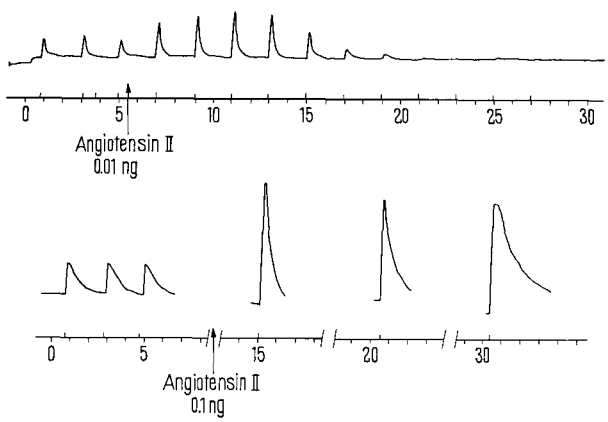
Very low doses of angiotensin had an opposite effect since 0.0001–0.01 ng of the hormone inhibited contractions induced by preganglionic stimulation (upper tracing, Figure). This inhibitory effect was prevented by dihydroergotamine (500 μg to 1 mg), a finding which could implicate norepinephrine in the synaptic effects of angiotensin.



Effect of angiotensin on transmission in the cat superior cervical ganglion. Contractions of the nictitating membrane induced by submaximal preganglionic stimulation applied for 5 sec every 2 min at a rate of 15 c/sec. Upper tracing: injection of 0.01 ng of angiotensin. Lower tracing: injection of 0.1 ng of angiotensin. Time marker: 1 min.

The effect of angiotensin on ganglionic transmission therefore appears to be dose-dependent, a phenomenon also noted by HAEFELY et al.[1]. The idea that angiotensin modifies synaptic transmission by facilitating the release of acetylcholine at the preganglionic nerve endings is compatible with these results[3].

Résumé. En quantités inférieures à 10 picogrammes, l'angiotensine inhibe la transmission synaptique du ganglion cervical supérieur du chat, et cet effet est antagonisé par la dihydroergotamine. En quantités supérieures à 10 picogrammes, l'angiotensine facilite la transmission synaptique, et de plus, stimule directement les cellules ganglionnaires.

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February 18, 1966.

[3] Acknowledgment: We thank Miss MICHELINE GIRARD for technical assistance. – Supported by grants MA 1860 and MA 1837 from the Medical Research Council of Canada and by grants from 'La Fondation Joseph Rhéaume'. – Synthetic angiotensin (Hypertensin) was graciously supplied by Ciba Limited (Canada) through the courtesy of Dr. C. W. MURPHY.

Testicular Degeneration in Rats by Carbon Tetrachloride Intoxication

Induction of hepatic lesion[1] and hepatogenic diabetes[2], activation of sympathetic nervous system[3] along with an increased release of catechol amines from adrenal medulla[4], and adrenal cortical hypertrophy and hyperfunction[5] by carbon tetrachloride have previously been described. Gonadal inhibition has been noted in rats after stressful stimuli – such as injection of alloxan, thyroxine, reserpine, chlorpromazine, 10% neutral formalin and epinephrine or norepinephrine. The present experiment has therefore been devised to see whether carbon tetrachloride has any interfering action in the testicular physiology of rats.

Twelve adult rats were selected for the experiments. Six of them received 0.3 ml/100 g carbon tetrachloride and coconut oil mixture (1:1) by the intraperitoneal route. The remaining six similarly received only coconut oil of an equal amount. Both the groups of animals were allowed to eat and drink ad libitum. On the 15th day of the experiment, animals of the experimental (CCl_4-treated) and control (oil-treated) groups were sacrificed. The testes, seminal vesicles and the pituitary of the animals were excised and immediately weighed on a torsion

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Effect of CCl_4 on testes, seminal vesicle and pituitary weights in rats

Group	No. of rats	Body weight (g)	Weight of testes		Weight of seminal vesicles		Weight of Pituitary	
			Actual (g)	Relative (g/100 g)	Actual (mg)	Relative (mg/100 g)	Actual (mg)	Relative (mg/100 g)
Control	6	153 ± 5.12[a]	2.36 ± 0.11[a]	1.55 ± 0.04[a]	472 ± 15.42[a]	309.5 ± 5.90[a]	5.0 ± 0.25[a]	3.23 ± 0.09[a]
Experimental (CCl_4-treated)	6	150 ± 6.83	1.48 ± 0.21	0.98 ± 0.12	191 ± 28.60	127.2 ± 17.11	7.3 ± 0.42	5.0 ± 0.14

[a] Means S.E.M.

balance. Testes were then taken for histological examination.

Gravimetric comparison indicated a significant increase in the weight of the pituitary but decrease of the testes and seminal vesicles in the experimental animals as compared to the controls (Table). Histological examination showed testicular atrophy and some abnormality in the process of spermatogenesis in the experimental animals.

