

Table 1. OXYTIC ACTIVITY OF EXTRACTS OF BLOOD AND HYPOTHALAMUS IN RATS

Blood				Hypothalamus			
Total oxytocic activity	Oxytocin (m.u./ml. blood)	Second oxytocic substance	Second oxytocic substance/total oxytocic activity (per cent)	Total oxytocic activity	Oxytocin (m.u./hypothalamus)	Second oxytocic substance	Second oxytocic substance/total oxytocic activity (per cent)
1.8	0.34	1.46	81	8.28	0	10.1	> 100
1.75	1.00	0.75	43	7.66	5.38	2.28	30
2.38	0.65	1.73	72	10.42	3.26	7.16	70

blood and hypothalamus of the male rat are shown in Table 1. In each case, extracts of hypothalamus and blood were made from the same rat and assayed in parallel on the sensitized virgin rat uterus.

Secondly, blood extracts prepared from male rats with bilateral electrolytic lesions in the region of the paraventricular nuclei (using the Horsley-Clark stereotaxic instrument) possessed less oxytocic activity than similar extracts both from the control group and from those with lesions in the posterior hypothalamus. Table 2 shows that most of the oxytocic activity in these male rat blood extracts is due to second oxytocic substance, and since in the last group the total oxytocic activity in each case is less than the amount of second oxytocic substance in the first two groups, it suggests a decrease in the level of that substance in the blood as a consequence of the lesions in the paraventricular nuclear area.

Table 2. OXYTIC ACTIVITY OF BLOOD EXTRACTS AFTER LESIONS IN HYPOTHALAMUS

Position of lesions	Blood extracts				
	Total oxytocic activity	Oxytocin (m.u./ml. blood)	Second oxytocic substance	Second oxytocic substance/total oxytocic activity (per cent)	
None	(1)	1.33	0.28	1.05	79
	(2)	1.8	0.34	1.46	81
	(3)	3.3	1.2	2.1	60
	(4)	2.46	0.31	2.15	88
Post-hypothalamus	(5)	2.1	0.72	1.28	61
	(6)	1.46	0.19	1.27	87
	(7)	2.15	0.03	2.11	98
	(8)	1.09	0.30	0.79	75
Near paraventricular nucleus	(9)	≤ 0.44	*	*	*
	(10)	0.50			
	(11)	< 0.28			
	(12)	0.77			

\* Insufficient extract left for assay of second oxytocic substance.

Thus it appears that the second oxytocic substance is closely related to oxytocin in its release from the paraventricular nucleus. This would explain its reduction following paraventricular lesions, and also the correlation between the level of second oxytocic substance in blood and hypothalamic extracts. Further experiments are being carried out along these lines to confirm these preliminary results.

A. W. DUGGAN  
G. W. REED

Department of Physiology,  
University of Queensland,  
Brisbane, Australia.

Feb. 17.

- <sup>1</sup> Olivecrona, H., *Acta Physiol. Scand.*, **40** (1966), 144 (1957).  
<sup>2</sup> Robertson, P. A., and Hawker, R. W., *Nature*, **180**, 343 (1957).  
<sup>3</sup> Van Dyke, H. B., Chow, B. F., Greep, R. O., and Rothen, A., *J. Pharmacol. Exp. Therap.*, **74**, 190 (1942).  
<sup>4</sup> Hawker, R. W., and Robertson, P. A., *J. Clin. Endocrinol. Metab.*, **17**, 448 (1957); *Endocrinol.*, **60**, 652 (1957).  
<sup>5</sup> Hawker, R. W., and Roberts, V. S., *Brit. Vet. J.*, **113**, 459 (1957).

### Absence of Abnormal Hæmoglobins in Some Groups of the Papua Population of Dutch New Guinea

As results of various surveys on the occurrence of hæmoglobinopathies in different countries become available it appears that the number of carriers of one of these hereditary aberrations is relatively high among the populations of many countries: Central and North Africa, Italy, Greece, the Middle Eastern countries, Iran, India, Pakistan, Ceylon, Burma, Thailand and Indonesia. In many of these countries malaria is common. There are positive indications that the presence of hæmoglobins *S* and *F* lowers the mortality-rate of young children infected with malaria. For the other abnormal hæmoglobins such a relation has not yet been established. Lie Injo Luan Eng<sup>1</sup> found among the Sudanese and Javanese populations of Java respectively that 2.5 and 4.5 per cent were carriers of hæmoglobin *E*. Lehmann *et al.*<sup>2</sup> found 13.1 and 5 per cent respectively in the Malaysian Malays of two districts. In the Dyaks of Sarawak the number of hæmoglobin *E* carriers was found to be very low<sup>3</sup>. Farther east, in the Celebes, the percentage of carriers of hæmoglobin *E* was found to be low (1 per cent). Lie Injo Luan Eng<sup>1</sup> and Lehmann *et al.*<sup>4</sup> found no abnormal hæmoglobin in the Australian aborigines.

We have been able recently to study the blood of East Indonesians from Ambon and other islands in the eastern part of the archipelago who have come to Holland (135 samples) together with the blood of Papuans collected by one of us in Dutch New Guinea (250 samples). Both paper electrophoresis and column chromatography were carried out on each specimen. No abnormal hæmoglobin was encountered, nor any increased amount of foetal hæmoglobin. It is noteworthy that in many parts of New Guinea malaria is holo-endemic. In the holo-endemic malaria districts of Central Africa, the spleen index among the adult population is far lower than that found in New Guinea. The question arises whether there is a relation between the high spleen index in the adult Papuan and the absence of abnormal hæmoglobins in this population.

J. H. P. JONKIS  
T. H. J. HUISMAN

Department of Pædiatrics,  
University of Groningen,  
The Netherlands.

G. J. DA COSTA

Camp Westenbork,  
The Netherlands.

D. METSELAAR

Governmental Medical Service,  
Hollandia, Binnen,  
Dutch New Guinea. Feb. 8.

- <sup>1</sup> Lie Injo Luan Eng, thesis, Jakarta (1956).  
<sup>2</sup> Lehmann, H., and Bhagwan Singh, R., *Nature*, **178**, 695 (1956).  
<sup>3</sup> Colbourne, M. J., Ikin, E. W., Mourant, A. E., Lehmann, H., and Thein, H., *Nature*, **181**, 119 (1958).  
<sup>4</sup> Horsfall, W. R., and Lehmann, H., *Nature*, **177**, 41 (1956).