Table III

Treatment	5-HIAA content of urine (in μg per kg body weight)				
	Control period	Collection periods after treatment			
		0–3 h	3–6 h	6–9 h	9–12 h
Distilled water . .	10	13	12	13	10
Reserpine	11	20	58	20	12
Reserpine	14	20	50	20	13
Reserpine	10	20	54	40	10
Reserpine	13	18	52	32	12

samples was determined according the method described in a previous paper[5].

The results are shown in Table III.

It is easy to see from the tabulated data that the maximum excretion of 5-HIAA occurs in the second collection period, in which the urine content of the metabolite is more than fourfold, as compared with that of urine of untreated rats. The total 5-HIAA excreted by rats injected with reserpine exceeds that of control rats by 55–76 μg/kg.

(d) 2 groups of 4 rats each were injected subcutaneously with 25 mg/kg of 5-HIAA and killed after 30 min and 2 h respectively; 4 groups of 4 rats each were treated intraperitoneally with 1 mg and 5 mg/kg of 2-brom-*d*-lysergic acid diethylamide, coded *BOL* 148, and killed after 1 and 2 h, respectively; 3 groups of 5 rats each were given intraperitoneally daily injections of 10 mg/kg dibenamine and killed 8 h after the 1st, the 3rd and the 11th injection, respectively; finally, 4 groups of 4 rats each were given intraperitoneally chlorpromazine 2 and 10 mg/kg and killed after 5 and 24 h, respectively.

No significant changes in the 5-HT content of serum, spleen and gastrointestinal tract could be observed in these groups of animals.

The experimental results described in this communication will be discussed in detail in the paper *in extenso*.

I wish to thank the Sandoz and CIBA Research Laboratories, Basle, for generous samples of *BOL* 148 and reserpine (Serpasil), respectively. 5-HT creatinine sulphate and 5-HIAA were synthetized in the Farmitalia Research Laboratories, Milan.

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Zusammenfassung

Bei ausreichender Dosierung ist Reserpin imstande, eine praktisch vollkommene Freisetzung des 5-Oxytryptamins (5-OT) aus den Blutplättchen und der Milz zu verursachen und eine partielle Freisetzung aus der Magen-Darmschleimhaut und dem Gehirn. Die Ausgangswerte werden dann nur langsam erreicht. 5-OT exogener Herkunft hindert die reserpinbedingte Ausschüttung des endogenen 5-OT.

[5] V. ERSPAMER, J. Physiol. *127*, 118 (1955).

Respiratory Changes in Decorticate Cats Following Transverse Sections Through the Hypothalamus

During acute experiments in this laboratory when transsections through the hypothalamus were made in 60 decorticate cats with a view to prepare diencephalic cats, approximately 20% of these animals exhibited very hurried and rather shallow respirations soon after the transverse section. Such changes in respiration were not seen in decerebrate, but were observed in diencephalic cats only.

This led to consideration of the possibility of the transverse section in these animals being at such a level whereby some respiratory centres were released from rostral inhibitory control.

Previous workers have obtained fairly comparable results form the stimulation, in man, of different parts of the hippocampus–mammillary body–anterior thalamic nuclei–cingulate gyrus complex[1], apnoea being a constant feature of stimulation of these areas besides facilitation or inhibition of somato-motor activity and autonomic changes etc. Recently SEGUNDO *et al.*[2] observed that electrical stimulation of the fornix produced apnoea and other effects similar to that obtained with stimulation of structures between which it formed an important link; they further added that the "excitation of the 'anterior periventricular' region in man induced marked acceleration of the respiratory rate and diminution of its amplitude, the respiratory changes resembling that seen in the polypneic panting evoked from this region in animals[3]. Obviously, decending connections from this region pass to pontobulbar levels controlling respiratory activity and possibly subservs the regulation of body temperature[4]".

It thus appears possible that the transsections carried out during our experiments were through a plane rostral to the periventricular respiratory centres, thereby releasing them from inhibitory control. Further work on the subject is in progress[5].

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Department of Pharmacology, School of Tropical Medicine, Calcutta, October 18, 1955.

Zusammenfassung

Anscheinend bedingt die frontale Durchschneidung des Hypothalamus in der diencephalischen Katze eine Loslösung des vorderen periventrikulären Atemzentrums von höherer (rostraler) hemmender Kontrolle.

[1] W. P. CHAPMAN, R. B. LIVINGSTON, and K. E. LIVINGSTON, Arch. Neurol. Psychiat. Chicago *62*, 701 (1949). – B. R. KAADA and H. J. JASPER, Arch. Neurol. Psychiat. Chicago *68*, 609 (1952). – W. T. LIBERSON, W. B. SCOVILLE, and R. H. DUNSMORE, J. EEG clin. Neurophysiol. *3*, 1 (1951).

[2] J. P. SEGUNDO, R. ARANA, E. MIGLIARO, J. E. VILLAR, A. GRACIAGUELFI, and H. GRACIA AUSTT, J. Neurophysiol. *18*, 96 (1955).

[3] H. W. MAGOUN, F. HARRISON, J. R. BROBECK, and S. W. RANSON, J. Neurophysiol. *1*, 101 (1948).

[4] J. F. FULTON, *Physiology of the nervous system*, 3rd ed. (Oxford Univ. Press, 1949).

[5] In a recent communication to the writers, Dr. JOHN F. FULTON informs that his colleague at the Yale University School of Medicine, Dr. PAUL MACLEAN, has also noticed similar respiratory changes in the course of his experiments.

[6] Vorstand des Pharmakologischen Instituts der Universität Graz, Österreich; 1954/55 WHO-Professor, Department of Pharmacology, School of Tropical Medicine, Calcutta.