaire and South Africa to Taipei (McGreal, 1987).
From the Netherlands, legal as well as illegal trade transactions are arranged in which the primates concerned do not pass Dutch borders. Such transactions are not considered here.

In this chapter legal imports and (re-)exports of primates are reviewed, especially those over the years 1984-1987. Special remarks are made on doubtful or illegal imports and exports. Estimations of the extent of illegal trade vary widely; as far as quantative information is available, this shows that the extent is certainly not negligible.

2. Data over the years 1984 and 1985

These data have been derived from the CITES annual reports compiled by the WTMU. They do not include transports that took place within the EC.
The international registration of imports and exports does not seem to be optimal. Over the years 1984 and 1985 there are 106 entries. In 22 cases, other countries reported an import or export. Of these 22 reports, 6 completely correlate with the Dutch record, 4 correlate only partly, and in 12 cases there is no correlation at all. According to the Ministry of Agriculture and Fisheries, the main reason for the difference between Dutch and foreign records lies in the way of reporting. The Netherlands report the number of animals that were actually imported or exported. Other countries (including all European ones) which are members to CITES report on the bases of licences provided. However, not all imports or exports for which licences are issued really take place. Also, sometimes the actual number of animals in the transport is smaller than the number to which the permit applies. In general, the Dutch authorities have a relatively good supervision. Compared to those of other countries, the Dutch records in the EC report on imports and exports during 1984 show the smallest number of possible infringements.
The numbers of specimens that were imported or exported during 1984 and 1985, according to the Dutch records:

	1984		1985	
	App. I	App. II	App. I	App. II
import	14 (2)	1844 (8)	8 (4)	2101 (5)
(re-)export	5 (2)	1276 (12)	24 (8)	1690 (20)

in parentheses: number of species

Table II.1
Import and export data relating to primate specimens over the years 1984 and 1985. A complete list is given in appendix 1.

No wild-caught primates have been imported for use by Dutch research institutions since 1983. During 1984 and 1985, the species imported and re-exported in the largest numbers was the Vervet monkey (Cercopithecus aethiops).
During 1984, 211 Hamadryas baboons (Papio hamadryas hamadryas) and 134 Olive baboons (Papio hamadryas anubis) were imported from Ethiopia and re-exported to France to be used for research purposes. During 1985, 24 Olive baboons were imported from Kenya and re-exported to France or possibly Belgium, for the same purposes.

2.1 Import of wild-caught Western lowland gorillas

The Western lowland gorilla is not critically endangered in the wild at present. However, large portions of gorilla habitat are being cultivated or otherwise developed for use by man. Also, a serious threat comes from the continuing demand for individuals for trade: procuring an infant by poaching may involve killing large numbers of adults. Some zoos continue to offer large sums of money to purchase gorillas. Up to 150,000 dollars are offered for one animal (McGreal, 1987). This, of course, encourages poaching and smuggling.
According to the Captive Breeding Specialist Group (CBSG) of the IUCN, the gene pool of captive lowland gorillas is sufficient to develop a comprehensive breeding program. No animals are required from the wild population.
The disposition of wild orphan gorillas, which appear from time to time in the Congo and the Cameroun, has received much attention in recent times. The CBSG has formulated guidelines to govern the disposition of these animals in the best interest of the conservation of the species. However, the conflicts among conservation of the species as a whole, the welfare of the individuals concerned and the interests of zoos are hard to resolve.

In 1984, a remarkable import took place: seven wild-caught Western lowland gorillas (Gorilla gorilla gorilla) were imported from the Cameroun and placed at Burger's Zoo and Safari, Arnhem. This import has been supported and criticized from different sides, which resulted in controversies on both a national and international level. Summarized, the procedure was as follows, according to the director of Burger's Zoo, A. van Hooff:

In May 1984, the zoo was approached by the IUCN. Accomodation was needed for 7 orphan gorillas (2 male and 5 female), which were taken care of by private persons in the Cameroun. These people had to leave the country and alternative accomodation for the animals was necessary. Some zoos in the United States were interested in obtaining these gorillas, and offered large sums of money. The IUCN, however, did not approve such a transaction.
Burger's Zoo, which did not keep gorillas, asked for time to consider the matter and consulted the European studbook-keeper and the Dutch Management Authorities. Their opinion was positive and the zoo decided to comply with the request of the IUCN. The IUCN paid appropriate expenses to the former owners of the gorillas, concerning the costs of caretaking over seven years.
The group of gorillas arrived at the beginning of June 1984. In time, a large outdoor enclosure was built. The animals are now officially owned and managed by the "Stichting Gorilla", which receives a yearly donation from Burger's Zoo on account of the attractive value of the animals for visitors.

3. Data over the years 1986 and 1987

Data over the years 1986 and 1987 (up until 10 October) were collected from the files of the Ministry of Agriculture and Fisheries. In appendix 2 the number of animals actually transported is given, as reported by the enforcement authorities. During 1986 and 1987, the import and re-export of wild-caught primates concerned mainly the following species: Squirrel monkey (Saimiri sciureus), Rhesus monkey (Macaca mulatta) and Vervet monkey (Cercopithecus aethiops).

The surveys include EC certificates issued to Dutch applicants. In general, EC certificates are used only for (re-)exporting primates, but it is possible to re-import the animals again using the same document. Such possible "re-imports" almost only concern primates which are part of circus menageries. There is no Dutch file of EC certificates issued by the authorities of other countries for export to the Netherlands. Therefore, only the certificates that were (mainly) used for export from the Netherlands are given.

Import and (re-)export permits are not always used. Unused permits that expired before 10-10-87 have been left out of the surveys. If a permit was still valid at the date and had not been used yet (or, strictly speaking, had been used but had not been processed by the authorities), this is indicated with an asterisk in appendix 2. However, this does not apply to the EC certificates. In most cases it is unknown whether these have been used or not.
In general, it may be assumed that all permits and certificates are used, with the exception of import and re-export permits concerning the trading of Vervet monkeys (Cercopithecus aethiops). In fact many of these expire without being used.
It also occurs that the number of specimens in a transport is smaller than the number covered by the documents.

	1984		1985		1986		1987	
	App. I	App. II	App. I	App. II	App. I	App.II	App. I	App. II
import								
total	14 (2)	1844 (8)	8 (4)	2101 (5)	18 (8)	2314 (4)	19 (4)	1741 (6)
capt. bred	7 (1)	9 (2)	8 (4)	2 (1)	12 (6)	4 (3)	14 (3)	1 (1)
% capt. bred	50.0%	0.5%	100.0%	0.1%	66.7%	0.2%	73.7%	0.1%
(re-)export								
total	5 (2)	1276(12)	24 (8)	1690(20)	21 (7)	2565(17)	23 (6)	1673(26)
capt. bred	4 (1)	76 (7)	13 (6)	137(13)	16 (7)	57 (8)	18 (4)	70(11)
% capt. bred	80.0%	6.0%	54.2%	8.1%	76.2%	2.2%	78.3%	4.2%
EC-certificates								
total	no data		no data		35 (10)	71 (8)	24 (6)	103 (14)
capt. bred	collected		collected		29 (9)	70 (7)	20 (6)	81 (8)
% capt. bred					82.9%	98.6%	83.3%	78.7%

Table II.2
Import, export and re-export of primates in the Netherlands and EC-certificates.

In table II.2 an abstract is presented of the trade statistics 1984 - 1987 as given in appendix 1. Some general remarks can be made:

- Trade in Appendix I species.

Of the transactions with Appendix I species the majority is involving reported captive-bred specimens. Only in a few cases wild cought animals were involved. It occurred once that an Appendix I animal was re-exported from the Netherlands. In many cases the animals originated from private owners in- or outside the Netherlands.

- Trade in Appendix II Species.

In contrast to the transactions with Appendix I specimens the trade in Appendix II specimens is quite extensive. From 1984 until 1986 numbers increased from 1844 (8 species) to 2314 (4 species). Remarkable is the very low percentage of captive-bred specimens in these transactions. Cercophiticus aethiops is traded in the largest numbers. The transactions involving this species are representing about 90% of the total number of animals registered in transactions. The transactions concerning wild-cought specimens are also largely dominated by the transit trade of Cercopithecus aethiops (see also II.3.3).

	1986		1987	
	App. I	App. II	App. I	App. II
export + re-export	21	2565	23	1673
total re-export	11	2457	20	1630
% re-export	52.4%	95.8%	87.0%	97.4%
import	18	2314	19	1741
% re-export	61.1%	90.2%	95.0%	106.8%

Table II.3
Import, export and re-export of primates in the Netherlands.

Table II.2 shows that in transactions covered with EC-Certificates in 1986 and 1987 a very high percentage of captive bred specimens was involved. Remarkable is the large proportion of captive-bred Appendix II animals covered with EC-certificates. The sharp contrast between the low percentage captive-bred Appendix II animals covered with im- and export permits and the high percentage covered with EC-certificates is also caused by the trade in Cercopithecus aethiops.

During 1986 and 1987, eight Dutch animal traders or brokers were involved in primate imports and exports. One of them, animal broker John Hop, has an important role in the transfer of primates. This broker is involved in most of the transactions between traders and zoos. Hop has engaged in the transfer of primates since 1982. He has contacts with almost all Dutch research institutions and large zoos, and he also arranges the transfer of primates from reception centres. He guarantees the reliable transfer of surplus animals to bona fide and reputable zoos. This is not for idealistic reasons, but as he puts it himself, for purely commercial ones. Depending on the species concerned, he buys laboratory and zoo animals, gets them for free, or is paid for taking them over and placing them. Hop has many contacts with large zoos abroad, especially in the East bloc. In particular "Zoo Tirgoviste" in Romania receives considerable numbers of primates of different species. This is explained by the fact that this zoo is relatively new; also, this zoo transfers received animals to another Romanian zoo, "Caldaras". The main reason for institutions and zoos for transferring animals via Hop is that the destination of the animals is sound.

Table II.4
Animal dealers or brokers in primates (1986/1987):

- Van der Bijl Pet Farm B.V., Almere Haven.
- G. van den Brink B.V., Soest.
- Eurobird Zoo (Q. van Dijk), Oisterwijk.
- Europe B.V. (Hartelust en Co.), Tilburg.
- Jabria (van den Brink) B.V., Hierden.
- John Hop Zoo Animal Brokers, Ermelo.
- Man in 't Veld, Apeldoorn.
- John Rens Zoo Animal Brokers, Wassenaar.

Negative publicity concerning the disposal of surplus animals is avoided.

3.1 Wild-caught Squirrel and Rhesus monkeys

During 1987, permits were issued for the import of 5, and re-export of 20 Squirrel monkeys from Guyana. By 10-10-87, 10 animals had actually been exported. In the same year, 86 Rhesus monkeys were imported from Burma. By 10-10-87, 136 had been exported, a permit for the re-export of another 52 animals was still valid.
These figures do not coincide. The conflicting data in the import and export surveys may be accounted for by errors or misinterpretations during data collection, incomplete filing by the Ministry, or errors made by the enforcement authorities.

3.2 Chimpanzees from Cuba

During 1987, the trade business Eurobird (managed by Q. van Dijk, a member of the Scientific Advisory Commission) imported chimpanzees from Cuba, which were supposed to have been bred by Havana Zoo. From 27 March until 25 September, the management authorities issued several import permits; by 10 October, 5 animals had been imported, and permits were valid for the import of another 4. After this, 2 animals were actually imported.
The chimpanzees were to be re-exported to the USSR and Japan. By 10 October, 3 animals had been exported to Prodintorg, Moscow and re-export permits were valid for the re-export of a total of 10 animals to Aritake Chojutten Co., Tokio. According to information received from Japan, 5 or more chimpanzees had indeed been imported during August and September.
It is very likely that the export permits issued by Cuba were not correct. There are reasons to doubt the Cuban origin of the animals and the status "captive bred". There is a possibility that the chimpanzees were smuggled from Angola by Cuban military personnel.

3.3 Transit trade of Vervet Monkeys

The Netherlands play an important role in the trade of Vervet monkeys (Cercopithecus aethiops) for research purposes. Between July 1977 and September 1982, 12,433 animals were imported by three different traders (Belonje, 1984). Most of these animals were re-exported again. All specimens are imported from Kenya. Re-exports to Hungary, Poland, Czechoslovakia and Israel occur, but the large majority of the animals are transported to the USSR.

	import	(re-)export	% of total import App. II spec.	% of total export
1984	1486	1189	81%	93%
1985	1925	1395	92%	82%
1986	2310	2486	99%	97%
1987	1345*	1055*	77%	63%

*: On the 10th of October, unused permits for the import of 300 and re-export of 285 animals were valid.

Table II.5
Trade in Vervet monkeys (Cercopithecus aethiops).

According to the Minstry, the Soviet authorities have declared that the Vervet monkeys are used for the production and testing of poliomyelitis vaccine. It is unlikely that they are used for research into chemical warfare, as has been suggested by Dutch animal welfare groups.
According to the IPPL, it is possible that the animals are "stored" in large groups. This idea is based on the assumption that the USSR (a country without wild primates) anticipates a definite closing of primate trade from the wild. The Research Institute at Sukhumi is one of the biggest Primate Centre's and has more then 7,000 primates of different species.

4. Illegal import and export

According to data provided by the AID (see chapter I), about 10 primates have been confiscated by this service from May 1986 until April 1988, because they were being imported (ca. 9 animals) or exported (1 animal) without the required documents.
According to the Police of district Zeist, there are two major routes used for illegal import and export:

1. From March 1986 until February 1988 about two hundred "small South-American monkeys" have been imported illegally by road from Lissabon (Portugal) via Belgium. The animals are smuggled from Brazil and are probably wild-caught. From the Netherlands, the animals are exported to the Federal Republic of Germany.

2. A pet shop keeper at Haarlem sometimes offers primates for sale, which have been imported illegally from Marseille (France) via Belgium.
At the time this report was written the traders involved had not yet been caught in the act and more detailed information was not available.

III. PRIVATE POSSESSION

1. Introduction

In the Netherlands, many primates were kept as pets before the BUD Act was enforced in 1977 (see chapter I). Reliable data about private possession in the years before enforcement of the BUD Act do not exist. Magazine and newspaper articles in the mid and late 1970's mention "tens of thousands" privately owned monkeys in the Netherlands; "seven thousand" in Amsterdam alone. These numbers certainly are exaggerated. They indicate however, that private possession was considerable.
It hardly needs saying that primates do not make appropriate pets from conservation, ethical or practical viewpoints. Over the years, many specimens have been offered by their owners to reception centres (see chapter VII), zoos and even laboratories.
The BUD Act prohibits the keeping of listed animals as pets. The Scientific Advisory Commission considers private persons who study or breed a particular species as a separate category of owner, for their hobby may contribute to the knowledge or conservation of the species concerned.

This chapter discusses the present possession of primates that were already kept at the time of enforcement of the BUD Act. Further, a survey is given of collections for which exemptions were issued after enforcement of the Act.
Finally, recent confiscations of illegally kept primates are reviewed.

2. Article XII Primates

Article II of the BUD Act prohibits private possession of listed species. Article XII of the Act provides that this prohibition does not apply to animals, for which it can be demonstrated to the authorities they have been acquired before the Act was enforced. Private persons who reported before enforcement of the Act that they had listed animals in their possession, were granted an exemption for holding these so-called "article XII animals". Such an exemption obliges the holder to report each death or birth occuring in his or her collection.
The Ministry of Agriculture and Fisheries keeps an extensive file that applies to article XII animals. It is unknown to what extent the possession of animals was reported by their owners at the time. Also, an inventory of species and numbers has never been made; it is unknown how many exemptions apply to primates.
Although legally responsible to report the death or transfer of article XII animals, probably only a very small minority of private owners really do so. It is assumed by experts that the possession of article XII primates by now is negligible. Most animals will have died or have been transferred to reception centres or zoos on reaching maturity. However, there are owners that kept their animals for a considerable time, in some cases up until now.

Within the scope of this report, a small sample was taken from the still valid exemptions. This consisted for the larger part

of the exemptions issued to inhabitants of Amsterdam. The sample contained exemptions for 40 primates, divided over 23 owners. The species are often described globally: galago (1 time), marmoset (18), Spider monkey (1), capuchin (2), Squirrel monkey (3), mangabey (1), Crab-eating macaque (6), gibbon (3), chimpanzee (4), and "monkey" (1). The Crab-eating macaques were divided over the largest number of owners (5).
Estimations of the number of primates kept in Amsterdam in the late 1970's reached much higher numbers, so it is obvious that not all primates were reported to the authorities.

3. Exemptions issued after enforcement of the BUD Act

When article XII primates have produced offspring, this must be reported to the authorities. A new exemption is issued to the owner, applying to the article XII animals and their offspring. Also, an exemption is needed for acquiring and keeping new animals.
Table III gives a survey of exemptions for private and semi-private ownership that were issued since enforcement of the BUD Act, and which were still valid at the end of 1987. "Semi-private" possession is a residual category between private and small zoo collections. It refers to recreation centres, museums, nursery homes and camping sites.
The table provides a picture of present possession, with the exception of non-reproducing article XII animals. However, the number of animals might be somewhat smaller as indicated in table III, for possibly not all of the transfers or deaths of the animals are reported by their owners.

It can be inferred from table III that private collections vary widely in extent. From one animal, presumably kept as a pet, to collections that come close to that of a small zoo. The exemptions apply to a total of 155 animals. Species kept in the largest number (25) are marmosets (Callithrix spec.) and Squirrel monkeys (Saimiri sciureus), but also capuchins (Cebus spec.) and Crab-eating macaques (Macaca fascicularis) are kept in relatively large numbers (resp. 21, 19).

Most collections originate from the possession of primates prior to enforcement of the BUD Act. But not all present owners already kept primates in 1977. Some persons received a few primates from zoos in later years. According to the Ministry, these often were sick animals. In judging whether the particular person can meet the demands concerning care and housing of the animals, the Ministry trusts that the zoos involved are careful enough.
The owners of the larger private collections sometimes exchange animals with each other. Occasionally, they arrange breeding loans with the large zoos.

4. Illegal Possession

From May 1986 until April 1988 the AID (see chapter I) has confiscated 9 primates, because their owners did not have an exemption. Because the AID has to observe secrecy, this service could not provide more detailed information. The AID inspectors

estimate the number of primates being kept illegal at a few dozens. On the other hand, this is a rather conservative estimate (see chapter II.4). According to the staff of the primate reception centres (see chapter VII) relatively many primates are imported illegally, especialy from Belgium.

semi-private collections	primate species	total	
	new world monkeys	5	
A.	2 Cebus apella	2	
B.	3 Callithrix jacchus	3	
	old world monkeys	19	
C.	3 Macaca fascicularis	3	
D.	4 Macaca fascicularis	4	
E.	4 Macaca fascicularis	4	
F.	8 Macaca fascicularis	8	
private collections			
	prosimians	15	
1.	12 Galago spec.	12	
2.	1 Galago spec.		
	2 Galago senegalensis	3	
	new world monkeys	89	
3.	1 Aotus trivirgatus	1	
4.	3 Cebus spec.	3	
5.	5 Cebus spec.	5	
6.	6 Callithrix jacchus	6	
7.	1 Saimiri sciureus		
	2 Saimiri s. boliviensis		
	2 Callithrix jacchus	5	
8.	1 Saguinus oedipus		
	1 Callithrix jacchus		
	3 Callithrix spec.	5	
9.	2 Callithrix jacchus		
	22 Saimiri sciureus	24	
10.*	2 Saguinus oedipus		
	3 Aotus trivirgatus		
	11 Callithrix jacchus		
	11 Cebuella pygmaea		
	13 Cebus apella	40	
	old world monkeys	45	
8.	3 Macaca fascicularis	3	(6)
9.	1 Cercopithecus aethiops	1	(25)
11.	1 Macaca fascicularis	1	
12.	1 Macaca nemestrina	1	
13.	2 Macaca fascicularis	2	
14.	2 Cercopithecus aethiops	2	
15.	8 Cercopithecus nictitans	8	
16.	10 Macaca fascicularis	10	
17.	3 Macaca fascicularis		
	3 Cercocebus agilis		
	11 Cercopithecus aethiops	17	
	apes	6	
10.*	4 Hylobates lar	4	(44)
18.	1 Hylobates spec.	1	
19.	1 Pan troglodytes	1	
	TOTAL	179	

Table III
Exemptions for (semi-)private possession, october 1987.
"Semi-private" collections refers to recreation centres, museums, nursery-homes and camping sites.

