finding of marked amplitude decrement in the CN evoked responses during physiological habituation[6]. These investigations, together with those of Jane *et al.*[2] in the primary auditory and visual systems, would indicate that the search for electrophysiological correlates of 'attention' might be more profitably directed towards areas of the central nervous system outside the relay nuclei of classical sensory pathways.

Note added in proof. Since this communication was submitted, another paper (Starr, A., *Exp. Neurol.*, **10**, 191; 1964) has reported results which confirm those given here.

C. W. Dunlop
W. R. Webster
L. A. Simons

Department of Physiology,
University of Sydney, Australia.

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Potentiating Effect of Oxytocin on Contraction of Glycerine-extracted Psoas Muscle Fibre induced by Adenosine Triphosphate

Clinically it is a well-known phenomenon that whereas infusion of oxytocin increases the myometrial contractility, no such effect is noted on the skeletal muscle system. This is true even when as much as 3,000–4,000 mu of oxytocin is infused per min. It may be that this difference is the result of selective permeability properties of the membranes.

It is interesting to note, however, that once the membrane of the psoas muscle cell is destroyed and most of the soluble proteins and ions are removed, the contractile protein responds to the oxytocic effect of oxytocin. This communication deals with the *in vitro* demonstration of the potentiating effect of oxytocin on isometric contraction of the glycerine-extracted psoas muscle fibres induced by adenosinetriphosphate (ATP).

The glycerine-extracted fibres of the psoas muscle of the rabbit were prepared according to the technique of Szent-Györgyi[1] and the experiments were carried out after two weeks storage in glycerine (50 per cent). The average size of the fibres used was 10–20 × 0·1–0·2 mm. The fibres were then transferred to a small beaker and suspended horizontally with one end attached to the arm of a force and displacement transducer (Statham model 10*B*–0·3–350) with the help of adhesive plaster ('Loctite Adhesive 404') and the other to a vertical glass rod in a 30-ml. buffered ionic solution (*p*H 7·6) at room temperature (KCl 0·05 M, $MgCl_2$ $6H_2O$ 0·0003 M and *tris* base). The length of the fibres in each experiment did not vary more than 2 mm. The ATP used was made fresh (0·05 M) and kept at 0° C before adding to the bath solution.

In order to check the reproducibility of the technique in 30 replicate controls, tension was measured after the addition of 3 ml. of 0·05 M ATP solution. As shown in Table 1, the average tension in mg/cm fibre-length was found to be 254·8. The average differences for 30 replicate controls in mg/cm fibre-length were found to be 3·13 ± 8·26. The duplicate values for the control fibres for the tension developed do not differ significantly from each other and are, therefore, valid as controls.

Table 1. Average Tension developed and Average Differences in mg/cm Fibre-length between Replicate Controls

Total No. of replicates examined	Average tension developed (mg/cm)	Average differences for the replicate controls (mg/cm)
30	254·8	3·13 ± 8·26

Table 2. Average Tension developed in the Control and Oxotocin treated Fibres

Total No. of cases examined	Control (mg/cm)	Oxytocin (1 mu/ml.) treated (mg/cm)	Average differences ± *S.E.*
30	279·7	308·7	29 ± 10·19

Average differences are statistically significant at the 1 per cent level. $t = 2{\cdot}843$. $P < 0{\cdot}01$.

As shown in Table 2, after pretreatment of the fibre with oxytocin for 2–3 min ('Syntocinon-Sandoz' 1 mu per ml. of buffered ion solution) a definite potentiating effect on the ATP-induced contraction was noticed. The average increment in the development of tension in test strips was 29·0 ± 10·19 mg. These differences are statistically significant at the 1 per cent level ($t = 2{\cdot}843$; $P < 0{\cdot}01$). A typical tracing of the contraction pattern (isometric) is shown in Fig. 1.

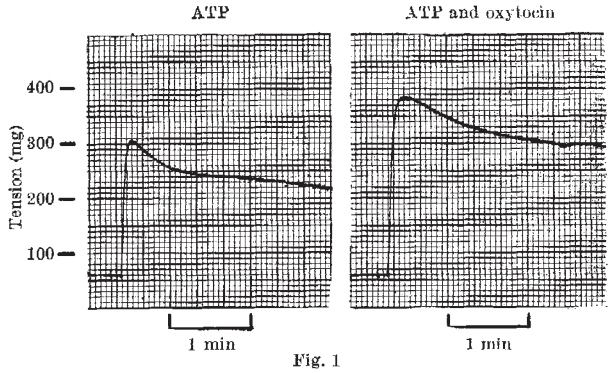

Fig. 1

It would seem, on the basis of this work and under the conditions used, that once the cell membrane is destroyed the contractile proteins of skeletal muscle (psoas) is responsive to oxytocin. The question now arises as to the underlying mechanism involved. In preliminary experiments[2] it does not seem that oxytocin has any influence on ATPase activity of glycerine-extracted contractile protein (the amount of inorganic phosphorus liberated in the presence of ATP as substrate was taken as a measure of ATPase activity).

It is further interesting to note that whereas progesterone has a definite inhibitory effect on the intact myometrial cell in a fibre[3], the same hormone is devoid of such an action (30 and 100 γ/ml. buffered ionic solution) on glycerine-extracted psoas fibres[4].

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D. Kumar
T. Wagatsuma
Allan C. Barnes

Department of Gynecology and Obstetrics,
Johns Hopkins Medical School and Hospital,
Baltimore, Maryland.

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Comparison of Serum Total Lipid during Cold Exposure in Hibernating and Non-hibernating Mammals

Lipid metabolism in mammals has been widely investigated with reference to cold acclimation and hibernation. In this laboratory, work on lipid metabolism is hamsters during cold exposure and hibernation has been focused on rates of lipid synthesis or utilization in tissues *in vitro*. This communication is concerned with measurement of the circulating total lipid in the intact animal. Analyses