THE MONKEY MACACA NEMESTRINA AS A RESEARCH SUBJECT

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(with 3 Figs.)

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INTRODUCTION

The most popular monkey for research purposes is undoubtedly Macaca mulatta or rhesus, not only is it commonly used for acute experiments, but often for long term studies when carefully trained animals are required.

It has also been the subject for the majority of psychological investigations of monkeys' learning capacity and behaviour.

We too have used it successfully in the study of cerebral functions in work with GLEES (1952, 1954), but we have found that for many experiments for which highly trained animals are needed, Macaca nemestrina is superior.

So much is this so that we feel justified in briefly introducing this monkey to the notice of other workers. Our paper is in parts deliberately descriptive; this we regard as both inevitable and desirable when attempting, as we are, not only to give facts about M. nemestrina, but also to indicate its undeveloped potentialities for further research.

GENERAL DESCRIPTION

The earliest reference to M. nemestrina was made by LINNAEUS in his Systema Naturae, 1766, in which under Simia he classifies the nemestrina as belonging to the species Pithecus. Eleven years later ERXLEBEN in Systema Regni Animalis placed the macaques in a genus distinct from Pithecus and ranked our animal with the baboons as Papio nemestrinus. This is of some interest in view of what we have observed in working with this monkey.

But DESMAREST in Mammalogie ou Description des Especes de Mammiferes, 1820, writes of "Macacus nemestrinus", changing with doubtful justification the "Macaca" of his fellow countryman LACEPEDE, 1799, into

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“Macacus” and thus initiating a confusion in terminology which still persists.

The geographical distribution of *M. nemestrina* is given by Elliot (1913) as Southern Burma, Tenasserim, the Malay Peninsula and the Islands of Banka, Sumatra, Java and Borneo. In all these regions it lives in troops in the forests.

Its Malay name is Berok, pronounced Broh, and in Burma it is known as Myouk-padi, while the English of the Straits Settlements call it the Coconut or Pig-tail monkey. This latter name is not likely to be of native origin, as the Moslem Malay would hesitate to call his berok by a name associating it with the pig, but it was probably given to the monkey because of the resemblance of its tail to that of a pig.

The name Coconut monkey is derived from its use by the Malays in the collection of coconuts in the plantations. This is an occupation for which it is carefully trained, being taught to twist the nut first one way, then in the reverse direction, and also to obey verbal commands.

These animals breed easily in captivity; Osman-Hill (1955) quotes authorities for a gestation period of between 171 and 210 days for *M. nemestrina*, and several averages of from 150 to 174 days for *M. mulatta*, with a minimum of 146 and a maximum of 180. Zuckerman (1932) states that the sexual cycle varies between thirty and forty days, and notes that in a female pig-tail in the London Zoological Gardens the lactation interval, when sexual swelling and menstruation were absent, lasted after two successive births twenty-three months apart for eight and six months respectively.

With regard to the chromosome number Darlington and Haque (1955) give this at 42 for *P. papio, M. Nemestrina* and *M. mulatta*, the number for European man is 48.

The dental formula is

\[
\begin{align*}
I^2 & - 2 \\
C^1 & - 1 \\
P^2 & - 2 \\
M^3 & - 3
\end{align*}
\]

This pattern is absent in the marmosets appearing in the monkeys and continuing thereafter upwards in the baboons, gibbons, apes and man himself. It is however absent in the monkeys of the new world.

When full grown *nemestrina* is slightly larger than *mulatta*, and the male is very much bigger than the female, but while the young animals are docile and easily handled, old males are of uncertain temper, especially at dusk and must be approached with caution as their canine teeth grow to a total length of over 6 cm making them truly formidable beasts if savage.

The brain of *M. nemestrina*, viewed macroscopically, appears to be some-