*: per 15-08-1985; 2 Hylobates lar and 4 Cebus apella had been put onbreeding loan to respectively "Noorder Dierenpark Emmen" and "Apenheul". These animals are not listed in this table.
Source: files of the Ministry of Agriculture and Fisheries.

IV. ZOOS

1. Introduction

In past decades, zoos in general have aimed more and more towards education, breeding and conservation. Most zoos share the view that the days of "postage stamp" collections should be over. It is thought better that each zoo restricts itself to a relatively small number of species, which are represented by more specimens than was customery in the past. This benefits both the captive propagation of species and the educational value of the collection.
The general trend is towards "fewer species and larger groups". However, this is a process which takes time (De Waal, 1987). But in general, this process should have had its effects on the composition and extent of primate collections.

In this chapter, a distinction is made between "large zoos" and "smaller zoos". The designations are arbitary: they follow the way in which, in common parlance, the particular zoos are referred to.
Many of the small animal parks are extentions of restaurants or recreation grounds. Others were originally show grounds of animal traders. Some of the small zoos have (or used to have) a rather bad name as far as knowledge, caretaking of the animals or the maintenance of the enclosures are concerned. Others, however, have a better name and are not solely directed at recreation, but also at education and breeding.

Nine zoos belong to category "large":

1) Dierenpark Amersfoort (Amersfoort)	AME
2) Natura Artis Magistra (Amsterdam)	AMS
3) De Apenheul (Apeldoorn)	APE
4) Burgers' Zoo en Safari (Arnhem)	ARN
5) Het Noorder Dierenpark or Emmen Zoo (Emmen)	EMM
6) Safaripark Beekse Bergen (Hilvarenbeek)	HIL
7) Ouwenhands Dierenpark (Rhenen)	RHE
8) Diergaarde Blijdorp (Rotterdam)	ROT
9) Dierenpark Wassenaar (Wassenaar)	WAS

This last zoo was closed down in 1985, but exists still as a breeding centre.

There are nine smaller zoos which exhibit primates:

1) Avifauna (Alphen aan de Rijn)	ALP
2) Dierenpark De Vleut (Best)	BES
3) Kasteelpark Born (Born)	BOR
4) Dierenpark De Brug (Eerbeek)	EER
5) Animali (Eindhoven)	EIN
6) Dierenpark De Achterste Molen (Epe)	EPE
7) Gulperberg Panorama (Gulpen)	GUL
8) Vogelpark Oisterwijk (Oisterwijk)	OIS
9) Plaswijckpark (Rotterdam)	PLA

Another three small zoos possessed primates some time ago. They are not mentioned in this report.

The Ministry of Agriculture and Fisheries has granted a general exemption to some of the zoos (see chapter I). Often this is

felt as an acknowledgement of the quality of the zoo. The background reason, however, is of a more practical nature: the exemption obliges the zoo to provide a quarterly survey, which enables better control and supervision.
It sometimes occurs that the General Inspection Service comes across animals in a zoo which were not reported to the Ministry. In such cases sometimes exemptions are provided after the purchase took place.

2. The present primate collections

The present primate collections are presented in table IV.1.
The species of which the most specimens are kept are the Bolivian squirrel monkey (188 specimens), Hamadryas baboon (150) and Rhesus monkey (more than 75).
Other species that are kept in numbers larger than 50 are the Ring-tailed lemur, Cotton-top tamarin and chimpanzee. The species represented in the largest number of collections are the Lar gibbon (7 zoos), Common marmoset (6), Bolivian squirrel monkey and Ringtailed lemur (5).

Family	Number of zoos exhibiting		Number of specimens		Number of (sub)species	
	large zoos	small zoos	large zoos	small zoos	large zoos	small zoos
Tupaiidae	3		24		1	
Lemuridae	6		93		7	
Cheirogaleidae	1		29		2	
Lorisidae	2		7		1	
Galagidae	4		39		3	
Callithricadae	6		202		8	
Callimiconidae	2		16		1	
Cebidae	7	2	357	13	13	4
Cercopithecidae	9	7	502	72	23	13
Hylobatidae	8	1	34	1	6	1
Pongidae	6	1	125	2	4	1
Total			1428	88	69	19

Table IV.1
Abstract of primate families and numbers in zoo collections.

From the total amount of primates (1516 specimens, 69 species), 94% is at the large zoos. The large zoos have 371 Appendix I animals (1047 Appendix II).
The average figures are: 15.1 species with 11.9 individuals per large zoo and 3.0 species with 4.5 individuals per small zoo.
This average amount is remarkable. Compared with figures from the International Zoo Yearbook 1976, the amount of individuals per species is higher (like the filosofy of the zoos), but the amount of species did not decrease. Apenheul, Beekse Bergen and Artis even have larger collections then at 1975. Beekse Bergen and Artis also show a slight decrease in the average number per species. Only Ouwehand, Blijdorp and Emmen reached the goals the

zoos should have: a decrease of species with more individuals per species.

	average animals per species			number of species			score
	1975	1986	1987	1975	1986	1987	
AME	4	9	14.2	11	9	9	<
AMS	6	5	5.4	28	32	32	>
APE	12	15	17.3	7	18	19	>
ARN	9	9	11.0	14	13	14	=
EMM	5	16	17.1	20	15	15	<
HIL	14	13	12.6	4	7	8	>
RHE	2	8	8.4	20	13	12	<
ROT	4	7	7.3	34	23	25	<

Table IV.2
Zoo collections and the relationship species/specimen (Sources: Int. Zoo Yearbook & van Akker, 1985).

3. The large zoos and remarks about their collections

Each large zoo is discussed separately. Attention is given to:
- goals
- collection of primates
- breeding results
- housing conditions
- non-routine research
- purchase and transfer

The information results from interviews with the staff of these zoos. This must be kept in mind. Some zoos are more self-critical than others, f.i. in respect to breeding results and housing conditions. When other sources where used, this has been indicated, with the exception of publications by Rook (1983) and van Akker (1985) that were consulted in describing the history of some of the zoos.

3.1 Dierenpark Amersfoort (AME)

Dierenpark Amersfoort was founded in 1948. The main goal of the zoo was recreation. Enclosures without bars were applied in the so-called Freianlage or Hagenbeck style. A subsidy was granted in 1975. The zoo has become more engaged in education and conservation since then.

Education is mainly directed at young families, with the idea of teaching children about nature in a playful way (e.g. through easily readable information). As part of the conservation-goal the zoo applies the formula "fewer species - social grouping".

As far as primates are concerned, Amersfoort used to have a consumptive character. At the beginning of the sixties, twenty species were represented at this park (about a hundred

specimens). The yearly survey of 1975 mentions 45 specimens, divided over 11 species. The figures for 1986 were: 85 animals, divided over 9 species.

The present collection still consists of 9 species. The capuchins and Barbary macaques show satisfying breeding results. The Hoolock gibbons recently reproduced for the first time. The Lar gibbons are expected to do so in the future. The Taiwan macaques are presumed to be too old to reproduce. Both the Crab-eating macaques and chimpanzees breed very well.
Some of the chimpanzees have been at the zoo for twenty years. Amongst them is the present leader, who was rejected as a circus-performer. In 1978, five other animals were acquired from private owners; inbreeding will not be a problem for the next thirty years. Since 1978, thirteen animals were born in this group.

The zoo is very positive about the enclosures of the chimpanzees and capuchins. The gibbons and Barbary macaques should have larger enclosures. The Lar gibbons and Taiwan macaques may make, in turns, use of the outside enclosure.

The group of capuchin monkeys were in part composed of former privately owned animals, which has resulted in a mix of species and sub-species. The genetic lines within this group were analysed in a study by the University of Utrecht and Leiden (Princee, 1984). Isozym-techniques were applied to study the possibilities for genetic management of Cebus groups in captivity.

Recently, the collection was extended with a large group of Crab-eating macaques from the University of Utrecht (see chapter V).
The Lar gibbons are on breeding loan from a private owner. The Taiwan macaques were received from Dierenpark Wassenaar some four years ago.
As to the transfer of animals: Dierenpark Amersfoort feels responsible for the destination of animals. This must be a bona fide zoo. Until now, five chimpanzees were transferred to zoos in Japan. Twelve capuchins were transferred to the University of Luik (Belgium). The zoo was convinced that the animals would be used for research on natural behaviour. According to IPPL Belgium, the University denies that it possesses capuchins. In the past it was involved in an affair concerning the abuse of Rhesus monkeys.

3.2 Artis; Amsterdam (AMS)

Artis (properly called Natura Artis Magistra) was founded in 1837. Of all Dutch zoos, Artis is the oldest in existence. Until 1877 the then Zoological Society Natura Artis Magistra expanded to the size the zoo still has today (apart from some auxiliary grounds). At the end of the 19th century financial problems arose as a result of a decrease in visitors. In 1937, Artis had gone bankrupt and the zoo was threatened with closure. It was bought by the municipality and the province (resp. 75% and 25%).
In 1960, the zoo changed its status of Society into a Foundation. A new goal was formulated for the conservation of fauna and of nature in its entirety.

The present conservation goal results from three objectives:
- Being dependent on captive bred animals.
- The possibility of reïntroducing some animal species to the wild.
- The possibilities a zoo offers for the aquisition of scientific knowledge by studying animals.

Artis always took much interest in education. Nowadays, the visits by schoolclasses play a large role in this.

The zoo has always been known for its extensive collection. In 1974, Artis rated second on a worldwide ranking of number of species kept. Nevertheless, a process of fewer species/larger enclosures had already set in by 1974 (Hillenius, 1976).
However, this process is not apparent as far as primates are concerned. When the yearly surveys of 1975 and 1986 are compared, it appears that the number of specimens is almost the same for both years, but the number of species has increased somewhat: from 29 to 33 (incl. sub-species and hybrids). Especially the Cebidae and Callithricidae were represented by some more species in 1986.

Amongst the species which show good breeding results are the Ringtailed lemur (Lemur catta), the Slow loris (Nycticebus coucang) and Thicktailed bushbaby (Otolemur crassicaudatus).
The Callithricidae breed well in general, with the exception of the Emperor tamarin (Saguinus labiatus). Artis is proud of its breeding groups of Owl-faced guenons (Cercopithecus hamlyni) and Celebes macaques (Macaca nigra).
Some species produce young, but not to their potential or they do not show proper rearing behaviour. Amongst these species are the Douroucouli (Aotus trivirgatus), the Guiana black spider monkey (Ateles paniscus paniscus) and the chimpanzee.
Most of the chimpanzees which are born have to be hand-reared. Later on, these animals are reïntroduced into the group. This is not always successfull. They appear to be prone to disease: the mortality rate is high.
Amongst those species that have not as yet produced young are the Red-ruffed lemur (Varecia variegata rubra), the Mongoose lemur (Lemur mongoz) and the Lowland gorilla (Gorilla gorilla gorilla).
The Red-ruffed lemurs are on breeding-loan from San Diego Zoo; the male arrived at Artis recently. The Mongoose lemur is included in the Red Data Book under the category "Endangered". Saving this species through captive propagation does not seem possible. Most of the lemur species in captivity breed readily and often, but the Mongoose lemur is an exception (Schmidt,1986). Probably, this species will not survive in zoos for much longer.
The pair of Lowland gorillas never produced offspring. The animals grew up together and maybe as a result of this, they never seem to mate. The male fertilized a female gorilla of Dierenpark Wassenaar twice.

Artis is not satisfied over the way the great apes are housed. There are plans for a new gorilla exhibit. The other enclosures are not regarded as ideal either. The Callithricidae, however, are housed very well.

The University of Amsterdam has performed behavioural research, e.g. feeding and marking behaviour of marmosets.

Most primates arrive at Artis on breeding loan. Others are bought. Incidentally animals are donated to the zoo.
Artis prefers to arrange transfers itself. When this proves to be difficult, zoo animal brokers or traders are contacted. The animals are always transferred to other zoos. It sometimes occurs that a single Rhesus monkey is transferred to the Primate Centre TNO (see chapter V). These are animals which had to be separated from the group, because they were repeatedly molested. Acccording to Artis, capuchins, Rhesus monkeys and, to a lesser degree, Squirrel monkeys are difficult to transfer to other zoos. The group of Rhesus monkeys will be replaced by Japanese macaques, which will be acquired from Burger's Zoo and Safari.

3.3 Apenheul; Apeldoorn (APE)

Apenheul is a modern zoo, specialized in keeping primates. It was founded with the notion that primates could be kept in a better way than was customary - both for animals as the public.
At Apenheul, several species can move among the visitors. This idea led to some opposition from other zoos during the founding. They felt that feeding by the public would not be kept in hand, and the animals might endanger the public.
Other people like Konrad Lorenz, George Schaller and Sir Peter Scott notified their agreement with the plans of W.B. Mager, the founder of the zoo. On a private base he started with a group of Woolly monkeys (Lagothrix lagotricha) in 1971. In 1974 and 1976, the zoo acquired Lowland Gorillas (Gorilla gorilla gorilla). In 1976 the Gorilla island (the largest in the world) was put into use.
The rest of the collection consisted by then mostly of South American species. A set back was caused by a fire in 1981, which killed many Spider monkeys and marmosets.

Since the 1st January, 1986 Apenheul is a Foundation. One reason for this is the opinion of the zoo, that exotic animals and certainly those of endangered species, should not be owned by private persons.
Apenheul regards the primates in its collection as "ambassadors" for the endangered animals in the wild. The zoo mentions education about the protection of nature as its first aim.
In time, the objections made during the founding did not turn out to be justified. The feeding of the animals by the public is prevented by strict supervision. To meet the persistent desire of the public to interact with the animals, at some places in the park the visitors are allowed to give the monkeys harmless titbits, which are provided by De Apenheul itself.

As to the safety of the public: only one species gave problems in this respect. The Hanuman langurs (Presbytis entellus) that were kept in the past, had the habit of playing on the public pathway. Because the public always gathered to watch this, it was feared that one day the animals might panic, because they had been closed in by people. The Hanuman langurs and Rhesus monkeys that

shared their enclosure, have been replaced by Barbary macaques (Macaca sylvanus).

Almost all species at Apenheul show good breeding results. The only exceptions are the Ruffed lemurs (Lemur variegatus), which were acquired recently, and the Woolly monkeys. The Woolly monkeys breed fairly well in comparison with other groups in captivity. However, they do not breed to their potential. Apart from losses due to a virus, the number of animals has been stable for years. In 1987, the group was extended with thirteen animals from a private owner in Scotland. It is feared that the Woolly monkey will not survive in zoos for much longer (Schmidt, 1986).
In 1979, Apenheul was chosen to take part in the breeding program for the Golden lion tamarin, initiated by Washington Zoo. Two pairs arrived at Apenheul. Breeding these animals was not as successful as with other marmosets, but nevertheless their number grew steadily. In 1987 one family, consisting of six animals, was to be shipped to the Rio de Janeiro Primate Centre (Brazil). At this centre, Golden lion tamarins are trained to take advantage of natural food resources, prior to being released into the Poco d'Anta Reserve. However, the project was delayed and eventually cancelled because the animals at Apenheul were struck by a virus-disease, which caused some losses. For the time being, the training of the animals at Apenheul (for instance to accustom them to climbing small branches) has been in vain.
A final remark concerning breeding results: the large group of Bolivian squirrel monkeys, which consists of more than 130 animals, is still growing. Annually, some 80% of the mature females produce offspring. There is no need as yet to transfer animals of this group or to prevent reproduction.

Apenheul is positive about its enclosures. Multiple structural buildings are used as inside enclosures, with a "creep-through, sneak-through" system to guarantee privacy for the animals (Mager & Griede, 1986).

German universities have studied social behaviour of the gorillas and White-faced sakis (Pithecia pithecia). Special attention is given to several aspects of the diet on Woolley monkeys.

Most transactions concern exchanges with other zoos, without charge. Also, animals are bought or sold, received or put on a breeding loan.
According to Apenheul, all animals are transferred to zoos. Mostly this is done directly, but sometimes a zoo animal broker is contacted, under the condition that the destination will be a bona fide zoo. In future, maybe surplus Barbary macaques will be transferred to medical (non-pharmaceutical) laboratories.

3.4 Burgers Zoo; Arnhem (ARN)

Burgers' Zoo and Safari originates from a pheasant-collection that was opened to the public in 1913. In 1939 the present zoo was opened. It was completely based on the Frei-Anlage concept of Carl Hagenbeck. In 1968 and 1969 a lion park and wildlife savanna were added: the first safari park in the Netherlands.

In those years, a change in vision of this zoo took place. barless enclosures were not sufficient anymore. Starting points became the combined housing of species which live near each other in their natural state, and the formation of groups of socially living animals in a composition that is as natural as possible.
The recreational aspect of the zoo comes first, because of the economic necessity. The second goal is education: the zoo wants to enhance knowledge by showing animals in a functional way, in which they can show natural behaviour. This makes information texts partly superfluous. Another idea is that visitors are more interested in the animals when they sometimes have to try and detect them.

The composition of a group of Crested mangabeys (Cercocebus aterrimus) has not been completed yet.
The zoo holds one Agile gibbon (Hylobates agilis), the only representative of its species in the Netherlands. This male has proved to be incompatible with a female Agile gibbon.

The Japanese macaques (Macaca fuscata) breed very well. This has led to lack of space and therefore the group will be split in two. The Patas monkeys (Erythrocebuas patas) also produce many young, and the same applies to the Hamydryas baboons (Papio hamadryas hamadryas). By improvements of housing and husbandry methods, infanticide in the latter group has been eliminated. The Drills (Papio leucophaeus) have not produced live young yet. The captive population of this species is not thriving.
The Siamangs (Hylobates syndactylus) do not breed well: only one of the two pairs produces young and these are not reared adequately. The Bornean orang-utans (Pongo pygmaeus pygmaeus) produce offspring, but some females do not produce enough milk, so their young have to be hand-reared. The Westerm lowland gorillas which have been kept by this zoo since 1984 (see chapter II) are to young to reproduce.
The well known chimpanzee colony was established in 1971, with the object of providing a habitat that would be both suitable and large enough for the maintenance of a chimpanzee group of natural composition. The founding members were acquired from other zoos, an ice revue and private sources. In the early years the rearing of infants was largely unsuccessful, because most of the animals had no experience of infants. The mothers who did succeed in rearing their young, served as an example for the others and gradually, with more mother-reared infants in the group, almost all females became adequate mothers. Infant mortality related to lack of maternal care is now rare, and mean birth intervals have increased (Adang et al., 1987). During recent years it has not been necessary to rear infants by hand. In the early years sometimes as many as 8 young were born annually: this number has decreased to 3 or 4.

Arnhem Zoo is content about the large gorilla and chimpanzee facilities. The enclosure of the Hamadryas baboons and Japanese macaques are considered too small. The orang-utans will be provided with an outside enclosure.

As a result of cooperation between the zoo and the University of Utrecht, extensive behavioural records on the chimpanzee colony have been kept since 1971. Research has been and is still being conducted on many aspects of the chimpanzees social behaviour, for instance coalition behaviour, dominance processes and, at present, the development of agressive behaviour.
As part of the zoos research into reproductive biology, the fertility of the male Drills is being studied.

