permanent relief of the pain that sometimes occurs. Whether this is the explanation of the prolonged therapeutic effect of local anaesthetics or not, it remains important to note that such recommended preservatives are not inert and that their presence should be taken into account both in experimental and in therapeutic situations.

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HÆMATOLOGY

Alkali-resistant Hæmoglobins in Prosimian Primates

PROSIMIAN Primates are a group of animals which share characteristics of behaviour, anatomy, biochemistry, cytogenetics, and physiology with the monkeys on one hand and the more primitive Insectivora on the other¹. We have been examining the hæmoglobins of a number of these animals. One of our most interesting discoveries is the relatively high level of alkali-resistant hæmoglobin found in these animals.

Blood samples were taken from the femoral veins of anaesthetized or tranquillized animals. Hæmolytates were prepared as described by either Jonxis and Huisman² or Singer *et al.*³. The alkali-denaturation tests were carried out by the method of Singer *et al.*³. All samples were read in a Coleman Junior spectrophotometer at 540 mμ. Fresh and stored samples gave essentially identical results.

The results given in Table 1 include those from tests on individual adult and juvenile animals from a variety of genera of Primates. These results are of some comparative interest, since we have found no significant amounts of alkali-resistant pigments in adult animals in the Anthropoidea. There is a difference in average amount of alkali-resistant pigment among the three major groups of Prosimians tested. The Lemuriformes appear to have the highest average levels, 41–75 per cent; the Loriformes have levels between 8.4 and 52 per cent; and the single Tupaiiformes sample showed 9 per cent alkali-resistant hæmoglobin. The age of the animals apparently is not related to the amount of denatured pigment, since several in each group, except *Tupaia glis*, were infant or juvenile animals. This is in marked contrast to the higher Primates which have been examined. Singer *et al.*³ found, in new-born human beings, a high level of alkali-resistant hæmoglobin (80 per cent); the level afterwards fell to the negligible value of 1.7 per cent at the age of 36 months. Similar values have been found in *Macaca mulatta*⁴.

Electrophoresis on starch-gels of hæmoglobin from the animals studied here, with Poulik's discontinuous buffer system⁵, demonstrated at least two components in all the Loriformes and in most of the Lemuriformes. One of these components may correspond to the alkali-resistant fraction we found.

Table 1

Animal	No. tested	Alkali-resistant hæmoglobin (per cent)
		Average Range
INSECTIVORA		
<i>Elephantulus rufescens</i>	1	0.4
PRIMATES		
Prosimii		
Tupaiiformes		
<i>Tupaia glis</i>	1	9.1
Lemuriformes		
<i>Lemur mongoz</i>	2	75.5 68.1–82.3
<i>L. fulvus</i>	9	67.1 50.9–86.4
<i>L. catta</i>	6	61.8 51.1–71.5
<i>L. variegatus</i>	1	44.0
<i>L. macaco</i>	2	41.5 39.5–42.7
<i>Haplorhina griseus</i>	1	67.0
Loriformes		
<i>Nycticebus coucang</i>	2	52.5 49.5–55.5
<i>Perodicticus potto</i>	17	31.9 21.1–52.6
<i>Galago crassicaudatus crassicaudatus</i>	18	30.5 25.3–59.1
<i>G. crassicaudatus agleymbanus</i> *	5	36.0 32.0–46.8
<i>G. senegalensis senegalensis</i>	4	8.4 7.2–10.1
Anthropoidea		
<i>Erythrocebus patas</i>	1	2.1
<i>Papio comatus</i>	9	0.3
<i>P. doguera</i>	40	0.2 0–0.5
<i>Macaca mulatta</i> (fetus)	2	82.0 75.9–87.6
<i>M. mulatta</i> (infant)	1	50.9
<i>M. mulatta</i> (adult)	5	0.3
<i>Cebus apella</i> (infant)	1	10.8 0–1.4
<i>C. apella</i> (adult)	1	2.6
<i>Lagothrix lagotricha</i>	2	2.6 2.4–2.7
<i>Ateles spp.</i>	2	0.6 0.5–0.7
<i>Pan troglodytes</i>	1	0.2

* Species identification in doubt. The animals appear to be of the *G. crassicaudatus* group; however, some authorities have called them *G. senegalensis zanzibarcus*.

A detailed account of the hæmoglobins of these Prosimians is in preparation.

One elephant shrew (*Elephantulus rufescens*) of the order Insectivora was examined. According to Polyak⁶ *Tupaia* is closely related to this species. A level of about 0.4 per cent alkali-resistant hæmoglobin, which is negligible, was found in our sample from an old animal.

The question of the nature of this alkali-resistant hæmoglobin in the Prosimians is raised. There is little doubt that in higher Primates, including man, this hæmoglobin is the principal foetal pigment. The term foetal would be misleading, if not incorrect, when applied to the alkali-resistant fraction of Prosimian hæmoglobin. A possibility is that this hæmoglobin in the Anthropoidea was originally a major component of the respiratory pigment, as in the Prosimians, but gradually became confined to a shorter period in the animal's life, until, in the highest Primates, it is present only in the fetus and during the first few months of life. This hypothesis requires an investigation into the physiological function of the alkali-resistant pigment in Prosimians.

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