

### The Chromosome Complement of *Nasalis larvatus* (Wurm 1781)<sup>1</sup>

During my recent stay at the Yerkes Laboratory in Atlanta as a guest of Dr. OSMAN HILL, I had the opportunity of studying the karyotype of a female *Nasalis larvatus*<sup>2</sup>. This extremely rare monkey is of great interest in the taxonomy and phylogeny of the Old World monkeys.

The chromosome count carried out on 20 metaphase plates was found to be  $2n = 48$  (see Figure 1). Since the animal studied was a female it was impossible to identify the X chromosomes. The homologues have been divided into 4 groups of chromosomes similar in dimension and morphology (Figure 2). The division is to be considered provisional until it is possible to study a male subject.

The first group (A) contains 7 pairs of metacentric chromosomes. Chromosome pairs Nos. 6 and 7 are of the same size and distinctly smaller than chromosome pair No. 5. The second group (B) contains 9 pairs of chromosomes, all of which are submetacentric. The third group (C) contains 7 pairs of small chromosomes, all submetacentric. The fourth group (D) consists of only 1 pair of chromosomes marked by a large achromatic region on one of the arms (see Figure 3).

The chromosome number would lead us to think immediately that *N. larvatus* is related to the anthropoid



Fig. 1. Metaphasic plates of the chromosomes of *Nasalis larvatus* female.

apes<sup>3</sup>. On the other hand, the chromosome morphology reveals a remarkable difference. The *Nasalis* karyotype is indeed similar to those of *Presbytis*, *Colobus* and *Hylobates*, all of which exhibit 44 chromosomes<sup>4</sup>. There is only a slight or nearly non-existent similarity to the karyotype of the other Old World primate species.



Fig. 2. Reconstruction in pairs of homologous chromosomes of *Nasalis larvatus* female.

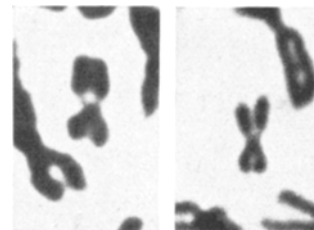


Fig. 3. Chromosome marked by the achromatic region from karyotype of *Nasalis larvatus*.

*Riassunto.* I cromosomi di *Nasalis larvatus* presentano un numero diploide di  $2n = 48$ . Il cariotipo presenta molte similitudini con quello delle altre *Colobinae* e con le *Hylobatinae*.

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Torino (Italy), July 18, 1966.

<sup>1</sup> Supported in part by a grant from the Italian 'Consiglio Nazionale delle Ricerche' No. 7854/H.

<sup>2</sup> I wish to thank Dr. J. EGOZCUE and Dr. A. K. EUGESTER who provided the material for the tissue cultures, and the Yerkes Primate Center staff for the laboratory facilities.

<sup>3</sup> B. CHIARELLI, *Caryologia* 15, 99 (1962).

<sup>4</sup> B. CHIARELLI, *Caryologia* 16, 637 (1963).

### A Unitarian Hypothesis of Altered Reactivity to Stress Mediated by *Bordetella pertussis*

Diverse activities of pertussis vaccine that affect the reactivity of the mouse or rat to stress have been the subject of many studies, summarized in recent reviews by PITTMAN<sup>1</sup>, KIND<sup>2</sup>, and MUNOZ<sup>3</sup>. Investigators have attributed these activities to various parts or chemical components of the bacterial cell. It appeared to us that a unifying concept might be derived from the existing data which lie in an area where such diverse fields as immunology, pathology and pharmacology intersect. Using both

published evidence and as yet unpublished studies of our own, we have sought to determine whether the factor or factors responsible for the various activities associated with pertussis vaccine have certain physicochemical properties in common. 3 such properties were studied; namely, effect of heat, effect of tryptic digestion, and parallel fractionation. By parallel fractionation we mean

<sup>1</sup> M. PITTMAN, *Fedn Proc. Am. Soc. exp. Biol.* 16, 867 (1957).

<sup>2</sup> L. S. KIND, *Bact. Rev.* 22, 173 (1958).

<sup>3</sup> J. MUNOZ, *Bact. Rev.* 27, 325 (1963).