It is difficult to transfer Japanese macaques and chimpanzees to other zoos: the first species because it is kept by few other zoos, the latter because of the opposite reason. In recent years, some reduntant male Japanese macaques and genetically varied groups of Hamadryas baboons have been transferred to Zoo Tirgoviste, Rumania. One group of Japanese macaques will be taken over by Artis, Amsterdam. Although circuses and laboratories are interested in obtaining chimpanzees from Burgers' Zoo, other zoos hardly ever are. The long term research that is conducted into the chimpanzees social behaviour, makes it necessary that their young grow up within the colony. By the time these animals may be transferred, other zoos often consider them too old. Until now, all animals could be placed in other zoos. In future it might occur that chimpanzees are transferred to research institutions. Should such a transfer be necessary, it will be preceded by a critical examination of the research project concerned.

3.5 Emmen Zoo (EMM)

Emmen Zoo, or Noorder Dierenpark, was founded in 1935. Towards the end of the sixties, this family business ran into financial trouble, due to the decreasing number of visitors. In 1970, the zoo became a partnership: half municipal and half family property. With this, many of the financial problems disappeared.

After 1970 the goals were further defined. The notions were:
- a zoo only has a right to exist if it's designed for education.
- the most effective education is felt as a recreation.

According to the zoo, a good and natural presentation of the animals is a prerequisite. Emmen Zoo tries to enhance the visitors interest by other resources as well. Several museums are part of the zoo, like the Biochron, a museum about the history of life on earth, and the often praised museums of Natural History. In the BBC-series "Zoo 2000", Emmen Zoo was shown as an example of the zoo of the future.

Emmen Zoo does not have an emphatic breeding or conservation goal like other zoos have. Education is by far the most important goal. For example, the most important reason for Emmen Zoo to acquire Golden lion tamarins (Leontopithecus rosalia rosalia) was their educational value: the public could be informed about breeding programs and reïntroduction of animals into the wild.

All primate species presently held by Emmen Zoo produce offspring.

There are off-exhibit breeding groups of several species, for instance the Common treeshrew (Tupaia glis) and Lesser bushbaby (Galago senegalensis). The group of Guerezas (Colobus guerezea), which has existed from 1976, consists of two breeding units. In earlier years, miscarriages occurred, but now the group is thriving. The Common marmosets (Callithrix jacchus) and Cotton-top tamarins (Saguinus oedipus oedipus) at this zoo are thriving as well: many animals are transported abroad. The number of Bolivian squirrel monkeys (Saimiri sciureus boliviensis) is yet to be increased.

According to Emmen Zoo, the present facilities have no drawbacks. This is important for the wellbeing of the primates.

Groningen University has studied social behaviour in several primate species at Emmen Zoo.

From the large group of Hamadryas baboons (Papio hamadryas hamadryas), some sixteen young females were transferred to Ouwehands Dierenpark a few years ago. These animals had been selected during behavioural observation.
One pair of Lar gibbons (Hylobates lar) will be transferred in the future. The female does not rear her young adequately and there is a lack of space.
The number of primates that are bought or sold approximately equals the number of exchanges or breeding loans. For the transfer of primates, Dutch traders or brokers are contacted, or the animals are sent to Zoo Gronau (F.R.G.), which is a trade business. Mostly Emmen Zoo arranges tranfers itself.

3.6 Beekse Bergen; Hilvarenbeek (HIL)

This safaripark, which is the largest in the Netherlands, was opened in 1968 out of economic motives. It started as a lion park of about fifty hectares. Later, several sections were added, each with its own fauna. By 1980, the park had extended to 100 hectares, including a small conventional zoo. The goals had changed: conservation and education had become more important. At the end of the seventies and the beginning of the eighties, the park suffered from the declining numbers of visitors to zoos. This led to financial problems. The park, which was municipal property, has been managed by a company since 1987.

Safaripark Beekse Bergen mentions the following goals: reproduction, conservation, education and recreation. Because these are intertwined with each other, it is hard to say which one has priority.

Beekse Bergen keeps two groups of Ring-tailed lemurs (Lemur catta). A successful breeding group and an all male group. Around 1985 a large group of Olive baboons was replaced by one of Rhesus monkeys (Macaca mulatta). The reason for this change was too much destructive behaviour showed by the baboons towards, among other things, visitor's cars. The groups of Rhesus monkeys originate from the TNO Primate Centre (see chapter V) and is still owned and managed by this institution.

The animal listed as being a Capped gibbon (Hylobates pileatus) might in fact be a Lar gibbon (Hylobates Lar). Capuchins and Tufted capuchins (Cebus spec. and apella) are kept together.

The other species are kept in pairs or groups. The capuchins, Bolivian squirrel monkey (Saimiri sciureus boliviensis) and White cheeked gibbon (Hylobates concolor leucogenys) do not reproduce.

According to the safaripark, the facilities are good in general, but the enclosure of the White-cheeked and the Capped gibbon need improvement. New facilities will be built for these species, as part of a general adaptation of the park to more promenade walks for the public instead of car routes. Geographically, this will make it more like a conventional zoo.

The Möller Institute (a teacher training college) regularly studies social behaviour, feeding patterns and the attitude towards the public of primates, especially Rhesus monkeys.

The purchase and transfer of primates is arranged by buying and selling, exchanges and breeding loans, especially with Dutch zoos. When possible, transactions with Dutch zoos are settled without charge. Primates are only transferred to zoos with good housing facilities. In general, transferring surplus male primates is difficult.
In 1986, 2 Agile mangabeys (Cercocebus galeritus) were transferred and 3 Drills (Papio leucophaeus) and 1 Lar gibbon (Hylobates lar) were purchased. The housing of the Drills proved insufficient and it was decided to transfer 2 animals (one of them died in the meantime).
In 1987, 5 Ring-tailed lemurs were taken over from Apenheul.

3.7 Ouwehands Dierenpark; Rhenen (RHE)

Ouwehands Dierenpark was opened in 1932, designed in Hagenbeck style. At the outbreak of the Second World War the zoo was partly destroyed. The park was rebuilt, and re-opened in 1942. The zoo still is a family business and because it receives no subsidies, the recreational aspect is important. However, education is seen as the most significant goal.

The objectives of the zoo can be summarized as: the providing of good nature education at an economical base. Conservation and scientific research come second.

Since the end of the seventies the zoo has shifted from an exemplary display of animals to the keeping of breeding groups. Primate species at Ouwehand Zoo which do not produce offspring are the Ring-tailed lemur (Lemur catta, which is kept in an all male group, the Pygmy marmoset (Cebuella pygmaea) and Lar gibbon (Hylobates lar). The Bornean orang-utans (Pongo pygmaeus pygmaeus) have not bred in recent years either.
The Common marmosets (Callithrix jacchus) do not breed to their potential. The Tufted capuchins (Cebus apella) breed well; this group has been composed of animals of different subspecies. In 1987, the Squirrel monkeys (Saimiri sciureus) produced offspring for the first time.

Ouwehands Dierenpark keeps two groups of chimpanzees (Pan troglodytes); one consisting of juvenile, the other of adult animals. The latter group will be split up: breeding this species is problematic, because young that are born into this small group are "kidnapped" from their mothers by the other females.
The Stumptailed and Pigtail macaques (Macaca arctoides and nemestrina), as well as the Moustached monkeys (Cercopithecus cephus) show good breeding results. Breeding the Black-nosed patas monkeys (Erythrocebus patas patas), which were received from the primate reception centres, is becoming successful.
Nowadays, the Hamadryas baboons (Papio hamadryas hamadryas) show good breeding results. In the past, however, infanticide occurred on a large scale. From 1977 until 1982, only one of the 20 born infants survived for more than a few weeks (Blom, 1982).

Ethological research by the Landbouwhogeschool Wageningen has led to acquiring a new group of animals and improvements of housing conditions and husbandry (f.i. encouraging foraging behaviour by means of food dispersion and visual obstacles). By this, the infanticide problem seems to have been solved.

The Landbouwhogeschool Wageningen has studied the behaviour of Hamadryas baboons and chimpanzees at this zoo.

Ouwehands zoo receives primates from other zoos, reception centres and incidentally from private sources. In 1987 the first breeding loan was arranged: the zoo received a male Bornean Orang-utan from Hamburg (F.R.G.).

3.8 Blijdorp; Rotterdam (ROT)

The history of Diergaarde Blijdorp goes back to 1857, when the Vereniging Rotterdamse Diergaarde was founded. In the thirties the original zoo in the city centre had to make room for new town building. At the edge of the city a new zoo was built, after a remarkable architectonic design. At the outbreak of the Second World War, the bombardment of Rotterdam compelled a hasty removal to the present site. December 1940 "Diergaarde Blijdorp" was opened. In 1948, a subsidy by the municipality ensured the survival of the zoo. In 1971, another agreement covered the zoos financial deficits. Today, some 70% of the zoos outlays is covered by the city's subsidy.

Rotterdam Zoo is one of the largest zoos in the world. The zoo wants to present a section of the world's fauna, to ensure that it will be possible to show these species in the future.

As a "modern, cultural zoo", Blijdorp has set itself two functions. The presentation function implies that the collection is primarily composed on the grounds of the presentation value it has for visitors. The aims of the presentation are to increase the common knowledge of the public and propagation of nature conservation. The conservation function implies the breeding of animals and the development of breeding programs in cooperation with other zoos.

The large majority of the primate species kept by Blijdorp produce offspring. Amongst the exceptions are the Mayotte lemur (Lemur fulvus mayottensis), Slow loris (Nycticebus coucang), Black-eared marmoset (Callithrix penicillata), Bolivian Squirrel monkey (Saimiri sciureus boliviensis) and the Roloway monkey (Cercopithecus diana roloway).
Blijdorp is trying to breed the latter species in cooperation with Zoo Mulhouse (France), San Diego Zoo (U.S.A.) and Zoo Leipzig (F.R.G.). The total population, however, is frail. It consists of only 18 animals. The quality of the male of Diergaarde Blijdorp is poor, and therefore no breeding results have been reached yet.
Blijdorp gives special attention to breeding, amongst other species, the Grey mouse lemur (Microcebus murinus murinus) and the Fattailed dwarf lemur (Cheirogaleus medius). Although these species do reproduce, the zoo considers their breeding results to be suboptimal.

The breeding of orang-utans by Blijdorp has a long history. The Rotterdam zoo had the first group of this species to breed regularly in a zoo. The first birth took place in 1949. Blijdorp holds one Sumatran orang-utan (Pongo pygmaeus abeli), a female that is too old to reproduce, together with one male of the Borneo sub-species (Pongo pygmaeus pygmaeus). The other Bornean orang-utans are part of a successful breeding group.
The breeding group of Western lowland gorillas (Gorilla gorilla gorilla) was started at the beginning of the 1970's. Until now, this group has produced many offspring, partly because infants had to be hand reared because of inadequate maternal care. This problem seems to be over now. One mother serves as an example for the two other adult females, and maybe the training of one of these females in handling a doll as if it were an infant has had effect as well.

The biological department of this zoo is conducting research into the fields of reproductive biology, ethology and genetics, especially into the reproductive biology and behaviour of Grey mouse lemurs. Fattailed dwarf lemurs and Cotton-top tamarins have also been studied. Genetical research has been directed at several primate species. Chromosome and isozym studies have been applied to distinguish the karyotypes of Bornean and Sumatran orang-utans, Spider monkeys and Douroucoulis or Night monkeys (Aotus trivirgatus), often at the request of other Dutch and foreign zoos. One important reason for breeding pure (sub)species or karyotypes is the danger of hybrid sterility, as found in Douroucoulis (de Boer, 1982).

Blijdorp promotes the tendency towards donation and exchange of zoo animals, instead of buying or selling them. One reason is that the prices paid for specimens of many species are insignificant when compared to the total turnover of large zoos. Another reason is that some specimens of some species, i.e. the gorilla - are literally speaking priceless. It is almost impossible to decide on their value.
Primates are transferred to bona fide zoos only. One recent transfer concerned a pair of chimpanzees (Pan troglodytes) that were exported to Girskud Zoo, Denmark. With this, Blijdorp has stopped keeping this species. Dublin Zoo (Ireland) in recent

years received a young gorilla and orang-utans. According to the zoo, it is difficult to place Whitefronted, Mayotte and Ruffed lemurs.

3.9 Wassenaar Breeding Centre (WAS)

Wassenaar Zoo was opened in 1937. The zoo originated from a private bird collection. In 1969 J.W. Louman, a son of the founder took over the management of the park. As with other zoos, a strong decrease in visitors led to financial problems in the following years. In 1982 it was announced that the zoo would have to close down if money could not become available. Because the zoo was in private hands, the goverment would not provide a subsidy. Therefore shares were issued, of which 80% were bought by the Province. With a once only subsidy by the goverment, the zoo started renovation and the drafting of educational programs in 1983. Because part of the money had to be used for every day running costs, the renovation could not be completed. The zoo was closed down at the end of 1985. Takeover by a concern was a possibility, but it was feared that in that case the zoo would become a recreation park. J. W. Louman bought back the zoo, to coordinate the phasing out of personnel and the transfer of animals. The transfer of animals has not been fully completed yet.
Since 1953, a separate breeding centre had been part of the zoo. When in 1983 the Dierenpark Wassenaar changed from private into semi-goverment status, the Wassenaar Wildlife Breeding Centre became an indepentent institution. Its aim is to establish breeding groups of rare and endangered species in captivity, in cooperation with other breeding centres and zoos.

In 1975 Wassenaar zoo kept 123 primates, divided over 32 species. This large number of species had partly resulted from the deposit of animals by private owners, which declined slowely after 1977. By 1985, the number of primate species had diminshed to 10, the number of specimens amounting to 46.

The breeding of apes was successful: Wassenaar zoo was one of 6 or 7 zoos over the world that bred all great ape species, the Pygmy chimpanzee or Bonobo (Pan paniscus) included.

When the zoo closed down, the primates were removed to other Dutch zoos and zoos in the USA, France and the F.R.G. As a rule, transfer took place in groups; the destination of the animals was chosen in consultation with the studbook keepers. A brief survey of the transfers:

- 8 Ring-tailed lemurs (Lemur catta) and 6 Celebes macaques (Macaca nigra) were transported to France.
- 5 Roloway monkeys (Cercopithecus diana roloway) were transported to Diergaarde Blijdorp and France.
- 5 Mandrills (Papio sphinx) were transported to Artis and the F.R.G.
- 4 Spider monkeys (Ateles paniscus chamek) and 3 Lar gibbons (Hylobates lar) were taken over by Emmen.
- 6 Western lowland gorilas (Gorilla gorilla gorilla) and 4 Bonobos (Pan paniscus) went to Milwaukee, USA.
- 2 Sumatran orang-utans (Pongo pygmaeus abeli) went to Miami.

At the end of 1987, 2 Mandrills were still kept at the former zoo. They will be transfered to a private owner in F.R.G. Also, 2 old White-whiskered spider monkeys (Ateles belzebuth marginatus) are kept at the breeding centre. The centre has no plans for purchasing primates.

4. The small zoos and some remarks about their collections

Appendix 3 provides a survey of the numbers and species of primates kept by smaller zoos. In respect to the small zoos, the records of the Ministry of Agriculture and Fisheries appeared to be not quite complete or up to date.
In this section, each small zoo is discussed separately, with some interesting remarks on aspects of history, goals, collection of primates, breeding results, housing conditions, purchase and transfer. The sources of information are the same as mentioned in the discussion of the large zoos.

4.1 Avifauna; Alphen aan de Rijn (ALP)

This large bird park was opened in 1950. It is part of a recreation park. Besides an old Lar gibbon (Hylobates lar) this zoo ownes a group of Rhesus monkeys (Macaca mulatta). Two or three young are born in this group annually. Sometimes the males amongst them are killed by the adult male.
No animals have been transferred from the zoo yet.

4.2 Dierenpark De Vleut; Best (BES)

In 1968 this small zoo opened to the public. Before that, it served as an extension of the bird trade business. Of the smaller zoos, this one has the most extensive primate collection. The most remarkable is a group of Spider Monkeys (Ateles paniscus), which is breeding well. According to the zoo, this group consists of Ateles paniscus paniscus, Ateles paniscus chamek and hybrids of these two species.
The other groups also produces offspring.
For the occasional purchase of new animals, Dutch and foreign zoos are contacted. No primates have been transferred from the zoo in recent years.

4.3 Kasteelpark; Born (BOR)

In 1969 this already existing zoo was adjusted to the pursuit of the breeding of endangered bird species and the providing of information about animals and nature conservation.
This zoo ownes a group of Barbary macaques (Macaca sylvanus) which is breeding well. It originates from a pair of pre-convention animals. When in future inbreeding will become a problem, the animals will be placed elsewehere.

4.4 Dierenpark De Brug; Eerbeek (EER)

This small animal park, which was opened in 1965, belongs to a pub, along with some playing ground attractions. Part of the animal collection is a pair of pre-convention Squirrel monkeys (Saimiri scurieus) with one young.

4.5 Animali; Eindhoven (EIN)

This zoo started as a hobby, but soon became a trade business. The every day running costs of the zoo has been separated from the trading. However, an important goal of the collection seems to be showing birds to aviary owners.
This zoo has several primate species in its collection, among which a group of pre-convention Crab-eating Macaques (Macaca fascicularis). Sometimes young are born in this group, but most of these die.
In the other groups which were all acquired after 1977, no reproduction took place.

4.6 Dierenpark De Achterste Molen; Epe (EPE)

This animal park was opened in 1965 as a purely recreational institution. After a takeover in 1965 it changed into a zoo, directed at education. The visitor is told that exotic animals don't belong here (i.e. outside their natural environment) and should certainly not be owned by private persons.
The zoo functions as a deposit centre for both exotic and endemic animal species. It is the only small zoo which has been granted an overall exemption. Therefore, the park has to provide an annual survey instead of a quarterly one.
About the time of the takeover some Tufted capuchins (Cebus apella) and Crab-eating macaques (Macaca fascicularis) were transferred to reception centre Stichting AAP (see chapter VII), so that they could live in social groups. From the Stichting AAP the park received some Grey mangabeys (Cercocebus atys) and Rhesus monkeys (Macaca mulatta). These species do not reproduce. The mangabeys are too old and the Rhesus monkeys, which are former pet animals show behavioural disturbances.
The park also owns a group of Pigtail macaques (Macaca nemestrina). This group has existed for a long time and shows good breeding results. In future, animals of this group will possibly be transferred to Stichting AAP.

4.7 Gulperberg Panorama; Gulpen (GUL)

This park was built in 1965 as part of a large recreational ground. Commercial aspects and special interests are the most important goals. This zoo could not be contacted.

4.8 Vogelpark; Oisterwijk (OIS)

Vogelpark Oisterwijk was opened in 1964. It served mainly as a show ground for a bird trade business (presently Eurobird; see

chapter II). In 1976 the trade business was formally separated from the zoo.
This zoo refused to provide information about its collections.

4.9 Plaswijckpark; Rotterdam (PLA)

The zoo part of this recreational area was founded in 1930. The park has been subsidized by the municipality since 1977. The present collection consists of four Crab-eating macaques (Macaca fascicularis, one male with his three sisters), which originate from the founding of animals in 1935. No reproduction takes place.
In recent years, one male Crab-eating macaque was transferred to reception centre De Apenhof, because of aggressive behaviour. Two guenons (Cercopithecus spec.), Crested mangabeys (Cercocebus galeritus) and one capuchin (Cebus apella) were transferred to Diergaarde Blijdorp.
The Ministry does not allow Plaswijckpark to purchase new Crab-eating macaques. The housing conditions and maintenance of the enclosures at the zoo must be improved first.

V. LABORATORIES

1. Introduction

Before 1977, the number of experiments on primates had declined considerably (see chapter II). For instance, during the 1960's, up to 6,000 Crab-eating macaques were imported yearly for the production of polio-vaccine. New techniques and captive breeding reduced the use of live primates for most polio-vaccine work. At the end of the 1970's, primates were captive bred by Dutch institutions for most of the research requirements. At present the institutions are self-sufficient as far as the need for primates is concerned.
In 1977 1,774 primates were used in 18 research institutions in the Netherlands, making it the fourth largest user in the EC (Caldecott, Kavanagh, 1984). No animals have been imported from the wild since 1983. The last import concerned about 10 Pigtail macaques from Indonesia. These animals were used for research into the effects of brain damage by the Erasmus University, Rotterdam (Spruit, 1985). The import permit issued most recently, also in 1984, concerned 10 Crab-eating macaques to be used for research into the effects of drugs and methadone in pregnancy (Zo doende 1984). According to the Ministry of Agriculture and Fisheries, this import did not take place.