From the experimental observations, hypofunction of testes has been noted after carbon tetrachloride intoxication. Alloxan, a chemical stresser and diabetogenic agent, has been reported to cause adrenal cortical hypertrophy[6], blockade of the pituitary gonadotrophin release[7] followed by gonadal inhibition[8,9], and it also develops hepatic lesion[10]. Carbon tetrachloride, a hepatotoxic agent, has similarly been shown to stimulate an increased release of adrenalin and noradrenalin from the adrenal medulla[4], adrenal cortical hypertrophy[5] and to develop hepatogenic diabetes[2]. From the available evidence, it is clear that maintenance of the spermatogenic function in the hypophysectomized rat requires both FSH and LH. Androgens are also essential for the normal functioning of the seminiferous tubules. Therefore, hypofunctioning of the Leydig cells, as reflected by the atrophy of the seminal vesicles followed by an abnormality of spermatogenesis after carbon tetrachloride intoxication, might suggest a blockade of the pituitary gonadotrophins release[11].

Zusammenfassung. Es wird gezeigt, dass CCl_4 (Carbontetrachloride) nicht nur eine hepatotoxische Wirkung besitzt, sondern offenbar auch eine endokrine Komponente, die wahrscheinlich an der Hypophyse angreift.

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Untersuchungen zur Neurosekretion bei *Acheta domesticus* L.

Das neurosekretorische System adulter Hausgrillen entspricht in seiner morphologisch-histologischen Ausprägung den allgemein bei Orthopteren vorliegenden Verhältnissen[1]: Im Gehirn finden sich neben der medial gelegenen grossen Gruppe neurosekretorischer Zellen der Pars intercerebralis, deren Sekret mit Chromalaunhämatoxylin-Phloxin (CHP) und Paraldehyd-Fuchsin (PAF) färbbar ist, vermutlich zwei kleinere laterale Gruppen; ihr Nachweis ist jedoch noch nicht absolut gesichert. Für die Unterscheidung feinster sekretführender Fasern ist die erstmals an Wirbeltieren erprobte Verwendung von Pseudoisocyaninen[2,3] und anschliessende fluoreszenzmikroskopische Untersuchung besonders geeignet. Nach Anfärbung mit Diäthyl-dichlorpseudoisocyaninchlorid, welches nach unseren Erfahrungen gegenüber der nichtchlorierten Form eine bedeutend längere Erhaltung der Fluoreszenz gewährleistet, leuchtet das Sekret in den Perikarya und den ableitenden Axonen selbst in feinster Verteilung in einem goldgelben Farbton vor dem dunkel kontrastierenden Untergrund auf (Figur 1). Ein Teil der sekretführenden Axone ist auf Schnittserien bis in den Bereich des Unterschlundganglions und darüber hinaus bis in das letzte Abdominalganglion zu verfolgen. Die Mehrzahl der neurosekretorischen Fasern vereinigt sich jedoch in den Corpora cardiaca, von wo weitere neurosekrethaltige Axone bis zu den Corpora allata vordringen. In den Corpora allata selbst wird das Sekret vermutlich in der peripheren Zone weitergeleitet.

Die erstmals bei *Gryllus campestris* festgestellte und als Nervus corporis allati II bezeichnete Verbindung zwischen Corpora allata und Unterschlundganglion[4] ist auch bei *Acheta domesticus* vorhanden. Bereits bei makroskopischer Betrachtung lässt dieser in seinem distalen Abschnitt

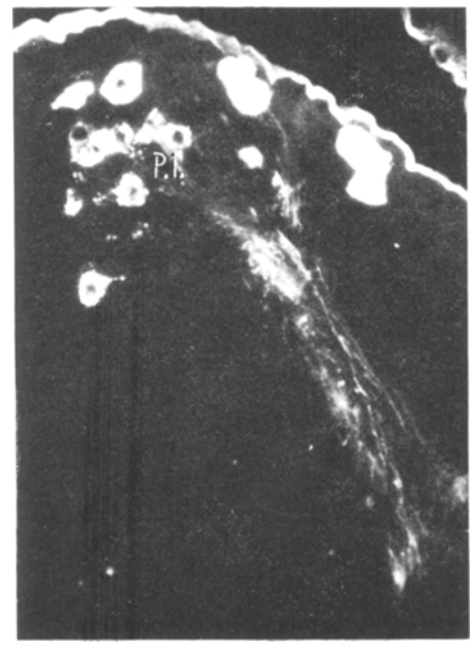

Fig. 1. *Acheta domesticus* Pars intercerebralis (P.i.) mit neurosekretorischen Zellen und Axonen. Diäthyldichlorpseudoisocyaninchlorid. Ca. × 940.

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