

The Overkill

by T. W. Roth DVM

The huge number of wild monkeys used for research purposes, more than half of them in the USA, has alarmed conservationists all over the world. The author of this article shows how wild stocks especially of rhesus monkeys have declined as a direct result, and suggests ways in which the wastage now going on could be avoided until research workers become sufficiently alarmed at the prospect of no more wild animals being obtainable to put money into breeding their own supplies. The author is drawing on more than ten years' experience of collecting zoo animals and research primates in Africa and south-east Asia and twenty odd years of zoo animal maintenance.

A SURVEY conducted by the US Institute of Laboratory Animal Resources (ILAR) in 1966, with only 60 per cent returned questionnaires, shows US researchers as having used 62,783 primates – both New and Old World species – of which a mere 4079 were bred in the US.³ During 1965, US Public Health authorities listed 105,103 non-specified 'monkeys', 308 chimpanzees and 14 gorillas as inspected at port of entry.⁴ From statistics it becomes evident that the US absorb more than half of all primates supplied. Ever since the recent period of mass sacrifice of rhesus monkeys for the production of poliomyelitis vaccine, this species has become the favourite near-human model for all phases of bio-medical research. The reason for this lies partly in its original abundance and easy availability, but mainly in the fact that due to its extensive use, it is at present *the* primate with the most thoroughly documented biological data, thus saving the researcher the time and effort for base line studies.

The last meaningful rhesus population census was taken in 1959, nearly a decade ago and at that time the trend towards extinction was clearly pointed out. In 1958–59 India exported 200,000–250,000 rhesus annually, of which more than 85 per cent were juveniles (5–7 lb). The authors of the survey cited typical evidence of deterioration in rhesus population compositions in the areas of Aligarh and Azamgarh (U.P.) reporting the number of infants carried as over 30 per cent compared with less than 2 per cent in the typical groups. Similar population imbalances were reported from the North of Uttar Pradesh province, in the Dehra Dun area, and in several other areas among 'temple groups'. The authors warned that 'this intensive trapping programme has resulted in the effective removal of juveniles. The adult breeding stock is not being adequately replaced to maintain stable populations'.¹ Among the villages and towns surveyed 63 per cent were described as having lost resident rhesus groups within the previous five years. The authors thought that two other reasons beside extensive trapping had contributed to the decline: the increasing disinclination of hard pressed Indian farmers to protect 'sacred' crop raiders, and the rapid increase in land utilisation to sustain the exploding human population.

Since 1959 the total number used for production has declined. In 1965 Indian government statistics showed an export of 38,870 rhesus,

of which 24,456 went to the USA; in 1966 they listed 41,179 monkeys exported, and projected figures based on records up to May 1967 indicate that the US will receive three-quarters of a total of 44,500 Indian primates. These figures indicate an increased use of rhesus for research during the last few years. The oldest adage in conservation, borrowed from intensive deforestation on the European continent, stipulates that we plant two new trees for each old tree we cut. Yet here we continually harvest millions of 'young trees' without the slightest attempt at 'reforestation'. It is not very likely that the present generation will be able to provide all the solutions to bio-medical problems facing man. But at the current rate of exploitation, rhesus monkeys before any others will become less available during this generation and their availability to the next is endangered.

Accessibility and ease of transportation dictate the use of relatively small portions of a given primate habitat. The vast majority of rhesus originate from Uttar Pradesh Province in India, virtually all baboons and grivets used in laboratories are derived from Kenya, Somalia and Ethiopia, and the Colombian part of the Amazon basin supplies the bulk of New World primates for research. Continued trapping in one ecological niche causes a steady influx of primates from neighbouring habitats, thus draining much larger areas. Early men domesticated cattle when aurochs became harder to come by, and thus with control-bred stock averted the loss of animal protein sources for future generations. Today conservation organisations direct their efforts – however laudable – mainly at species like gorals, bald eagles, blue whales and others, where protective measures are not likely to encounter massive popular opposition. Where labels like 'scientific progress', 'benefit to humanity' are displayed, conservationists are reluctant to be found tilting against windmills.

The Waste

The most persuasive argument for attempting gradually to 'domesticate' research primates is the prospect of exchanging randomly caught animals (replete with human parasites and pathogens originating from human population with somewhat sub-standard public health facilities) for control-bred stock with known biological parameters. Such a programme would also tend to reduce, or even eliminate, another sad aspect of present-day primate exploitation: the waste. It is an undeniable fact that only about 50 per cent of the collected total number of primates become subjects of meaningful research. The remaining 50 per cent are a total loss. An average of 15 per cent are lost between trap and export compounds, some die in transit others succumb to stresses in the importer's compound, many never reach actual experimentation because inadequate facilities and inexperienced maintenance in research colonies, as well as delayed stress reaction, send them to the incinerator.

It is true that along with the increased usage of primates in research more people become familiar with their basic requirements, but a concerted effort is needed to recruit and train professional personnel on all levels of primate maintenance. The Smithsonian Institution under Dr John Napier is the first organisation to initiate a department solely concerned with training future primatologists.

It might also be suggested that the researcher who uses nothing but a gland in his project should share the sacrificed source of the gland with research workers pursuing other fields of primate tissue studies, and finally make the remainders available for the training of future anatomists and biologists. Such exchange or multiple usage would ultimately benefit the original investigators by the availability of more tissue sources than he would have if he continues the pursuit of monopolistic tendencies.

Meanwhile, temporary relief can be achieved by improved sanitation of trapping, compounding and shipping facilities (which have already somewhat improved under the pressure of commercial losses since the early 1940s), by elimination of the purchasing concept on 'lowest' bid, regardless of quality, (because exporters and importers obviously arrive at lowest competitive prices only at the expense of the animals, not at their own), and, last not least, by the creation of a body of professionally qualified personnel, dedicated to primate welfare rather than the maintenance of a tissue depository. Such measures might help to bridge the gap of time it will take for large enough numbers of researchers to become sufficiently alarmed at the potential lack of experimental animals, to set aside the funds needed to establish adequate breeding colonies.

The initial lack of success in establishing such facilities, as for instance the stocking of some Caribbean islands with transplanted rhesus populations under semi-controlled free range conditions, unfortunately discouraged later efforts. However, the resumption of normal reproduction rates among these colonies (Cayo Santiago) within 10 to 15 years after initial population losses, points out the need to establish breeding colonies *now* while we can still draw from wild stock rather than later when we may have to face the tedious task of re-breeding an otherwise extinct species from the last ten pairs remaining in zoos or research colonies.

REFERENCES

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Finland's Carnivores

A SURVEY of the changes in Finland's mammal fauna, of which Part I on carnivores is published in *Suomen Luonto* No. 1 1968, (in Finnish with an English summary), shows that the lynx, now fully protected, has increased slightly, with an estimated population of about 100 animals. Bear numbers, on the other hand, despite partial protection, are declining, from an estimated 400 animals in the 1950s to about 120 today. Wolves and wolverines are vigorously persecuted and numbers are small, estimated at about 25 and 60 respectively, but the marten, having sunk to a low level in the 1920s, has picked up since it became protected in the 1930s and the population is now judged strong enough to permit moderate hunting.