The Scientific Advisory Commission (see chapter I) stresses that captive breeding of primates is highly preferable to importing wild-caught specimens. In judging applications for the import and possession of primates for scientific research the Commission applies three criteria:

- the status of the applicant. Also, a difference is made between wild-caught and captive-bred primates.
- the degree to which the species concerned are threatened. Exemptions concerning wild-caught specimens of seriously threatened species will only be issued in case of an exceptional emergency.
- the purpose of the research. The commission distinguishes between three kinds of scientific research:
  a) medical research.
  b) research directed at the conservation of a threatened species.
  c) other scientific research. The research project must be highly important to society. It must be proved that a research project is of scientific significance and cannot be carried out by using specimens of an animal species that is not threatened.

2. The Dutch Animal Experimentation Act

In 1977 the Dutch Animal Experimentation Act was enforced for the protection of animals that are to be used in experiments. It proceeds from the premise that the performance of animal experiments for certain goals is necessary, but also from the view that the number of experiments should be as small as possible, and that these experiments must be carried out with extreme care.

The available means are (Zo doende 1983, Animal Experiments in the Netherlands - statistics 1986):

1. A licence system. Animal experiments may only be performed if the Ministry of Public Health has issued a licence to the particular research establishment.
2. Demands concerning the expertness of researchers and their cooperators.
3. Demands concerning the housing and husbandry of laboratory animals.
4. Registration of laboratory animals and animal experiments.
5. Supervision of the welfare of the animals by a veterinarian or another expert.
6. Control and supervision by the Animal Experimentation Department of the Veterinary Public Health Inspectorate.
7. A Standing Committee which advises the Minister on the administration of the Act and related issues.
8. The giving of priority to alternative methods to animal experiments.

The Act enumerates the purposes for which implementation of experiments is allowed. These are:

a) the production of sera, vaccines etc.
b) pharmacological and toxicological research.
c) research for diagnostic purposes.
d) instruction and practice of skills.
e) scientific research.

For the purposes mentioned under a) to d) a restriction is made. Experiments may only be performed in so far as these are directly or indirectly related to the feeding or the health of man or animals (Zo doende 1983).
According to the Act, experiments on horses, dogs, cats and monkeys may not be performed if comparble results can be obtained by means of tests on animals that don't belong to these species. This regulation must be seen as an attempt to spare those animals from experiments, which are apparently dear to people. Other opinions say that the choice should be made on conditions about specific species in considering the intended result, the smallest number of animals needed, suffering the least pain or other negative effects (Spruit, 1985). According to the Animal Experimentation Department, this will usually mean the avoiding of the use of the four kinds of animals mentioned above (Zo doende 1983).

3. The European Convention

On the 4th of August 1984, the Netherlands signed the European Convention for the protection of vertebrate animals used for experimental and other scientific purposes. The Comité Ad Hoc pour la Protection des Animaux (CAHPA) of the Council of Europe had been working on this text since 1978. In May 1985 the CAHPA draft was accepted by the Council.

In many aspects this convention is similar to the Dutch Act described above. Keywords are: restriction, alternative methods and supervision. The main points of the convention are:

- Protection of laboratory animals against unnecessary pain and suffering, by restricting animal use to necessary experiments and the promotion of alternative methods.
- Animal experiments may only be performed for purposes which are mentioned by name.
- Good housing and husbandry are required. In experiments that involve pain, anaesthetics must be used. If this is incompatible within the scope of the experiment, this should be anounced to the authorities.
- Only licence holders may perform experiments. Licences are not provided for experiments which involve serious and prolonged inconvenience, except when these experiments are of exceptional interest to the health of man or animals, or to science.
- The people who carry out experiments must be experts.
- As a rule, only animals may be used that come from acknowledged and officially registered institutions, which are engaged in breeding, supplying or the use of laboratory animals.

Full implementation of the Convention by the Netherlands is envisaged by November 1989.
The Commission of the EC has drafted an EC Guideline, which was approved of in July 1986. This guideline differs only in part from the Convention.

4. Registration

Statistical information relating to animal experiments in the Netherlands has been available since 1978. Registration used to be voluntarily, but since November 22nd 1985 the providing of information to the Animal Experimentation Department is legally liable. Registration takes place by means of annual questionnaires.
In the years before 1985, the supervision of the number of experiments which involved the utilization of primates was already complete. All establishments concerned participated in registration (Rozemond, pers. comm).
The Animal Experimentation Department has published annual reports since 1981. The reports contain statistical information, relating to many aspects of the use of laboratory animals. Few countries have reached such a stage yet. However, these reports have been criticized by the Dutch Association for Animal Protection. According to the Association, the reports "clarify much in general, but nothing in particular" (Boon, 1985). In registration, those animals are counted which will be put to a use which may cause them pain, suffering, distress or lasting harm. When an animal is used in a procedure, this entire procedure is counted as one experiment. For instance: if a procedure consists of taking one blood sample, this is counted as one experiment. However, a procedure consisting of taking several blood samples, alternated with the performance of operations of some sort, is counted as one experiment as well.
An animal may be used for several tests or experiments during one year. Therefore, the number of experiments performed during one year does not equal the number of animals used.

The annual statistics do not provide detailed information about the number of primates that were used per species. The only data

on this subject concern the year 1985. During that year, most experiments involved Pigtailed macaques. The second most used species was the Crab-eating macaque, followed by Stumptailed macaque, Rhesus monkey, Common marmoset, chimpanzee, Vervet monkey and Patas monkey.

5. Numbers of experiments during 1978-1986

During the period 1978 - 1986, the use of laboratory animals has steadily decreased (table V.1, figure V.2 & V.3). In 1986 there was a slight increase. Over the same period, the use of primates dropped far more.
In 1982 the number of experiments on primates was almost twice as high as it had been in the previous year. Compared to 1981, there was an overal increase in the use of primates for different purposes.
Information concerning the purposes of experiments which were carried out, is only available only over 1981 and later years.
In relation to 1981, the year 1986 shows a decrease of 634 in the number of experiments on primates. This difference lies mainly in the field of scientific research, not related to diseases in man or animal. For this purpose, 627 more experiments were conducted in 1981 than were in 1986.

year	number of primates used	% in relation to 1978	% of total animal use
1978	2,025	100	0.13
1980	2,108	104.1	0.14
1981	1,187	58.6	0.08
1982	2,086	103.1	0.15
1983	1,023	50.5	0.08
1984	584	28.8	0.05
1985	741	36.6	0.06
1986	553	27.3	0.05

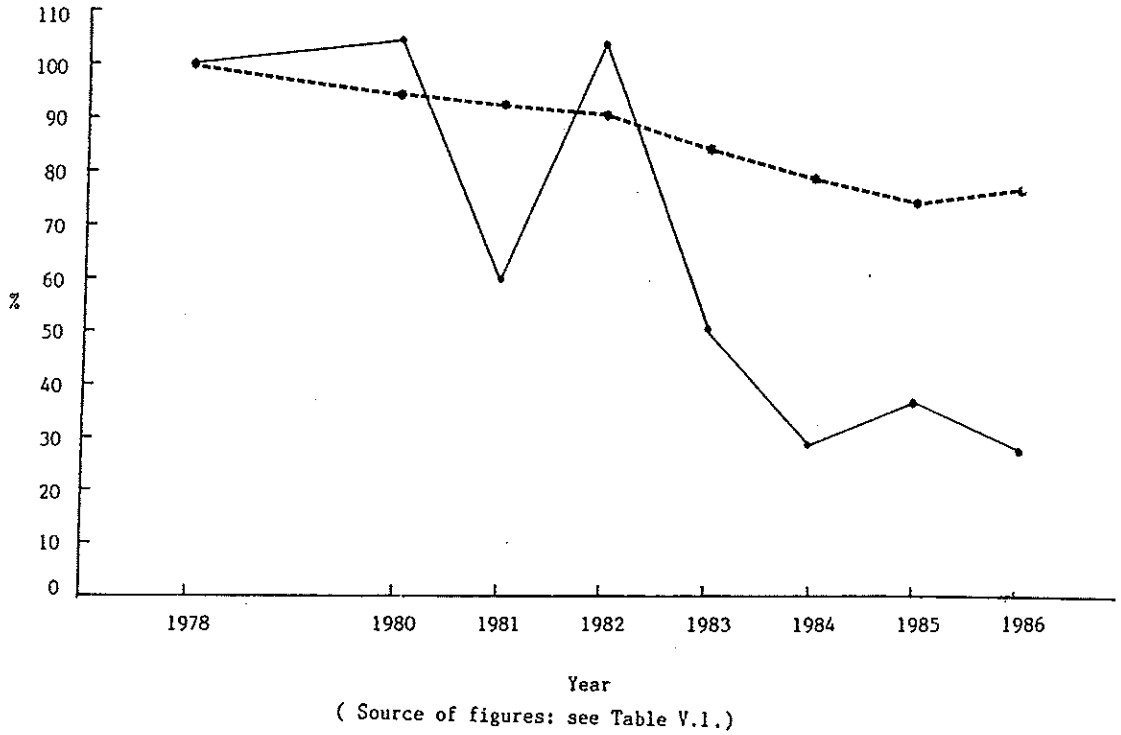
Table V.1

The scale of primate use in animal experiments 1978 - 1986.
Source: "Zodoende 1985" & "Zodoende 1986", VHI.

The largest increase concerned research for scientific purposes: 484 more experiments were carried out than in 1981.
The number of experiments in this field amounted to a total of 1,189. According to the Animal Experimentation Department, this increase was due to research in the field of immunology, involving the use of 1,030 monkeys (Zo doende 1984).
In table V.4, a survey of the purposes and scope of the experiments in 1985 and 1986 are given, with the effects on the condition of the animals involved.

A future increase in the use of primates is unthinkable. The use of primates as laboratory animals is relatively costly and most institutes have to cut down expenses. Also, the awareness has

grown that it is not always necessary to conduct experiments on primates; the use of other kinds of laboratory animals may prove equally useful.



(Source of figures: see Table V.1.)

Figure V.2
Utilisation of laboratory animals.

Animal use as a percentage of the use in 1978
Year

----- primate use (100% = 2025 specimens)
===== total animal use (100% = 1,558,000 specimens)

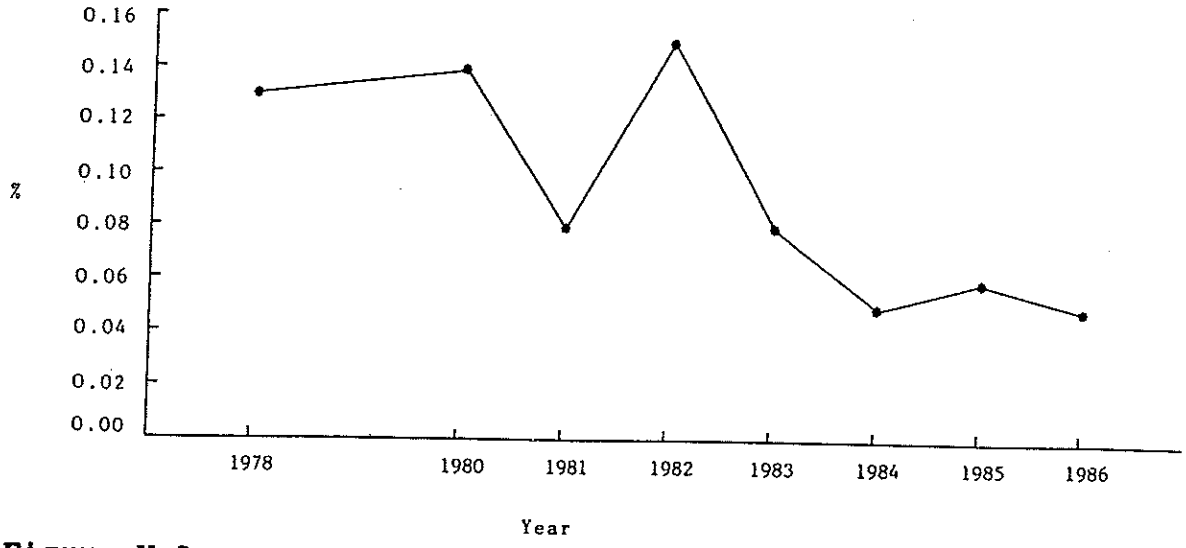


Figure V.3
The use of primates in proportion to the total of laboratory animals.

SCOPE OF EXPERIMENTS	1985	1986	%86
1) Directly or indirectly related to the feeding or the health of man and animals	684	543	98.1
2) Not related	57	10	1.8
APPLIED TECHNIQUES OR INTERFERENCES			
1) Killing the animal without previous treatment	1	57	10.3
2) Exposure to ionizing radiation	34	26	4.7
3) Exposure to physical/chemical stimuli on the central nervous system/sense organs	10	12	2.2
4) Techniques or interferences to provoke			
* inflammations	0	11	2.0
* allergies	0	3	0.5
* infections (not for diagnostic reasons)	4	4	0.7
5) More than one of these techniques	0	4	0.7
6) None of these techniques	692	436	78.8
DISCOMFORT THE ANIMAL MIGHT ENDURE			
1) Minor	364	268	48.5
2) Moderate	303	189	34.2
3) Severe			
* shorter than 1 day	6	4	0.7
* 1-7 days	41	67	12.1
* 7-30 days	27	22	4.0
* more than 30 days	0	3	0.5
CAUSED PAIN AND PAIN REDUCTION			
1) It can be expected that the animal will be caused pain			
* this pain is minor	489	315	57.0
* this pain will be reduced by drugs/other	76	116	21.0
* this pain will not be reduced because of incompatibility with the experiment	0	22	4.0
* this pain will not be reduced because this is not possible for another reason	21	11	2.0
2) More than one of the circumstances mentioned above are included	2	4	0.7
3) None of these circumstances are included	153	85	15.4
CONDITION AFTER TERMINATION OF THE EXPERIMENT			
1) The animal is killed during or at the end of the experiment	183	280	50.6
2) The animal will stay alive	543	258	46.7
3) The condition is not foreseeable	15	15	2.7
PURPOSES OF THE EXPERIMENTS		(SE)	
1) Research in relation to development/ production/control/standardization of			
* sera/vaccines/other biological products	208	93 (8)	16.8
* medicines, inclusive their toxicity testing	95	39 (0)	7.0
* other medical/veterinary expedients or appl		1 (1)	0.2
2) Toxicological research		54 (0)	9.8
3) To gain/develop knowledge of the human or animal body or to gain skill in the performance of interferences on it	1		0.0
4) The solution of a scientific problem relating to			
* cardio-vascular diseases	3	8 (8)	1.4
* diseases of the mind or the nervous system	42	35 (35)	6.3
* other diseases in man or animal	175	188 (11)	33.9
* other physical conditions	17	21 (21)	3.8
* another scientific problem	200	114 (22)	20.6
TOTAL	741	553 (106)	

Table V.4
Primate utilization during 1985 and 1986.

(SE) = used for Scientific Education in 1986.
The figures relating to experiments in 1986 are also expressed as percentages of the total primate use during that year.

Source: "Zodoende 1985", "Zodoende 1986" and "Animal Experimentation in the Netherlands - statistics 1986".

6. Aids research

For the Netherlands, the Primate Centre TNO engages in the planning and coordination of Aids research, both on a national and international level because it's the only centre with a large colony of chimpanzees. The chimpanzee is the only animal species in which the human AIDS-virus HIV (Human Immunodeficiency Virus) survives. Still, the benefits of this animal as a useful model for human AIDS is questionable (Kuperus, 1988). Furthermore, in some ways similar SIV-virus can be studied in Rhesus monkeys.
The Primate Centre TNO is not eager to engage in Aids research because this would frustrate its present activities. However, the centre feels responsible in this matter. By engaging in the research itself, the centre hopes to keep influence on the European situation in hand with respect to the use of primates and the conditions under which experiments will take place (Kuperus, 1988).
Therefore, the Primate Centre TNO keeps in close contact with the EC Working Party on AIDS research. The European Commisssion will in years to come, contribute 2.3 million guilders "to make available chimpanzees and macaques for research on EC level". The EC contribution is made for the breeding and keeping of chimpanzees and Rhesus monkeys only. The condition is made that money will become available for the building of new social isolation facilities. For each chimpanzee kept in isolation over a period of ten years, 100,000 guilders a year is needed. The possible number of infected chimpanzees will amount to 20.
At present the Primate Centre TNO keeps three chimpanzees that have been infected with the AIDS virus. One animal was infected in 1982, when less was known about AIDS. Later on, two other seropositive chimpanzees were accomodated at the request of a Swedish Institute. No extensive research is performed on these animals. Euthanasia is out of the question. This possibility was never considered, because it's against the world-wide regulations (Pries, pers. comm.).

7. Research into nerve-gas poisoning

Through the years, the Ministry of Defence seemed to have commissioned MBL-TNO (Medical Biological Lab TNO) to study the prevention and treatment of bodily harm, resulting from acts of war. One of these studies is described as "the protection against chemical agents and the treatment of victims of these agents". In 1985, 3 marmosets were used for this purpose; 54 marmosets were used in 1986 (Zodoende 1986).
The involved chemical agent is the nerve gas "soman" of Russian origin. It is also in the U.S. weapons armory. The research into the effects of soman poisoning has been strongly criticized by Nieuwdorp and Spruit (1987), who evaluated the research over the years 1972-1984. They reached the conclusion that the value of soman research is nil, both for defense, science as society. January 1988 the Undersecretary of the Ministry of Defence stated that he had allowed future utilization of marmosets for the purpose mentioned. This was a reaction to the proposal of a member of Parliament to stop this research. The member of

Parliament had referred to the international prohibition of using chemical agents. According to the Undersecretary, the Protocol of Geneva (1925) only forbids the first use of chemical agents. The Scientific Advisory Commission has no objections against the scientific part of this research.

Other research for defence purposes is performed in the field of vision. In 1985, 8 monkeys (species unknown) were used for this research.

7. Welfare and housing conditions

The Ministry of Public Health, as well as the Ministry of Education and Environmental Protection regularly commission projects concerning the study or application of alternative methods for animal experiments or husbandry. Some of the projects which are specifically related to primates are mentioned below. They all concern the housing of macaques.

In 1979, a multi-disciplinary working group was formed to make recommendations for housing of macaques under laboratory conditions. The reason was dissatisfaction with the single caging, which is used as the standard procedure in long-term housing of these animals.
The group concluded that long-term individual caging leads to persistent abnormal behaviour. Guidelines were formulated for developing more satisfactory social housing systems and the improvement of cages used in individual housing; a certain amount of diversion, freedom of movement and safety should be provided (Goosen et al. ,1984).

The Ministry of Public Health has financed some other housing projects. In 1983, a project was started at the TNO Primate Centre. The housing of Rhesus monkeys was studied in relation to the prevention of abnormal behaviour (Goosen, 1986).
In 1985, another project was commissioned, concerning the improvement of the housing of Crab-eating macaques at RIVM Bilthoven.

In October 1984, a connection between the Dutch Animal Protection League and the Dutch League for the Abolition of the Vivisection published a black book concerning animal experiments conducted at the REP-Institutes TNO at Rijswijk (the Radiobiological Institute, the Institute for Experimental Gerontology and the Primate Centre). TNO was charged of carelessness and negligence in the use and husbandry of laboratory animals.
On account of these complaints, the Veterinary Public Health Inspectorate started an investigation. They came to the conclusion that the findings did not support the blackbook. Although there had been incidents, nothing was wrong structurally (Zodoende 1986). The Inspectorate did make some critical remarks concerning the supervision of the welfare of the animals, the education in animal handling and the internal dealing with complaints.
In April 1986, a counter report was published by the animal welfare groups. The Inspectorate had not carried out the investigation properly and it was not as thorough and

indepentent as it should have been. In answers to questions from Parliament, the Undersecretary of the Department of Public Health stated that this counter report did not give him reason to doubt the scrutiny and independence of the Inspectorate (Zo doende, 1985).
An evaluation of this affair showed that out of 61 complaints made by the animal welfare groups, 36 were seen as false, 16 were seen as discutable, and 9 were seen as true. However, the Inspectorate had made a lot of it's judgements on trivial grounds too (van Akker & Spruit, 1986).

8. Alternative methods

The magnitude of the number of monkeys, needed for vaccine production by RIVM, was reduced by two new techniques. Since 1972 the kidney-perfusion technique has been applied. With this method, the production of vaccine became more efficient and the number of monkeys required, decreased by 700 per year.
In 1975, RIVM started breeding Crab-eating macaques. This became successful towards the end of the seventies. Due to this success, use of "clean" (uncontaminated) animals, of a high virological quality could be made. It became possible to apply a new technique relating to the cultivation of tissues. The utilization of one captive-bred monkey rendered the import of 50 animals superfluous.
RIVM also uses monkeys for the control of effectiveness and safety of vaccines. Increasingly, however, rats are used for this purpose instead of monkeys. In addition the new technique for tissue-cultivation restricted the number of monkeys needed.

Other projects have been started that aim at the reduction of animal experiments, for instance in the field of toxicology. These bear no specific relation to the use of primates.

9. Survey of institutions, species and numbers

The research establishments which held primates during 1986 are listed in table V.5: six universities, an inter-university institute for ophthalmology, two university hospitals, the State Institute for Public Health and Environmental Protection, the Organization for Applied Scientific Research and one pharmaceutical industry.
With the exception of Utrecht University, these institutions have all been granted exemption for the possession of certain primate species. The holders of an exemption are obliged to provide annual surveys to the Ministry.
Specimens of several species may be delivered to other institutions with such an exemption. They are:

- Common marmoset (Callithrix jacchus)
- Crab-eating macaque (Macaca fascicularis)
- Pigtail macaque (Macaca nemestrina)
- Stumptailed macaque (Macaca arctoides)
- Rhesus monkey (Macaca mulatta)
- Chimpanzee (Pan troglodytes)

17 Vervet monkeys (Cercopithecus aethiops) of the RIVM appeared lacking in the files of both Ministries.

In most cases the table gives only the total number of animals per institution; the number per species could not always be given. However, it is apparent that the Rhesus monkey is represented in the largest number, followed by the Crab-eating macaque. The species mentioned most often are the Rhesus monkey and Stumptailed macaque: during 1986 they were represented at five institutions.

Three institutions are discussed separately: RIVM, which produces vaccines, and used to be a major consumer of primates caught in the wild; the Laboratory for Comparative Physiology of Utrecht University, which studies natural behaviour; and the Primate Centre TNO, which has a special place amongst Dutch institutions, because of its extensive stock and future plans for Aids-research.
The information given in the following sections, has been based on interviews with spokesmen for the institutions. When information was derived from other sources, this is indicated.

9.1 Lab. voor Vergelijkende Fysiologie - Utrecht University

Amongst other things, this laboratory engages in the study of animal behaviour. It has studied social behaviour of Crab-eating macaques (Macaca fascicularis) since 1966 and chimpanzees (Pan troglodytes) since 1971.
Research has focussed on dominance structures and development of behaviour. Both topics were combined, for instance, in a study on the effects of the hierarchic status of females and the future status of their young. In the years to come, research will focus on stress and its influence on social behaviour and relationships within the hierarchy.

The laboratory has laid down its criteria for determining whether the particular research programs are acceptable from an ethical and scientific point of view. The idea is that, when these animals are used for experiments, import from the wild is unnecessary.
Animals have been transferred to institutions which engage in physiological, dental and veterinary research. In recent years, about 10 animals were transferred to zoos in the East block. At the end of 1987, 46 animals were transferred to Dierenpark Amersfoort. Redundant males are sometimes transferred to other Dutch research institutions.

9.2 Rijks Instituut voor Volksgezondheid en Milieuhygiene (RIVM)

RIVM Bilthoven (State Institute for Public Health and Environmental Protection) makes use of primates mainly for the production of vaccines. This institute used to be a major consumer of primates caught in the wild. At first, Rhesus monkeys were imported, but these proved to be too susceptible to tuberculosis.

For production of polio vaccine, large numbers of Crab-eating macaques were imported throughout the sixties. The highest number of monkeys imported in one year was 6,000. Many of these animals died during transport, as a result of bad housing conditions and diseases. Some 20% of the animals died in quarantine.

Due to alternative techniques, RIVM presently uses about 40 monkeys a year for the production of vaccines and related purposes. Apart from the Crab-eating macaques, RIVM holds a group of 15 Vervet monkeys. The kidneys of this species differ from those of the Crab-eating macaque. Each year, one or two of these animals are used for vaccine production.
The following are given as reasons for the development of new techniques and the breeding of animals:

- Ethical.
- Financial (the importation of animals had become increasingly difficult and expensive).
- Relating to nature conservation.
- Safety (by using "clean" animals, vaccines can be better controlled).

Because of the decrease in the use of monkeys, RIVM has reduced the size of its breeding group. The number of female animals in this group used to be 175; nowadays it is 80.
In recent years, many Crab-eating macaques have been transferred to other research institutes, both in the Netherlands and abroad. Several dozens of animals have been transferred to foreign zoos, e.g. in France and Rumania.

Sometimes, RIVM is compelled to euthanize old monkeys. Other institutions can make use of the organs of these animals. However, animals are never killed at the request of other institutions.

9.3 Primate Centre TNO

The Dutch Organization for Applied Scientific Research (TNO) was established by the government in 1930. Its principal task is to provide results of applied scientific and related research for the benefit of the community. TNO is an independant, non-profit making organization. Research is frequently commissioned by the Dutch authorities and by trade and industry. The organisation's program can be divided into seven main fields of activity, amongst which: public health, defence, nutrition and food.
The Primate Centre TNO was founded in 1970. It has a colony of about 1200 animals. Nearly all the animals are bred by the centre itself. The main species present is the Rhesus Monkey (Macaca mulatta), but there is also a colony of about 115 chimpanzee (Pan troglodytes). This is the only breeding colony of chimpanzees in Western Europe.
In January 1987, the Centre's collection of primates consisted of 1,011 Rhesus monkeys, 118 chimpanzees, about 50 Common marmosets and 8 Stumptailed macaques. The Centre also owns the group of Rhesus monkeys kept at Safaripark Beekse Bergen.

The group of Rhesus monkeys at the Primate Centre TNO have existed since 1972. The genetic lines within the group have been

thoroughly studied through out the years. Because of this, the animals are considered especially suitable for the performance of various kinds of transplants.
The Primate Centre TNO has its own research activities in the field of immunology, virology and ethology. Apart from these activities, the Centre provides research facilities for parties outside TNO, both from universities and industry.
The Primate Centre TNO provides other institutions with animals. It also supplies primate blood and tissue samples.
At the end of 1986, the Primate Centre TNO considered reducing the chimpanzee colony. Chimpanzees were used mainly for hepatitis B research (a viral liver infection). But to an increasing extent, the hepatitis vaccine is produced by means of genetically manipulated bacteria (Anon. 1987). The news of this possible reduction of the colony spread quickly. The Primate Centre TNO received many offers, who mounted up to $20,000 (about ƒ40,000) per animal.

The Primate Centre TNO has systematically bred chimpanzees since 1970. Until the beginning of 1988, 101 young were born; 7 of these were born in 1987. In recent years, the reproduction has been purposefully restricted by means of contraceptive injections. But also the housing conditions (lack of space) have led to a relative decrease in reproduction rates.
In principle, no chimpanzees are traded. Sometimes, however, animals which do not fit in a group are transferred to zoos. Up until now, 15-20 chimpanzees have been tranferrred to both Dutch and foreign zoos. Four chimpanzees were taken over by Ouwehands Dierenpark. In 1986, 12 animals were placed elsewhere. Due to the restriction of breeding, only 3 were transferred in 1987.

Rhesus monkeys are not bought or sold. Sometimes animals are transferred to universities. Incidentally, a single Rhesus monkey was received from Artis. Every year, a few Rhesus monkeys and Crab-eating macaques are received from private owners.
The Stumptailed macaques are not bred anymore. At the present the Centre has no need for this species. In the future, all Stumptailed macaques will be transferred to zoos.
In 1986, 60 Common marmosets were transferred to reception centre De Apenhof. The breeding of Common marmosets has recently been restarted for malaria research.
In future, the Primate Centre TNO will perhaps acquire Night monkeys (Aotus trivirgatus) for malaria research.

The Primate Centre TNO imposes restrictions on itself concerning the use of primates as laboratory animals. According to a spokesman, the Centre strives for optimal conditions in respect to the wellbeing of the animals. There is an ethical commission for the approvement of animal experiments, including people who are not located to TNO.
Increasinly, the primates are being kept in groups which can make use of outside enclosures. Both on a national and international level, the Centre tries to ensure that primates will be used for sound medical research only. The performing of experiments should be restricted to a few organizations which share an open policy and keep in touch with animal protection groups.

Establishment	Species	Nr	Breeding
Academisch Ziekenhuis Utrecht	-	1	
Academisch Ziekenhuis Groningen	Macaca arctoides	-	
Erasmus Universiteit Rotterdam	Macaca nemestrina	13	+
Interuniversitair Ooqheelkundig Instituut Amsterdam	Macaca mulatta	4	
Katholieke Universiteit Nijmegen	Callithrix jacchus	-	
	Macaca arctoides	-	
	Macaca fascicularis	-	+
	Macaca mulatta	-	+
Organon (farmaceutical industry)*	Total:	187	
	Macaca arctoides	31	
	Pan troglodytes	8	
Primaten Centrum TNO	Total:	39	
	Callithrix jacchus	61	+
	Macaca arctoides	19	+
	Macaca mulatta	998	+
	Pan troglodytes	116	+
Rijksinstituut voor Volksgezondheid & Milieuhygiëne	Total:	1194	
	Cercopith. aethiops	17	
	Macaca fascicularis	401	+
Rijksuniversiteit Groningen	Total:	418	
	Macaca arctoides	-	
	Macaca mulatta	-	
Rijksuniversiteit Utrecht Universiteit van Amsterdam Vrije Universtiteit Amsterdam	Total:	6	
	Macaca fascicularis	136	+
	Callithrix jacchus	69	+
	Callithrix jacchus	-	+
	Macaca mulatta	-	+
Total number of specimens:	Total:	23	
		2090	

Table V.5
Primate species and the number of specimens kept by research establishments during 1986.

\+ : this species is bred by the establishment concerned.
\- : number or name of primate species unknown.

* : one more company possessed primates in 1986. During that year, the animals (7 Callithrix jacchus) were transferred to the TNO Primate Centre. They have been listed as being in the possession of the latter.
** : It is possible that animals that were exchanged over the year are listed twice, or not listed at all. In several cases the date of stock-taking at the establishment is unknown.

Source: information provided by the Ministry of Agriculture and Fisheries, the Ministry of Public Health and some of the institutions.

VI. COMMERCIAL USE

This chapter pays attention to the strictly commercial use of primates for circus and media purposes. The Scientific Advisory Commission (see chapter I) has taken the standpoint that an explicitly restrictive policy must be pursued on the display of threatened exotic animal species by circuses and training establishments.

1. Circuses

The most recent source of information on the subject of circus animals is a survey of species and numbers of circus animals over 1984 (De Gier, 1985):

Circus	"Monkey"		Chimpanzee	
	perf.	non-perf.	perf.	non-perf.
Bongo	1			
Holliday		1		
Mullens	1		5	2
Renz				1
Aramannt		2		
Total:	2	3	5	3

Table VI.1
Performing and non-performing primates at circuses.

No information is provided on the origins of these particular animals.
The performance of the five chimpanzees is described as "the imitation of human behaviour". They are dressed , wear collars and are tied to ropes. The animals have to drive a scooter, bicycle and motorcycle; they go to bed and manipulate a telephone.
The figures above refer to so called "tent circuses". No figures are available concerning Christmas circus shows at theatres. However, Chimpanzees are known to be part of such shows in 1983 and 1984.
As to import and export: one EC certificate (see chapter I and Appendix II) was issued in 1986, concerninq four pre-convention chimpanzees which were transported by Circus Mullens. Most of the imports and exports which are classified as "commercial" (see apendix I) concerned the Holiday on Ice Show. Although, strictly spoken, this is not a true circus, its import amd export entries are summarized here:

- In 1986, three chimpanzees (source unknown) were imported from Switzerland.
- In 1987, another three (which were captive-bred) were allowed to be imported from Switzerland, and two (pre-convention) from China.
- Also in 1987, EC certificates were provided concerning three animals (2 pre-convention and 1 captive-bred).

One exemption concerning the possession of three chimpanzees was still valid at the end of 1987.

2. Casting Agency and Artist Promotions

One organization in the Netherlands engages in animal training and hiring: Animal and Artist Promotions (A.A.P.; this is nót the reception centre St. AAP). It functions as a casting agency for television commercials, movies, photographs and advertising. The agency uses many exotic animals. Sometimes primates ar used, mainly chimpanzees. Recently, for a Dutch movie Crab-eating macaques, mangabeys and a Rhesus monkey were used. According to the manager of this agency, no long training periods are needed. The animals are always trained on location, by rewarding the desired actions.
The organization does not have primates in its possession. Primates are rented and come from abroad, often Belgium. The correct procedures were not followed, and some illegal imports from Belium took place. Therefore, problems arose with the Ministry of Agriculture and Fisheries and primate protection organisations. This is the most important reason why the agency intends to decrease its utilization of primates.

3. Media

In 1986 and 1987, primates were occasionally shown on TV-shows. Not surprisingly, young apes are the most popular. Most cases concern young zoo animals that are being hand reared, accompanied by their keeper. Sometimes, however, casting agency A.A.P. is hired.

In recent years, a Dutch TV commercial was broadcasted which showed a young chimpanzee in the arms of an actor impersonating Tarzan.
In 1987, broadcasting of this commercial was stopped, possibly as a result of protests by the International Primate Protection League in the Netherlands. This organization disapproves of media items in which monkeys or apes are humanized, or depicted as suitable pets.
IPPL Nederland also protested against one other TV item, a video clip, and one commercial and two photo series in magazines. The Ministry of Agriculture and Fisheries endorsed these protests.

VII. RECEPTION CENTRES

1. Introduction

Four large zoos more or less had an asylum function during the seventies: Dierenpark Wassenaar, De Apenheul and especially the zoos Artis and Blijdorp. In recent years, primates were offered to these zoos only incidentally and these few animals were hardly ever adopted permanently.
At the moment there are two reception centres for primates in the Netherlands: "Stichting AAP" and "De Apenhof". These centres almost completely fulfil the asylum function concerning primates. The reception centres operate on a private, non commercial basis. Both were founded at the beginning of the 1970's, to accommodate former pet monkeys. Nowadays, they also adopt former laboratory and zoo primates. Neither of the centres receives a permanent subsidy from the goverment.

Both reception centres strive to compose social groups of primates (in accordance with a guideline from the Ministry of Agricultire and Fisheries). The motives of the reception centres are, as mentioned by spokesmen from the centres:
- to enhance the well being of the animals;
- to encourage zoos to take over the animals.

The composing of groups is a time absorbing matter. Therefore, not everybody agrees with this policy. One opinion is that it would be better when single aninals were transferred to zoos whenever, and as soon as possible. This would provide possibilities for adopting laboratory primates, which otherwise would be transferred to other research institutes.
The motives mentioned by the centres also apply to the breeding of adopted animals. Breeding surplus animals seems contradictionary. However, it is a fact that zoos are especially interested in obtaining groups of primates of varied age classes.

Table VII gives a survey of the stocks of the reception centres towards the end of 1987. Both centres are discussed separately on the basis of information provided by their managers. Subsequently, recent changes of their collections are reviewed.

2. De Apenhof

Stichting Landelijk Opvangcentrum Uitheemse Diersoorten (National Reception Centre Exotic Animal Species Foundation) "De Apenhof" is managed by Mr. and Mrs. Venema. About 1970, they started with the reception of primates. Gradually they took over all the animals of Mrs. Sicherer-Frijlink, who used to have a reception centre at Bilthoven. In 1976 the Foundation was established. Goals were defined as: the composing of social groups of received individuals, and the transfer of these groups to zoos or educational institutions. The idea behind this is that in this way zoos do not have to face group composition problems, as is the case of the transfer of single animals, so they will proceed more easily to accepting monkeys. To give an example: in this way a group of 24 Crab-eating macaques were transferred to Zoo Eifel, F.R.G. in 1984.

In earlier years the collection almost completely consisted of animals that had been voluntarily disposed of by private owners. At first, species like Crab-eating macaques, Pigtail macaques, Rhesus monkeys and Capuchins were involved. When it became difficult for private persons to obtain these Asiatic and South American species, there was a shift towards African guenons and mangabeys. This trend set in about 1982.
At the end of 1982, the collection reached a peak of 156 primates. Since then, the transfer of animals has gradually been taken over by zoo animal broker Hop. In October 1987, the number of primates at the centre amounted to 27.
Nowadays there's hardly any voluntarily disposing by private persons anymore. Received animals have been:

1. Confiscated by the government.
Most of the former pet animals which are conficated are young (2 to 3 years). The vast majority of these animals have been illegaly imported from Belgium. Also at the harbours of Rotterdam and Vlissingen monkeys are confiscated. Often these were in the possession of sailors who did not have the necessary licences. Apart from customs and police, often trans-shipment companies contact Mr. Venema, who then takes the animals ashore as soon as possible. He is afraid that the ship's captain might get rid of the animal that imposes a problem by putting it overboard. Sometimes this causes problems with customs, because there are no import documents. However, until now Mr. Venema has always succeeded in taking the animals with him.

2. Former laboratory animals.
The reception of former laboratory animals especially involves Common marmosets, but also Crab-eating macaques and chimpanzees. In general a few dozens of animals arrive from laboratories annually. 1986 was an exception: 61 former laboratory animals were received in that year.

3. Zoo animals.
When a group of monkeys is transferred to a zoo, De Apenhof sometimes receives an individual of another species in return because of lack of space at the zoo. Also, confiscated animals sometimes arrive at De Apenhof after having been accommodated by a zoo for a short time.

In general 60 to 70 primates arrive at De Apenhof yearly. In 1987, until the end of October, about 80 animals were transferred from De Apenhof. After intake, a transfer takes at least four weeks, but often much longer. There is no market for monkeys which are physically deformed as a result of rickets. These animals stay for the rest of their lives. The reproduction of animals kept permanently is prevented by castration of the adult male.

In the Netherlands Ouwehands Dierenpark accommodates many animals which came from De Apenhof: Moustached monkeys (Cercopithecus cephus), Blacknosed patas monkeys (Erythrocebus patas patas) and Pigtail macaques.
Of the zoos abroad it's especially Zoo Tirgoviste in Rumania which receives animals in considerable numbers and a broad range

of species (see chapter II). Sometimes De Apenhof composes a group at a zoo itself by sending on individual animals.
The offer of primates to "De Apenhof" was expected to decline in the future. The deposit of laboratory primates has prevented this decline in recent years, and will probably continue to do so.
According to the Foundation, zoos never pay for the animals. De Apenhof has about 1250 supporters and recently received a sum of money from the Dutch Animal Protection League for the construction of outdoor enclosures.

From De Apenhof, two young female chimpanzees had been transferred to the Abuko Nature Reserve in Gambia, where Stella Brewer leads a rehabilitation centre. The first animal (transferred in 1981) died after four years. The second animal (transferred in 1982) was never heard of again. Mr. and Mrs. Venema are sceptical about reintroduction of primates into the wild. It is not a defined objective of De Apenhof anymore.

3. Stichting AAP

Stichting Apen Adoptie & Protectie (Adoption & Protection of Monkeys), founded in 1972, is managed by Mr. and Mrs. Reussien. They are assisted by volunteers and people who were punished in an alternative way after prosecution. The objectives of Stichting AAP are the reception and resocialization of monkeys (and other exotic animals). Should it be possible, these animals would be transferred to their country of origin, but not into the wild: supervising and attending the animals is necessary. As a destiny for the animals, a bona fide zoo or specialised monkey park is the second choice. The condition is made that the animals of a social group will not be separated.
Stichting AAP adopts primates which are disposed of by private persons on a voluntary base. Often the reason is aggressive behaviour, especially biting. When the animals reached maturity, they tried to find a place in the hierarchy within the family. Usually, other pet animals and children were the first victims.
Often the animals which are offered are mentaly disturbed, and sometimes physically deformed as a result of bad housing and feeding conditions.

For years, the number of monkeys at Stichting AAP was about 80, but towards the end of the seventies this number started to rise. At the end of 1982, a peak number of 214 primates was reached. For a long time, Stichting AAP arranged the transfer of animals itself. Since the beginning of 1983, this task has been taken over by zoo animal broker Hop. Also, the notion grew that monkeys and apes that were very dear to the managers of the station could not be kept permanently. Because of these factors and the decrease in private ownership of primates, the collection by and by diminished to the present number of 64. At present, there is less voluntarily disposing by private persons, but it still plays a certain role. Most of the animals which are received have been confiscated by the customs, especially at Schiphol Airport.

Stichting AAP also takes over animals from reception centres in Italy and Belgium. These primates were originally owned by private persons. Furthermore, Stichting AAP in recent years adopted laboratory primates: chimpamzees from the TNO Primate Centre and Stumptailed macaques from Organon.
As for the transfer of primates, the same applies as for De Apenhof. It may be added that primates of Stichting AAP have been transferred to the small zoo "De Achterste Molen" at Epe (see chapter IV).
At the initiative of the Belgium organization Wildpeace, 8 guenons and 2 mangabeys were transferred to national park President Mobutu in Zaire. This took place in 1982. Since then, no other reintroductions have taken place.

Stichting AAP, which also adopts many other exotic species, has no plans for extension. The foundation hopes for a decrease in the supply of primates. In 1987 the Ministry of Agriculture and Fisheries granted a subsidy for once.

4. Recent Transfers

The following can be mentioned about stock changes of both reception centres. The data have been derived from periodical surveys. Deaths that occured are not mentioned here.

From 1 July until 30 October 1987, De Apenhof received:
- 1 Squirrel monkey (Saimiri sciureus)
- 1 Allen's swamp monkey (Allenopithecus nigroviridis)
- 1 Vervet monkey (Cercopithecus aethiops)
- 1 Crab-eating macaque (Macaca fascicularis)
- 2 Pigtail macaques (Macaca nemestrina)

During the same period, the following animals were transferred:
- 1 Brown capuchin (Cebus apella)
- 1 Agile mangabey (Cercocebus galeritus chrysogaster)
- 1 Black mangabey (Cercocebus aterrimus)
- 1 mangabey (Cercocebus agilis)
- 1 Barbary macaque (Macaca sylvanus)
- 2 Crab-eating macaques (Macaca fascicularis)

The survey of Stichting AAP mentions the origins and destinations of animals which were received or transferred. The data refer to a period of more than five months, from 10 April until 20 September 1987.
During this period, the following animals were received:
- 1 Common treeshrew (Tupaia glis) from Emmen Zoo, Holland.
- 1 Common marmoset (Callithrix jacchus) from the AID.
- 1 Spider monkey (Ateles belzebuth) from Zoo Dresden, G.D.R.
- 1 Black mangabey (Cercocebus aterrimus) from Wildpeace, Belgium.
- 1 Redtail monkey (Cercopithicus ascanius) from private persons.
- 1 Vervet monkey (Cercopithicus aethiops) from the police.
- 1 Rhesus monkey (Macaca mulatta) from private persons.
- 1 Crab-eating macaque (Macaca fascicularis) from Lega Antivivisezione Parma, Italy.
- 2 Crab-eating macaques (Macaca fascicularis) from De Apenhof, Holland.

Both zoo animals were temporarily accomodated for animal broker Hop. Transferred were:

- 4 Allen's swamp monkey (Allenopithecus nigroviridis) to San Diego Zoo, U.S.A.
- 1 Black mangabey (Cercocebus aterrimus) to Zoo Tirgoviste, Rumania.
- 2 Black mangabeys (Cercocebus aterrimus) to Bristol Zoo, England.
- 1 Redtail monkey (Cercopithicus ascanius) to Krakau Zoo, Poland.
- 1 guenon (Cercopithecus w. wolfi) to Zoo Tirgoviste, Rumania.
- 5 Stumptailed macaque (Macaca arctoides) to Krakau Zoo, Poland.
- 2 Pigtail macaques (Macaca nemestrina) to De Apenhof, Holland.
- 6 Crab-eating macaques (Macaca fascicularis) to Zoo Budapest, Hungary.
- 1 Whitehanded gibbon (Hylobates lar) to Zoo Magdeburg, G.D.R.

During the same period, 1 Patas monkey (Erythrocebus patas) and 1 Brown capuchin (Cebus apella fatuellus) were born.

Species	De Apenhof	St. AAP	Total
Family Tupaiidae			
Tupaia glis		2	2
Family Callithricidae			
Callithrix jacchus		3	3
Callithrix penicillata		2	2
Family Cebidae			
Ateles belzebuth		2	2
Cebus apella	4		4
Cebus apella fatuellus		4	4
Saimiri sciureus	2		2
Family Cercopithecidae			
Allenopithecus nigrov.	1	1	2
Cercocebus agilis	1		1
Cercocebus aterrimus		2	2
Cercocebus atys		3	3
Cercocebus galeritus		6	6
Cercocebus g. chrysogaster	1		1
Cercopithecus aethiops	1		1
Cercopithecus albogularis		2	2
Cercopithecus ascanius	2		2
Cercopithecus mona mona		2	2
Cercopithecus m. campbelli	2		2
Cercopithecus neglectus	2		2
Cercopithecus nictitans	2		2
Cercopithecus petaurista		5	5
Erythrocebus patas		7	7
Macaca fascicularis	7	11	18
Macaca nemestrina	4		4
Macaca sylvanus		1	1
Papio hamadryas hamadryas		1	1
Papio hamadryas papio		1	1
Family Pongidae			
Pan troglodytes		7	7
TOTAL	29	62	91

Table VII.1
The primate collections of reception centres "De Apenhof" and "Stichting AAP" towards the end of 1987.
De Apenhof : per 30.10.1987.
Stichting AAP: per 20.09.1987.

Source: file of the Ministry of Agriculture and Fisheries.

VII. SUMMARY AND CONCLUSIONS

This report provides a general survey of species and numbers of non human primates in the Netherlands. Legislation concerning trade and possession of exotic animals, as well as legislation concerning primate utilisation for scientific purposes are reviewed briefly. Data on import, (re-)export, various collections, scientific experiments and commercial use are presented and evaluated.

LEGISLATION
Legal import and use of wild-caught primates have rapidly decreased since the enforcement of the BUD Act in 1977. In spite of the strict implementation of protective legislation, there are still indications of illegal transactions involving considerable numbers of primates.
During this investigation a few illegal imports were intercepted by custom officers. Several cases of illegal, commercial utilisation of primates occurred in the last few years.
In 1987 serious doubts arose concerning the validity of documents indicating the status 'captive bred' issued by the Cuban management authority for the export of chimpansees. Suspicion has risen that the so called 'captive bred' chimpansees have been smuggled into Cuba.

IMPORT and (RE-)EXPORT
A survey is given of import and (re-)export of primates for the years 1984-1986 and the larger part of 1987. Transactions are dominated by the transit-trade in wild-caught Vervet monkeys from Kenya. Most Vervets are re-exported to the U.S.S.R. for research purposes.
Trade in protected (Appendix I) specimens concerns only a few animals. Most of these are captive bred. Trade within the EC is dominated by captive bred specimens.

PRIVATE POSSESSION
Although primates are still being kept by licenced, private owners, in future this will become more and more restricted to serious breeders. At the moment there are 19 private collections registered. The exemptions for these collections apply to 155 animals. Marmosets an Squirrel monkeys are most popular.

ZOO COLLECTIONS
A total of 1516 primates is kept at eight large, and nine small zoos. 95% of these are being kept at the large zoos, this amounted to 1428 specimens towards the end of 1987. The family of the Cercopithecidae is represented with the largest number of species and specimens. Bolivian squirrel monkeys and Hamadrian baboons are kept in the largest numbers.
In spite of the goal of the modern zoos to strive after a decrease in species numbers and an increase in specimens per species, this is not shown by the data presented in this report. Numbers of species and specimens appear to be more or less constant over the years as far as primates are concerned.

RESEARCH
In 1986 the total number of primates kept in the twelve different research institutes was about 575 higher than the total number at the zoo-collections and amounted to approximately 2090 specimens. Rhesus monkeys and Crab eating macaques are represented in the largest numbers.
In 1986 a total of 553 experiments were conducted for mainly scientific

purposes. More than 50% of these experiments involved the killing of the animal. The world wide interest in AIDS research has caused an increase in the demand for chimpansees as research models. From a scientific point of view, however, it is doubtful that the use of large numbers of chimpansees will lead to succesful results. In the Netherlands, some research on chemical warfare is still done on primates, although scientific purpose and ethical aspects are subject of discussion.
Due to legislative measures and improvement of research techniques, primate utilisation for research purposes has decreased with 73% since 1977. It is expected that this decrease will continue because of the high costs of housing and breeding, the development of alternative research methods and the growing awareness that experiments can be performed on other species than primates.
At present, research institutes are self-supporting and all primates used are captive bred. Exchanges take place between research institutes and sometimes zoos are involved.
Considering the sharp decrease in the use of primates at the Dutch research institutes, the large and increasing number of Vervet monkeys transported to the U.S.S.R. for the 'production of vaccine' is most remarkable.

RECEPTION CENTRES
Due to the restrictive policy concerning utilisation and possession, large numbers of primates have been transferred to the two reception centres in the Netherlands. Nowadays, more and more surplus laboratory primates are placed in these centres instead of animals from private owners. The centres transfer many primates, preferably in newly formed social groups, via an animal broker, to bona fide zoos.

Although administrative systems proved to be sufficient to make a near-complete inventory of the primates in the Netherlands, and although the Dutch protection of primates is generally speaking excellent, a few remarks and some recommendations can be made.

1. The various administrations at the Ministery of Agriculture and Fisheries on import, export, private possession, zoo and laboratory collections is not easily accessible. Data on private possession were not updated and collection of these data was very time consuming.
It was difficult to check the validity of lot of import and export permits. For example there were conflicting data on the import of wild-caught Squirrel and Rhesus monkeys. 17 Vervet monkeys were lacking completely in the files of both the Ministery of Agriculture and Fisheries and the Ministery of Welfare, Public Health and Culture. The computerised administration that is being installed at the moment is expected to bring improvements in some of the difficulties mentioned above.
For the sake of clarity it is recommended that, when transit trade is the purpose of import this will be indicated (for example as 'purpose') in the trade statistics.

2. Special attention to the tracing of illegal trade is recommended in the year 1992, when the EC market will be opened to inter EC-trade. Possibilities for illegal transactions will increase considerably with the dissapearance of customs-control at the inner EC-borders. With an increase in specialised personnel, the expected increase of illegal

trade might be forced back. As the smuggling of endangered species often is very profitable it is recommendable to impose legal penalties on the value of the smuggled goods.

3. With regard to the still existing problems in the breeding of primates in zoos can be remarked that improvement of housing-conditions, exchange of animals and scientific research on genetic breeding programmes can improve breeding results. In this respect the concentration of primates in specialized institutes is recommendable. To improve the possibilities of animal exchange between zoos and/or laboratories it is also highly recommendable that a computerized administration is developed as soon as possible.

4. The review of experiments on primates should be performed at all institutes by a pluralistic ethical commission.

5. Scientific research on the impact of trade in Vervet monkeys on wild populations is recommended. If the 'harvest' of this species does not prove to be sustainable, and populations show a decrease as a result of this (quite voluminous) trade, it is recommended that legal protection of the Vervet monkey be improved.

6. In general a better distribution of information on the necessity for preservation of endangered species may cause a change in the attitude towards the habit of keeping endangered animals as pets. As the demands for primates still comes from the rich western countries the mentioning of a 'mea culpa' can't be forgotten when third world countries are pressed to stop primate hunting.

All wild populations of the more than 200 different species of non-human primates are threatened in their existence. An important, not commonly known difficulty for the preservation of these animals is the low success rate of programmes to rehabilitate captive-bred and captured animals into their natural environment. Research on rehabilitation experiments show negative results. This aspect stresses the necessity to a strict control to prevent illegal trade and utilisation of wild-caught primates, and to keep the market for these threatenend species at an absolute minimum.

SAMENVATTING EN KONKLUSIES

In dit rapport wordt een overzicht gegeven van het apenbestand in Nederland. De wetgeving met betrekking tot handel en bezit van bedreigde uitheemse diersoorten en de wetgeving met betrekking tot het gebruik van apen door laboratoria worden kort uiteengezet. De gegevens van import, (re-)export, verschillende kollekties, wetenschappelijke experimenten en kommercieel gebruik worden gepresenteerd en geëvalueerd.

WETGEVING

De legale import en het gebruik van wildvang apen is sterk gedaald sinds de totstandkoming van de wet op de bedreigde uitheemse diersoorten (wet BUD) in 1977. Ondanks de strikte naleving van de wettelijke bepalingen zijn er echter nog steeds aanwijzingen dat er illegale transakties plaatsvinden. Tijdens dit onderzoek zijn bijvoorbeeld enkele illegale zendingen door de douane in beslag genomen. In de afgelopen jaren is er meerdere malen een illegaal commercieel gebruik van apen gekonstateerd. In 1987 is er ook twijfel ontstaan over Cubaanse exportdokumenten waarop wellicht ten onrechte was vermeld dat de betrokken chimpansees in gevangenschap waren gefokt. Er zijn aanwijzingen dat de zo genaamd gefokte dieren in Cuba zijn binnen gesmokkeld.

IMPORT en EXPORT

Er is een overzicht gegeven van de import en (re-)export cijfers van de jaren 1984 t/m 1986 en een gedeelte van 1987. De transacties worden overheerst door de doorvoer van groene meerkatten uit Kenia. De meeste groene meerkatten worden voor wetenschappelijke doeleinden doorgevoerd naar de Sovjet Unie. De handel in beschermde (Appendix I) soorten is beperkt tot een gering aantal individuen waarvan de meeste zijn gefokt. De handel binnen de EG betreft voornamelijk gefokte dieren.

PRIVE BEZIT

Hoewel er nog steeds apen als 'huisdier' worden gehouden door enkele prive bezitters zal dit in de toekomst meer en meer worden beperkt tot fokspecialisten. Op dit moment zijn er ook 19 prive-collecties geregistreerd, hierin zijn 155 dieren ondergebracht. In deze prive-collecties zijn oeistiti's en doodshoofdaapjes het meest vertegenwoordigd.

DIERENTUINEN

In negen kleine en acht grote dierentuinen worden tezamen 1516 primaten gehouden. 95% van deze dieren wordt in de grote dierentuinen gehouden. De familie Cercopithecidae is met de meeste soorten en het grootste aantal dieren per soort vertegenwoordigd.
Ondanks het streven van de moderne tuinen om te komen tot een verzameling met weinig soorten en een groot aantal dieren per soort, blijkt uit de hier gepresenteerde gegevens dat het aantal soorten en het aantal dieren per soort gemiddeld ongeveer gelijk is gebleven.

ONDERZOEK

In 1986 was het aantal primaten dat in laboratia werd gehouden ongeveer 2090 en lag dus ongeveer 575 hoger dan het totaal aantal van de in dierentuinen gehuisveste primaten. Rhesus-apen en Java-apen worden in laboratoria het meeste gehouden. In 1986 zijn er 553 experimenten, vnl. voor wetenschappelijke doeleinden, op apen uitgevoerd. In meer dan 50% van de experimenten werden de proefdieren gedood. De AIDS-research heeft

een toename in de vraag naar chimpansees als proefdier veroorzaakt hoewel het op dit moment nog niet vaststaat dat het gebruik van grote aantallen van deze dieren zal leiden tot succesvolle proefresultaten.
In Nederland vindt nog steeds onderzoek bij primaten plaats naar de gevolgen van het gebruik van chemische wapens.
Het laboratorium gebruik van primaten is dankzij de totstandkoming van beschermende wetgeving en verbeterde onderzoekstechnieken afgenomen met 75 % sinds 1977.
Op het moment zijn de laboratoria dankzij de fok van primaten volledig selfsupporting in hun verbruik. Er vindt uitwisseling plaats tussen laboratoria onderling en soms zijn hierbij ook dierentuinen betrokken.

OPVANG CENTRA
Als gevolg van de beschermende maatregelen betreffende het gebruik en het bezit van primaten is er een groot aantal dieren naar opvang centra over gebracht. Tegenwoordig zijn steeds minder dieren afkomstig uit privebezit maar komen steeds meer dieren uit laboratoria in deze centra terecht. De dieren worden, bij voorkeur in nieuw gevormde sociale groepjes overgeplaatst naar bona fide dierentuinen in binnen- en buitenland.

Hoewel het mogelijk is gebleken om uit de diverse administraties een bijna kompleet overzicht te geven van het apenbestand in Nederland en de bescherming van primaten in het algemeen uitstekend geregeld is, kunnen hier toch een aantal kanttekeningen worden geplaatst en aanbevelingen worden gedaan.

1. De opslag van gegevens bij de het Ministerie van Landbouw en Visserij is nog niet geautomatiseerd en bleek ten gevolge hiervan in sommige gevallen niet makkelijk toegankelijk. De data betreffende prive bezit waren niet 'up-date' en het uitzoeken van deze gegevens kostte te veel tijd om de een volledig overzicht te kunnen maken. De wettige geldigheid van veel vergunningen was in veel gevallen moeilijk te verifieren. Het mag worden verwacht dat de automatisering van de administratie veel van de bovengenoemde problemen zal oplossen.
Ter bevordering van de overzichtelijkheid verdient het aanbeveling om, wanneer er sprake is van Transit-verkeer, dit in de import statistieken als zodanig aan te geven (bijvoorbeeld onder 'purpose').

2. Het verdient aanbeveling om extra aandacht te besteden aan de opsporingsproblematiek in 1992; wanneer de grenzen voor EG handelsverkeer worden opengesteld. Een groter aantal gespecialiseerde opsporingsbeambten zal de verwachtte toename in illegale handelingen kunnen beperken. Ook kan de maximum strafmaat, die thans op overtredingen staat, worden aangepast aan de waarde van de gesmokkelde goederen.

3. Voor het oplossen van de problemen bij de fok van primaten kan worden aanbevolen dat de huisvesting in sommige gevallen wordt verbeterd. Ook kan een concentratie van primaten in gespecialiseerde fok centra verbetering brengen.

4. Het gebruik van laboratorium dieren moet op alle instituten worden beoordeelt door een speciaal hiervoor aangestelde commissie.

5. De invloed van de handel in groene meerkatten op de wilde populaties moet wetenschappelijk worden onderzocht. Mocht dit onderzoek aantonen dat de populatieomvang afneemt dan moet de wettelijke bescherming van deze soort worden verbeterd.

6 In het algemeen kan een betere informatievoorziening betreffende de redenen van het verbod om exotische huisdieren te houden wellicht een mentaliteitsverandering teweeg brengen.
Daar de vraag naar primaten nog steeds uit het rijke westen afkomstig is zou het van een eenzijdige benadering getuigen om slechts op derde-wereld landen druk uit te oefenen om de jacht op primaten te stoppen.

Alle in het wild levende populaties van de meer dan 200 soorten apen, worden bedreigd in hun voortbestaan. Een belangrijk, niet algemeen bekend probleem voor het behoud van apen is de geringe mogelijkheid om gevangen of gefokte dieren te rehabiliteren in hun oorspronkelijke woongebied. De noodzaak tot optimale kontrole ter voorkoming van illegale transakties en het zo klein mogelijk houden van de markt voor wildvang apen wordt hierdoor extra benadrukt.

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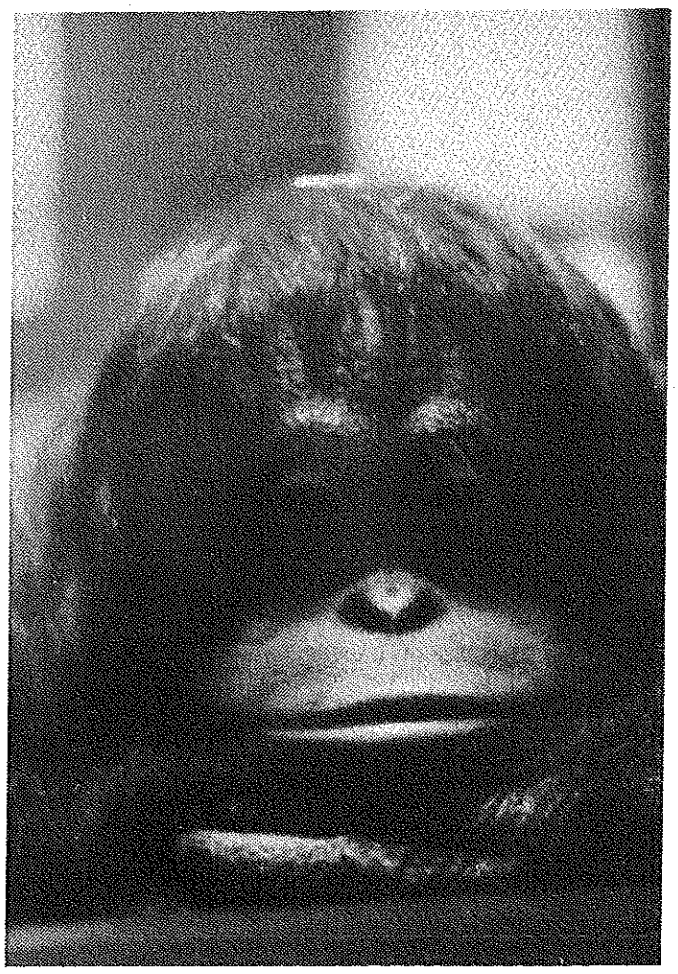

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APPENDICES

Appendix 1

Primate import and re-export of the Netherlands 1984 and 1985.

Table 1: import 1984
Table 2: export/re-export 1984
Table 3: import 1985
Table 4: export/re-export 1985

Source: Trade statistics for the year 1984 and 1985, composed by the WTMU.

Appendix 2

Primate import and re-export of the Netherlands 1986 and 1987 (up till 10 October).

Table 1: import 1986
Table 2: export 1986
Table 3: re-export 1986
Table 4: EC certificates 1986
Table 5: import 1987
Table 6: export 1987
Table 7: re-export 1987
Table 8: EC certificates 1987

Source: Files from the Ministry of Agriculture and Fisheries.

Appendix 3

Primate collections of the zoos.

Table 1: present collections of the large zoos
Table 2: present collections of the small zoos

Index of codes used in Appendix 1 and 2

Terminology indicating purposes of import and export:
B = breeding
C = commercial
I = seized on entry
S = scientific
U = unknown country of origin
Z = zoo

Terminology indicating kind of transactions:
C = commercial
L = laboratory
P = private person
T = trader or broker
X-Y = from x to y
Z = zoo
* = the licence had not been used yet at 10-10-1987

Terminology indicating sources:
C = captive-bred
P = pre-convention
U = unknown
W = wild-caught

List of ISO-codes: see next page

ISO-CODE	NAME-ENG
AD	ANDORRA
AE	UNITED ARAB EMIRATES
AF	AFGHANISTAN
AG	ANTIGUA AND BARBUDA
AI	ANGUILLA
AL	ALBANIA
AN	NETHERLANDS ANTILLES
AO	ANGOLA
AQ	ANTARCTICA
AR	ARGENTINA
AS	AMERICAN SAMOA
AT	AUSTRIA
AU	AUSTRALIA
AW	ARUBA
BB	BARBADOS
BD	BANGLADESH
BE	BELGIUM
BF	BURKINA FASO
BG	BULGARIA
BH	BAHRAIN
BI	BURUNDI
BJ	BENIN
BM	BERMUDA
BN	BRUNEI DARUSSALAM
BO	BOLIVIA
BR	BRAZIL
BS	BAHAMAS
BT	BHUTAN
BU	BURMA
BV	BOUVET ISLAND
BW	BOTSWANA
BY	BYELORUSSIAN S.S.R.
BZ	BELIZE
CA	CANADA
CC	COCOS (KEELING) ISLANDS
CF	CENTRAL AFRICAN REPUBLIC
CG	CONGO
CH	SWITZERLAND
CI	COTE D'IVOIRE
CK	COOK ISLANDS
CL	CHILE
CM	CAMEROON
CN	CHINA
CO	COLOMBIA
CR	COSTA RICA
CS	CZECHOSLOVAKIA
CU	CUBA
CV	CAPE VERDE
CX	CHRISTMAS ISLAND
CY	CYPRUS
DD	GERMAN DEMOCRATIC REPUBLIC
DE	GERMANY, FEDERAL REPUBLIC OF
DJ	DJIBOUTI
DK	DENMARK
DM	DOMINICA
DO	DOMINICAN REPUBLIC

ISO-CODE	NAME-ENG
DZ	ALGERIA
EC	ECUADOR
EG	EGYPT
EH	WESTERN SAHARA
ES	SPAIN
ET	ETHIOPIA
FI	FINLAND
FJ	FIJI
FK	FALKLAND ISLANDS (MALVINAS)
FM	MICRONESIA
FO	FAEROE ISLANDS
FR	FRANCE
GA	GABON
GB	UNITED KINGDOM
GD	GRENADA
GF	FRENCH GUIANA
GH	GHANA
GI	GIBRALTAR
GL	GREENLAND
GM	GAMBIA
GN	GUINEA
GP	GUADELOUPE
GQ	EQUATORIAL GUINEA
GR	GREECE
GT	GUATEMALA
GU	GUAM
GW	GUINEA-BISSAU
GY	GUYANA
HK	HONG KONG
HM	HEARD AND MC DONALD ISLANDS
HN	HONDURAS
HT	HAITI
HU	HUNGARY
ID	INDONESIA
IE	IRELAND
IL	ISRAEL
IN	INDIA
IO	BRITISH INDIAN OCEAN TERRITORY
IQ	IRAQ
IR	IRAN (ISLAMIC REPUBLIC OF)
IS	ICELAND
IT	ITALY
JM	JAMAICA
JO	JORDAN
JP	JAPAN
KE	KENYA
KH	KAMPUCHEA
KI	KIRIBATI
KM	COMOROS
KN	ST KITTS - NEVIS
KP	KOREA, DEMOCRATIC PEOPLE'S REPUBLIC OF
KR	KOREA, REPUBLIC OF
KW	KUWAIT
KY	CAYMAN ISLANDS
LA	LAO PEOPLE'S DEMOCRATIC REPUBLIC
LB	LEBANON
LC	ST LUCIA

ISO-CODE	NAME-ENG
LI	LIECHTENSTEIN
LK	SRI LANKA
LR	LIBERIA
LS	LESOTHO
LU	LUXEMBOURG
LY	LIBYAN ARAB JAMAHARIYA
MA	MOROCCO
MC	MONACO
MG	MADAGASCAR
MH	MARSHALL ISLANDS
ML	MALI
MN	MONGOLIA
MO	MACAU
MP	NORTHERN MARIANA ISLANDS
MQ	MARTINIQUE
MR	MAURITANIA
MS	MONTSERRAT
MT	MALTA
MU	MAURITIUS
MV	MALDIVES
MW	MALAWI
MX	MEXICO
MY	MALAYSIA
MZ	MOZAMBIQUE
NA	NAMIBIA
NC	NEW CALEDONIA
NE	NIGER
NF	NORFOLK ISLAND
NG	NIGERIA
NI	NICARAGUA
NL	NETHERLANDS
NO	NORWAY
NP	NEPAL
NR	NAURU
NT	NEUTRAL ZONE
NU	NIUE
NZ	NEW ZEALAND
OM	OMAN
PA	PANAMA
PC	FORMERLY PACIFIC ISLANDS (TRUST TERRITORY)
PE	PERU
PF	FRENCH POLYNESIA
PG	PAPUA NEW GUINEA
PH	PHILIPPINES
PK	PAKISTAN
PL	POLAND
PM	ST PIERRE AND MIQUELON
PN	PITCAIRN
PR	PUERTO RICO
PT	PORTUGAL
PW	PALAU
PY	PARAGUAY
QA	QATAR
RE	REUNION
RO	ROMANIA
RW	RWANDA
SA	SAUDI ARABIA

ISO-CODE	NAME-ENG
SB	SOLOMON ISLANDS
SC	SEYCHELLES
SD	SUDAN
SE	SWEDEN
SG	SINGAPORE
SH	ST HELENA
SJ	SVALBARD AND JAN MAYEN ISLANDS
SL	SIERRA LEONE
SM	SAN MARINO
SN	SENEGAL
SO	SOMALIA
SR	SURINAME
ST	SAO TOME AND PRINCIPE
SU	UNION OF SOVIET SOCIALIST REPUBLICS
SV	EL SALVADOR
SY	SYRIA
SZ	SWAZILAND
TC	TURKS AND CAICOS ISLANDS
TD	CHAD
TF	FRENCH SOUTHERN TERRITORIES
TG	TOGO
TH	THAILAND
TK	TOKELAU ISLANDS
TN	TUNISIA
TO	TONGA
TP	EAST TIMOR
TR	TURKEY
TT	TRINIDAD AND TOBAGO
TV	TUVALU
TW	TAIWAN, PROVINCE OF
TZ	TANZANIA, UNITED REPUBLIC OF
UA	UKRAINIAN S.S.R.
UG	UGANDA
UM	UNITED STATES MINOR OUTLYING ISLANDS
US	UNITED STATES
UY	URUGUAY
VA	VATICAN CITY STATE (HOLY SEE)
VC	SAINT VINCENT AND THE GRENADINES
VE	VENEZUELA
VG	BRITISH VIRGIN ISLANDS
VI	VIRGIN ISLANDS, U.S.
VN	VIET NAM
VU	VANUATU
WF	WALLIS AND FUTUNA ISLANDS
WS	SAMOA
XC	CARIBBEAN
XE	EUROPE
XF	AFRICA
XM	SOUTH AMERICA
XS	ASIA
XX	COUNTRY UNKNOWN
YD	YEMEN, DEMOCRATIC
YE	YEMEN
YU	YUGOSLAVIA
ZA	SOUTH AFRICA
ZM	ZAMBIA
ZR	ZAIRE
ZW	ZIMBABWE

Table 1

1984

IMPORT TO NETHERLANDS

SPECIES	COUNTRY OF EXPORT	ORIGIN	IMPORTS REPORTED (PURPOSE)	EXPORTS/RE-EXPORTS REPORTED (PURPOSE)
APPENDIX I				
Lemur catta	CA			2 live (Z)
Papio sphinx	DD			1 live (captive bred)
Gorilla gorilla gorilla	CM		7 live	
Pan troglodytes	AT		7 live (captive bred)	
APPENDIX II				
Perodicticus potto	GH		1 live	
Cebuella pygmaea	SE		1 live (captive bred)	2 live (captive bred)
Saimiri sciureus	US		8 live (captive bred)	
Cercopithecus spp.	NG		1 live (I)	
	XX		1 live (I)	
Cercopithecus aethiops	KE		1485 live	
	SL		1 live (I)	
Cercopithecus neglectus	XX		1 live (I)	
Papio hamadryas	ET		211 live	
Papio hamadryas anubis	ET		134 live	
Presbytis obscura	CH			1 live (captive bred)

Table 2

1984

EXPORTS/RE-EXPORTS FROM NETHERLANDS

SPECIES	COUNTRY OF IMPORT	ORIGIN	EXPORTS/RE-EXPORTS REPORTED (PURPOSE)	IMPORTS REPORTED (PURPOSE)
APPENDIX I				
Lemur catta	DD			1 live (captive bred) (Z)
	SE			1 live (Z)
Cercocebus galeritus	RO	[XX]	1 live	
Cercopithecus diana	DD			
Pan troglodytes	JP		4 live (captive bred)	2 live (captive bred) (Z)
Pongo pygmaeus	US			4 live (captive bred) (C)
				2 live (Z)
APPENDIX II				
Nycticebus coucang	US			1 live (captive bred) (Z)
	US	[XX]	1 live	
Callithrix jacchus	EG		4 live (captive bred)	
Cebuella pygmaea	SE			2 live (Z)
	SE	[XX]	1 live (captive bred)	
	ZA		1 live (captive bred)	
Cebus apella	RO		1 live	
	RO	[XX]	1 live	
Saimiri sciureus	ID		3 live (captive bred)	
Cercopithecus aethiops	HU	[KE]	90 live	
	SU	[KE]	1099 live	
Cercopithecus ascanius	PL	[XX]	2 live	
	RO	[XX]	2 live	
Erythrocebus patas	JP		1 live (captive bred)	
	JP			2 live (C)
	JP	[XX]	1 live	
	RO		2 live (captive bred)	
Macaca arctoides	CS		9 live (captive bred)	
	RO		25 live (captive bred)	
	SU		10 live (captive bred)	
Macaca fascicularis	PL		2 live (captive bred)	
	RO		14 live (captive bred)	
Macaca nemestrina	RO		3 live (captive bred)	
	SU		1 live (captive bred)	
Macaca sinica	PL	[XX]	3 live	

Appendix 1

Table 3

1985

IMPORT TO NETHERLANDS

SPECIES	COUNTRY OF EXPORT	COUNTRY OF ORIGIN	IMPORTS REPORTED (PURPOSE)	EXPORTS/RE-EXPORTS REPORTED (PURPOSE)
APPENDIX I				
Lemur catta	CA		2 live (captive bred)	
Varecia variegata	US			2 live (captive bred) (C)
Saguinus oedipus	GB		2 live (captive bred)	2 live (captive bred) (B)
Papio sphinx	PL		2 live (captive bred)	
Gorilla gorilla gorilla	PL	[XX]	2 live (captive bred)	
APPENDIX II				
Cebus capucinus	US		2 live (captive bred)	2 live (captive bred)
Saimiri sciureus	GY		100 live	
Cercopithecus aethiops	KE		1925 live	1970 live (S)
Macaca nemestrina	ID		50 live	50 live
Papio hamadryas anubis	KE		24 live	12 live (S)
Papio hamadryas ursinus	ZW		1 trophy	
Presbytis obscura	CH			

Table 4

1985

EXPORTS/RE-EXPORTS FROM NETHERLANDS

SPECIES	COUNTRY OF IMPORT	COUNTRY OF ORIGIN	EXPORTS/RE-EXPORTS REPORTED (PURPOSE)	IMPORTS REPORTED (PURPOSE)
APPENDIX I				
Lemur catta	CS		1 live (captive bred)	
	JP	[CA]	2 live (captive bred)	2 live (captive bred)
	PL		1 live (captive bred)	
Varecia variegata	PL		2 live (captive bred)	
Microcebus murinus	CS		2 live (captive bred)	
Saguinus oedipus	SG		2 live (captive bred)	
Papio sphinx	JP	[PL]	2 live (captive bred)	
Hylobates lar	EG	[TH]	2 live	
Gorilla gorilla gorilla	DD	[DD]	1 live (captive bred)	
Pan troglodytes	CU	[XX]	3 live	
	RO	[SL]	2 live	
	RO	[XX]	4 live	
APPENDIX II				
Tupaia glis	PL		1 live (captive bred)	
Callithrix jacchus	SG		3 live (captive bred)	
	TH		40 live (captive bred)	
Alouatta palliata	SA		4 live (captive bred)	
Alouatta seniculus	AE		49 live (captive bred)	
Cebus apella	PL		2 live (captive bred)	
	PL	[XX]	1 live	
Cebus capucinus	GB	[GB]		4 live (captive bred) (B)
Saimiri sciureus	CH	[GY]	47 live	57 live (S)
	DO		7 live (captive bred)	
	RO		2 live (captive bred)	
	SE	[GY]	20 live	20 live (S)
Allenopithecus nigroviridis	RO	[XX]	2 live	
Cercocebus galeritus	RO	[BE]	1 live	
Cercopithecus aethiops	CS	[XX]	1 live	
	PL	[KE]	20 live	
	RO	[XX]	4 live	
	SU	[KE]	1370 live	
Cercopithecus ascanius	CS		1 live (captive bred)	
	CS	[XX]	2 live	
	CU		1 live	
	PL	[XX]	1 live	
Cercopithecus lhoesti	PL		1 live (captive bred)	
	PL	[XX]	1 live	
Cercopithecus mona	PL		1 live (captive bred)	
Cercopithecus neglectus	CU	[XX]	1 live	
Cercopithecus wolfi	RO	[BE]	1 live	
Macaca arctoides	DD		4 live (captive bred)	
Macaca fascicularis	CU		2 live (captive bred)	
	HU	[XX]	4 live	
	RO		6 live (captive bred)	
Macaca fuscata	RO		7 live (captive bred)	
Macaca mulatta	SE	[IN]	2 live	
Macaca nemestrina	RO	[XX]	1 live	
	SU	[ID]	49 live	
Papio hamadryas	RO		7 live (captive bred)	

Table 1

IMPORT 1986

Species	COUNTRY OF EXPORT	ORIGIN	Nr.	Source	Code
App. I					
Lemur catta	Switzerland		1	c	z-t
	Switzerland	F.R.G.	1	c	z-t
Lemur variegatus	U.S.A.		3	c	z
Leonthopithecus rosalia	U.S.A.		2	c	z
Callimico goeldii	Sweden		2	c	z
Cercopithecus diana roloway	G.D.R.		2	c/u	z
Hylobates lar	Sweden	u	1	u	z-t
	Sweden	u	2	p	z-t
Pan troglodytes	Switzerland	u	3	u	c
Pongo pygmaeus	U.S.A.		1	c	c
App. II					
Callithrix jacchus geoffroyi	S.-Africa		1	c	z
Cebuella pygmaea	Switzerland		1	c	z
	Switzerland	F.R.G	1	c	z
Lagothrix lagothricha	U.S.A.		1	c	z
Cercopithecus aethiops	Kenya		2310	w	t

Table 2

EXPORT 1986

Species	COUNTRY OF IMPORT	ORIGIN	Nr.	Source	Code
App. I					
Lemur variegatus	Hungary	Nl.	2	c	z
Saguinus oedipus	G.D.R	Nl.	1	c	t-z
Hylobates lar	S.-Africa	Nl.	1	c	z
Pan troglodytes	Japan	Nl.	2	c	z
	Bulgaria	Nl.	2	c	t-z
	Sri Lanka	Nl.	2	c	t-z
App. II					
Callithrix jacchus	Romania	Nl.	17	c	t-z
Cebuella pygmaea	Switzerland	Nl.	1	c	z
	S.-Africa	Nl.	1	c	z
Saguinus labiatus	G.D.R.	Nl.	2	c	z
Cercopithecus aethiops	U.S.S.R.	Kenya	50	w	t-l
	Romania	u	1	u	t-z
C. ascanius	Romania	u	2	u	t-z
Erythrocebus patas	Romania	Nl.	1	c	t-z
Macaca arctoides	Kuwait	Nl.	5	c	t-z
M. fascicularis	Romania	Nl.	10	c	t-z
	Hungary	Nl.	10	c	t-z
M. mulatta	Romania	Nl.	1	c	t-z
	U.S.A.	Nl./FRG	7	c	z-t

Appendix 2

Table 3 RE-EXPORT 1986

Species	COUNTRY OF IMPORT	ORIGIN	Nr	Source	Code
App. I					
Lemur catta	Romania	Switzerland	2	c	t-z
Mandrillus sphinx	Romania	u	1	p	t-z
Hylobates lar	U.S.S.R.	u	2	p/pc	t-z
Pan troglodytes	Romania	Sierra L.	2	p	t-z
	Hungary	Nl.	3	c	t-z
Pongo pygmaeus	U.S.A.	id.	1	c	c
App. II					
Galago crassicaudatus	Romania	F.R.G	1	u	t-z
Callithrix jacchus penicillata	Romania	u	2	u	t-z
Allenopithecus nigroviridis	Romania	u	1	u	t-z
Cercocebus albigena	Romania	u	1	u	t-z
C. aterrimus	Poland	France	1	w	t-z
C. galeritus chrysogaster	Romania	Belgium	1	u	t-z
C. torquatus atys	Czechosl.	u	1	u	t-z
Cercopithecus aethiops	U.S.S.R.	Kenya	2379	w	t-l
	Czechosl.	Kenya	25	w	t-
	Poland	Kenya	12	w	t-
	Romania	u	1	u	t-z
	Romania	u	1	w	t-z
	Israel	Kenya	20	w	t-l
C. ascanius	G.D.R.	u	3	u	t-z
	Romania	u	1	u	t-z
C. petaurista	G.D.R.	u	1	u	t-z
C. pogonias	Romania	u	1	u	t-z
Erythrocebus patas	Romania	Senegal	1	w	t-z
	Poland	Nl.	2	c	t-z
	Poland	u	2	p	t-z

Table 4 E.C.-CERTIFICATES 1986

Species	COUNTRY OF CONSIGN.	ORIGIN	Nr.	Source	Code
App. I					
Lemur catta	France	Nl.	8	c	z
Saguinus oedipus	U.K.	Nl.	6	c	z
Callimico goeldii	U.K.	Nl.	2	c	z
	F.R.G.	Nl.	2	c	z
Cercopithecus diana roloway	France	Nl.	1	c	z
	France	u	1	p	z
Papio sphinx	F.R.G.	Nl.	1	c	z
Presbytis entellus	F.R.G.	F.R.G.	3	c	z
Hylobates lar	France	u	1	p	z
Gorilla g. gorilla	Ireland	Nl.	3	c	z
Pan troglodytes	Italy	Nl.	3	c	t-z
	-	u	4	p	c
Pongo p. pygmaeus	Ireland	Nl.	1	c	z
App. II					
Perodicticus potto	Belgium	u	1	u	z
Aotus trivirgatus	F.R.G.	Nl.	1	c	z
Ateles geoffroyi	U.K.	Nl.	3	c	z
Saimiri sciureus boliviensis	F.R.G.	Nl.	6	c	z
Cebus capucinus	U.K.	N.-Ireland	1	c	z
Cercopithecus albogularis	F.R.G.	u	1	u	t-z
Macaca fascicularis	France	Nl.	15	c	t-z
	U.K.	Nl.	10	c	l
	F.R.G.	Nl.	21	c	l
M. m. maura	France	Nl.	12	c	z

Appendix 2

Table 5 IMPORT 1987 (up to 10-10-87)

Species	COUNTRY OF EXPORT	ORIGIN	Nr.	Source	Code*
App. I					
Leontopithecus rosalia	U.K.		1	c	z
Cercopithecus diana roloway	U.S.A.	u	3	w	z
Pan troglodytes	Cuba		5	c	z-t
	Cuba		4	c	z-t*
	Switzerland	u	3	c	c *
	China	u	2	p	c
Pongo p. pygmaeus	U.S.A.		1	c	z
App. II					
Ateles belzebuth	G.D.R.	u	1	p	z-t
Ateles geoffroyi	G.D.R.	u	3	p	z-t
Saimiri sciureus	U.S.A	Guyana	5	w	t *
Cercopithecus aethiops	Kenya		300	w	t *
	Kenya		600	w	t
	Kenya		745	w	t
Cercopithecus talapoin	Czechosl.		1	c	z
Macaca mulatta	Burma		86	w	t

Table 6 EXPORT 1987 (up to 10-10-87)

Species	COUNTRY OF IMPORT	ORIGIN	Nr.	Source	Code*
App. I					
Papio sphinx	Austria	Nl.	2	c	z *
Pan troglodytes	G.D.R.	Nl.	1	c	t-z
App. II					
Callithrix jacchus	S.-Africa	Nl.	8	c	t-z
id.	Hungary	Nl.	8	c	t-z*
Callithrix j. jacchus	U.S.A.	Nl.	4	c	t- *
Cebuella pygmaea	Finland	Nl.	1	c	z *
	Sweden	Nl.	2	c	z *
Saguinus labiatus	G.D.R.	Nl.	1	c	z
Erythrocebus patas	U.S.S.R.	u	3	c	t-z
Macaca fascicularis	Hungary	Nl.	10	c	t-z
	Romania	Nl.	6	c	t-z

Table 7 RE-EXPORT 1987 (up to 10-10-87)

Species	COUNTRY OF IMPORT	ORIGIN	Nr.	Source	Code*
App. I					
Varecia variegata	Sri Lanka	Nl.	1	c	t-z
Papio leucophaeus	Sri Lanka	Nl.	1	c	t-z
Hylobates lar	G.D.R.	Nl.	1	u	t-z
H. syndactylus	Hungary	Indonesia	2	p	t-z*
Pan troglodytes	Japan	Cuba	10	c	t*
	U.S.S.R	Cuba	3	c	t-l
	Hungary	Sierra L.	1	p	t-z
	Czechosl.	Sierra L.	1	p	t-z
App. II					
Callithrix jacchus	Romania	Nl.	8	c	t-z
Callithrix penicillata	Denmark	Brazil	1	u	t-z
Cebus apella	Romania	Nl.	1	u	t-z
Saimiri sciureus	Switzerland	Guyana	10	w	t-l*
	Switzerland	Guyana	10	w	t-l
	Hungary	u	1	u	t-z
Allenopithecus nigroviridis	U.S.A.	u	4	u	t-z
	U.S.A.	Belgium	1	u	t-z*
Cercocebus agilis	Romania	u	1	u	t-z
C. aterrimus	Romania	Belgium	2	u	t-z
C. galeritus chrysogaster	Hungary	u	5	u	t-z
C. torquatus lunucatus	Romania	u	1	u	t-z
C. torquatus atys	Hungary	u	1	u	t-z
Cercopithecus aethiops	U.S.S.R.	Kenya	200	w	t-l*
	U.S.S.R.	Kenya	350	w	t-l
	U.S.S.R.	Kenya	85	w	t-l*
	U.S.S.R.	Kenya	705	w	t-l
	Romania	u	7	u	t-z
C. ascanius	Poland	Belgium	1	u	t-z
	Poland	u	1	u	t-z*
	Romania	Belgium	2	u	t-z
	Sri Lanka	Belgium	1	u	t-z
	Sri Lanka	u	3	u	t-z
C. cephus	Romania	u	2	u	t-z
C. mona wolfi	Romania	u	1	u	t-z
C. neglectus	Romania	U.K.	1	c	t-z
	Sri Lanka	u	2	u	t-z
C. petaurista	Poland	u	5	u	t-z
C. pogonias	Sri Lanka	u	1	u	t-z
Macaca arctoides	Poland	Nl.	6	c	t-z
M. fascicularis	Poland	Nl.	9	c	t-z
	Hungary	u	10	u	t-z
M. mulatta	U.S.A.	Burma	52	w	t *
	U.S.A.	Burma	136	w	t
M. nemestrina	Romania	Nl.	1	c	t-z
	Hungary	Italy	1	u	t-z
M. nigra	Romania	Belgium	2	c	t-z

Appendix 2

Table 8 E.C. certificates 1987 (up to 10-10-87)

Species	COUNTRY OF CONSIGN.	ORIGIN	Nr.	Source	Code
App. I					
Lemur catta	Denmark	Belgium	1	c	t-z
	Denmark	U.S.A.	1	c	t-z
	F.R.G.	Nl.	5	c	t-z
Cheirogaleus medius	Belgium	Nl.	2	c	z-p
Microcebus murinus	F.R.G.	Nl.	2	c	z
Saguinus oedipus	F.R.G.	Nl.	2	c	z
id.	U.K.	Nl.	2	c	t-z
Gorilla g. gorilla	F.R.G.	Nl.	1	c	z
Pan troglodytes	F.R.G.	Sierra L.	1	p	t-z
	F.R.G.	Sweden	1	p	t-z
	Denmark	-	2	w/c	z
	-	F.R.G	1	c	c
	-	-	2	p	c
Pongo pygmaeus	Spain	F.R.G.	1	c	t-
App. II					
Callithrix jacchus	Belgium	Nl.	2	c	t-z
	Denmark	Nl.	2	c	t-z
	U.K.	Nl.	20	c	1-t
Cebuella pygmaea	F.R.G.	Nl.	1	c	z
	F.R.G	Nl.	2	c	z
	Scotland	Nl.	1	c	z
Ateles geoffroyi	Ireland	u	3	p	t-z
Cebus apella	F.R.G.	Nl.	5	c	z
Saimiri sciureus	France	Guyana	10	w	t-l
	France	Guyana	2	w	t-
Saimiri s. boliviensis	F.R.G.	Nl.	4	c	z
	F.R.G.	Nl.	4	c	z
Cercocebus albigena	U.K.	Belgium	1	u	t-z
	U.K.	u	1	u	t-z
C. aterrimus	U.K.	u	2	u	t-z
Macaca fascicularis	F.R.G.	Nl.	5	c	1
	France	Nl.	18	c	t-z
	F.R.G.	Nl.	5	c	t-z
M. mulatta	U.K.	u	3	p	1
M. nigra	F.R.G	Nl.	2	c	z
M. sylvanus	F.R.G.	Nl.	7	c	z
Colobus guereza	Belgium	Nl.	1	c	z
	France	U.K.	1	c	t-z
Presbytis cristata	Belgium	U.K.	1	c	z

Table 1 Primate collections of the large zoos

Species	CITES	RDB	AHE	AMS	APE	ARN	EMM	HIL	RHE	ROT	WAS	tot.
Family Tupaiidae *												
* Tupaia glis Common Treeshrew	II	-		2 (1-1)			13 (8-3-2)			9 (3-6)		24
Family Lemuridae												
* Lemur catta Ring-tailed Lemur	I	-		10 (3-7)	5 (1-3-1)		24 (12-11-1)	20	4 (4-0)			63
* Lemur fulvus albifrons White-fronted Lemur	I	-								7 (2-5)		7
* Lemur fulvus mayottensis Mayotte Lemur										6 (3.3)		6
* Lemur mongoz Mongoose Lemur	I	E		4 (2-2)								4
* Varecia variegata (=Lemur variegatus) Ruffed Lemur	I	-			3 (1-2)					4 (1-2-1)		7
* Varecia variegata rubra Red-ruffed Lemur				3 (1-2)								3
* Varecia variegata hybr.				3 (1-2)								3
Family Cheirogaleidae												
* Cheirogaleus medius Fat-tailed Dwarf Lemur	I	V								11		11
* Microcebus murinus murinus Lesser or Grey Mouse-lemur	I	-								18		18
Family Lorisidae												
* Nycticebus coucang Slow Loris	II	-		6 (2-3-1)						1		7
Family Galagidae												
* Galago demidovii (= Galagoides demidoff) Demidoff's Galago	II	-								2		2
* Galago senegalensis Lesser Bushbaby	II	-				2	18 (12-6)					20
* Otolemur crassicaudatus Thick-tailed Bushbaby	II	-		7 (4-2-1)		10						17
Family Callithricidae												
* Callithrix jacchus Common Marmoset	II	-		10 (5-2-3)	13 (6-7)	2	13 (3-3-7)		10 (5-2-3)	1		49
* Callithrix penicillata Black-eared Marmoset										2		2
* Callithrix geoffroyi White-fronted Marmoset					4 (3-1)							4
* Cebuella pygmaea Pygmy marmoset	II	-		11 (3-4-4)	18 (3-4-11)				2 (1-1)	18		49
* Leontopithecus rosalia rosalia Golden Lion Tamarin	I	E			8 (4-3-1)		2 (1-1)					10

* Listed in a separate Order (Scandentia) by Honacki et al. (1983).

Appendix 3

(cont.)

Species	CITES	RDB	AME	AMS	APE	ARN	EMM	HIL	RHE	ROT	WAS	tot.
• Saguinus imperator Emperor Tamarin	II	Id		1 (1-0)								1
• Saguinus labiatus Red-bellied Tamarin	II	-		6 (2-2-2)			17 (7-8-2)					23
• Saguinus oedipus oedipus Cotton-top Tamarin	I	E		5 (4-1)	15 (5-8-2)		10 (5-3-2)			34		64
Family Callimiconidae												
• Callimico goeldii Goeldi's Marmoset	I	R		3 (2-0-1)	13 (5-4-4)							16
Family Cebidae												
• Aotus trivirgatus Douroucouli	II	-										
karyotype 2				4 (2-1-1)		5 (1-4)				5		14
karyotype 4										1		1
k2 and k4, non-hybrid							11 (3-3-5)					11
• Ateles belzebuth Long-haired Spider Monkey	II	V								1 (1-0)		1
• Ateles b. marginatus White-whiskered Spider Monkey											2 (0-2)	2
• Ateles belzebuth / paniscus chamek hybr.				1 (0-1)	1 (0-1)		3			2 (1-1)		7
• Ateles paniscus paniscus	II	V		5 (3-2)								5
Guiana Black Spider Monkey												
• Ateles paniscus chamek Black-faced Black Spider Monkey					9 (2-7)		4			3 (1-2)		16
• Cebus spec. Capuchin	II	-	26									26
• Cebus apella Tufted Capuchin	II	-		11 (2-4-5)	8 (5-2-1)			4 (1-3)	13 (4-6-3)			36
• Cebus capucinus White-faced Capuchin	II	-			8 (3-5)							8
• Lagothrix lagothricha Woolly Monkey	II	-			20 (7-13)							20
• Pithecia pithecia White-faced Saki	II	-			12 (6-6)							12
• Saimiri sciureus Common Squirrel Monkey	II	-							10 (2-7-1)			10
• Saimiri s. boliviensis Bolivian Squirrel Monkey				8 (3-5)	134		32 (10-20-2)	4		10 (1-9)		188
Family Cercopithecidae												
• Cercocebus aterrimus Black or Crested Mangabey	II	-				6 (2-4)						6
• Cercopithecus diana roloway	II	-								5 (2-3)		5
• Roloway Monkey												
• Cercopithecus cephus Moustached Monkey	II	-							6 (4-2)			6
• Cercopithecus hamlyni Owl-faced Guenon	II	-		5 (2-2-1)								5
• Cercopithecus albogularis White-throated Monkey	II	-		4 (2-2)								4
• Cercopithecus neglectus de Brazza's Monkey	II	-		3 (1-2)								3
• Cercopithecus petaurista fantiensis Spot-nosed Guenon	II	-					7 (2-4-1)					7
• Cercopithecus talapoin (= Myopithecus talapoin) Talapoin	II	-		3 (0-3)								3
• Colobus guereza (= C. abyssinicus) Guereza	II	-					16 (8-7-1)			3 (1-1-1)		19

(cont.)

Species	CITES	RDB	AME	AMS	APE	ARN	EMM	HIL	RHE	ROT	WAS	tot.
• Erythrocebus patas (= Cercopithecus patas) Patas Monkey	II	-		8 (1-4-3)	7 (1-4-2)	9						24
• Erythrocebus p. patas. Black-nosed Patas Monkey									5 (1-3-1)			5
• Macaca arctoides Stump-tailed Macaque	II	-	3 (2-1)					11 (4-7)				14
• Macaca cyclopis Taiwan Macaque	II	-	5 (2-3)									5
• Macaca fascicularis Crab-eating Macaque	II	-	46									46
• Macaca fuscata Japanese Macaque	II	-				34						34
• Macaca mulatta Rhesus Monkey	II	-		17				58+				75+
• Macaca nemestrina Pigtail Macaque	II	-	10 (5-5)						16 (2-6-8)			26
• Macaca nigra Celebes Macaque	II	-		7 (2-3)								5
• Macaca sylvanus Barbary macaque	II	V	15 (5-7-3)		33 (8-12-13)							48
• Papio hamadryas hamadryas Hamadryas Baboon	II	-				34	80		17 (7-8)	19 (8-8-3)		150
• Papio leucophaeus Drill	I	E				5 (1-4)						5
• Papio sphinx (= Mandrillus sphinx) Mandrill	I	-		3 (1-2)							2 (0-2)	5
• Presbytis obscura Spectacled Leaf Monkey	II	-		2 (1-1)								2
Family Hylobatidae												
• Hylobates agilis (= H. lar agilis) Agile Gibbon	I	-				1 (1-0)						1
• Hylobates concolor leucogenys White-cheeked Gibbon	I	Id		2 (1-1)				2 (1-1)				4
• Hylobates hoolock Hoolock Gibbon	I	-	3 (2-1)									3
• Hylobates lar Lar Gibbon			2 (1-1)	3 (1-2)	2 (0-2)		7 (4-2-1)	1 (0-1)	3 (1-2)	3 (1-2)		21
• Hylobates pileatus (= H. lar pileatus) Capped Gibbon	I	E						1 (1-0)				1
• Hylobates syndactylus (=Symphalangus synd.) Siamang	I	-				4						4
Family Pongidae												
• Gorilla gorilla gorilla Lowland gorilla	I	V		2 (1-1)	16 (5-11)	7 (2-5)				8 (3-5)		33
• Pan troglodytes Chimpanzee	I	V	18 (5-9-4)	10 (2-6-2)		29			11			68
• Pongo pygmaeus pygmaeus Bornean Orang-utan	I	E		5 (2-3)		6 (1-4-1)			4 (2-2)	8 (3-5)		23
• Pongo pygmaeus abeli Sumatran Orang-utan										1 (0-1)		1
total nr. of primates:			128	172	329	154	257	101	101	182	4	1428

Appendix 3

Dates of stock-taking large zoos:
AME 27-10-87
AMS 31-12-87
APE 30-09-87
ARN 12-11-87
EMM 01-12-87
HIL 11-11-87
RHE 30-11-87
ROT 16-11-87
WAS 04-11-87

Under CITES, I or II refers to the CITES Appendix on which the species is listed, as of 29th August 1986. Entries under RDB indicate the IUCN Red Data Book status categories:
E = Endangered
Id = Indeterminate (given as "I" in RDB)
K = insufficiently Known
O = Out of danger
R = Rare
V = Vulnerable

Primate collections of small zoos: December 1987.

Source: information provided by the zoos.
* : not confirmated by the zoo. Source: van Akker, 1985.
**: not confirmated by the zoo. Source: file of the Ministry of Agriculture and Fisheries.

Table 2 Primate collections of the small zoos

Species	ALP	BES	BOK	EER	EIN	EPE	GUL*	OIS**	PLA	tot
Family Cebidae										
Ateles p. paniscus		6								6
Ateles p. chamek		1								1
A. p. paniscus / p. chamek hybr.		3								3
Saimiri sciureus				3						3
Family Cercopithecidae										
Cercocebus atys						3				3
Cercopithecus mitis		1								1
Cercopithecus talapoin		1								1
Macaca cyclopis								2		2
M. fascicularis		3			6		4		4	17
M. fascicularis / nemestrina hybr.		1								1
M. maura								2		2
M. mulatta	7					5				12
M. nemestrina					3	5		2		10
M. nigra		3								3
M. sylvanus			6							6
Papio h. hamadryas		5			4					9
Papio h. papio		4			1					5
Family Hylobatidae										
Hylobates lar	1									1
Family Pongidae										
Pan troglodytes					2					2
total:	8	28	6	3	16	13	4	6	4	88