The effects described for the complement were not observed if the guinea-pig serum was introduced 1 h to 24 h following anti-synaptosomal fraction serum.

An anti-myosin serum or an absorbed anti-synaptosomal fraction did not prevent the changes induced by the complement.

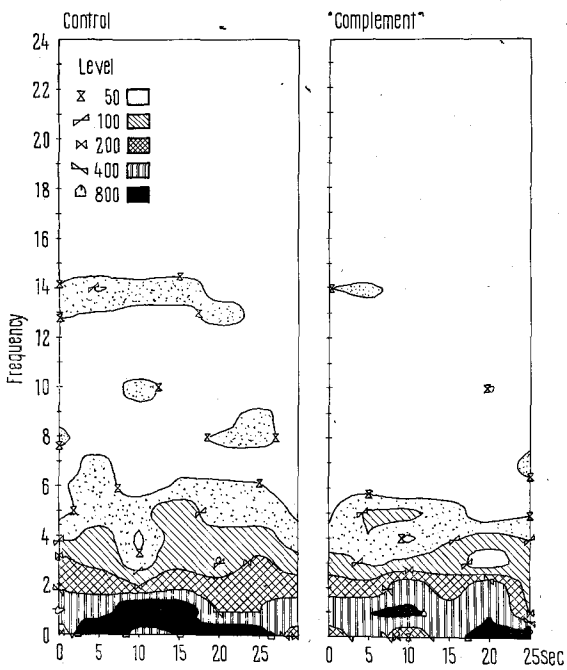

Fig. 3. Contour maps of serial autospectra of the EEG from the lateral geniculate body before (control) and 1 h after application of the complement. 6 consecutive EEG epochs of 5 sec have been combined in each contour map. These maps display in 3 dimension the power of each frequency. The abcissa is the time axis; the ordinate is the frequency axis and the shading represents power. The range for each shading is in $\mu V^2/Hz$; the darker shading represents higher power, the lighter shading corresponds to lower power.

The results suggest that the anti-synaptosomal serum has some specificity in producing changes in the impedance and EP as well as in preventing those elicited by the 'complement'. The usual role of the 'complement' is to cause lysis of the cells that have bound antibodies. If this were happening in the brain, one would expect a drop of impedance after antibodies and complement, but not a drop after 'complement' alone. Our observations are inconsistent with this simple model. Further studies of the changes in the ultrastructure are necessary in order to answer the question of whether those changes in EP and in the conductance of the extracellular space are determined by the state of its structural elements, including interdependent factors such as hydration and divalent cation binding[13], as well as by changes in its cross sectional area[14].

Résumé. L'introduction du «complément» (sérum de cobaye) dans le corps genouillé latéral du chat, produit une diminution des potentiels évoqués photiques et de l'impédance cérébrale. Ces effets sont prévenus par l'application locale d'un anti-serum réagissant spécifiquement avec les synaptosomes cérébraux.

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Tissue Ca Content of Intestinal Smooth Muscles and the Ca^{++}-Concentration of the Incubation Medium

Reports on the tissue Ca content of smooth muscles have supplied non-consistent values (for review see[1]). To see if this could be due to different experimental conditions, i.e. varying (Ca^{++}) of the incubation medium, smooth muscle pieces have been incubated in Tyrode solution of varying $[Ca^{++}]$ and the changes in tissue Ca content after stepwise changes of the $[Ca^{++}]$ of Tyrode solution have been determined.

The experiments were performed using isolated longitudinal muscle strips from guinea-pig ileum[2,3]. The strips were incubated at 30 °C in Tyrode solution of the following composition (m*M*): NaCl 137, KCl 2.7, $MgCl_2$ 1.0, $NaHCO_3$ 12, NaH_2PO_4 0.2, glucose 5.5 and $CaCl_2$ as indicated. The extracellular space amounted to 0.45 per 1.0 g wet wt. of muscle as determined by means of ^{14}C-sucrose. The wet weight of the smooth muscle pieces ranged from 20 to 50 mg. The Ca was determined by a fluorophotometric method according to ZEPF[4].

In the Table the equilibrium values for the tissue Ca content are summarized, as determined after 2 h of incubation in Tyrode solutions of various $[Ca^{++}]$. The tissue Ca content rose from 0.14 to 3.9 mmol/kg wet wt. by rising the $[Ca^{++}]$ of the Tyrode solution from 0.0 to 2.7 m*M*, whereas the ratio $Ca_{cell.} : Ca_{Tyr.}$ decreased simultaneously.

The adaptation of the tissue Ca upon a new $[Ca^{++}]$ of the Tyrode solution is depicted in the Figure. Both after increasing or decreasing the $[Ca^{++}]$, the new equilibrium of the tissue Ca content was reached in about 20 min. Taking into account the extracellular space, the half life time of the cellular adaptations process was calculated to be about 5 min for all conditions studied, which is similar as that found in atrial tissue[5].

The results reported clearly demonstrate the dependence of the tissue Ca content of smooth muscles on the $[Ca^{++}]$

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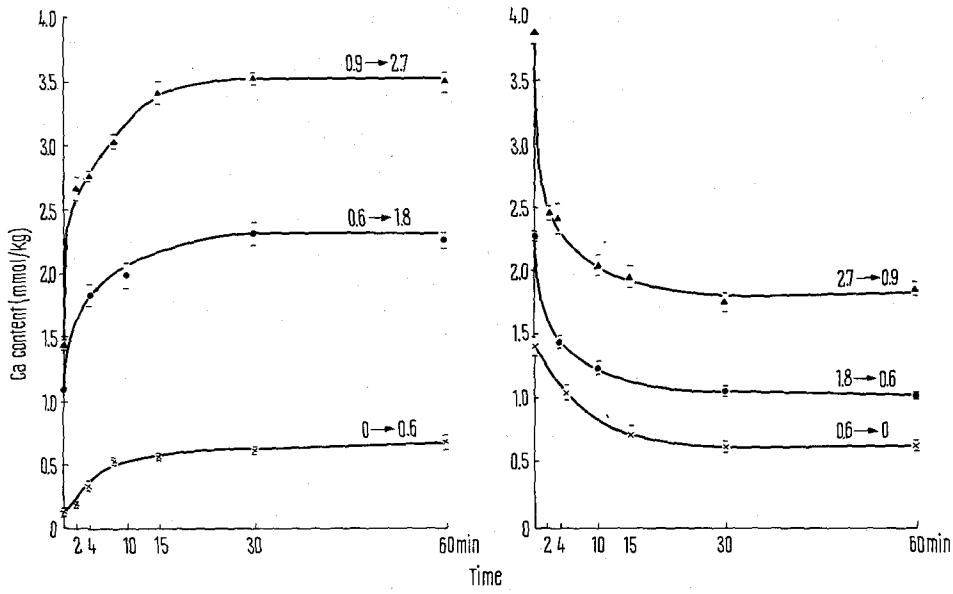

Time course of the adaptation of tissue Ca to an altered [Ca^{++}] of the incubation medium. The alteration of the $[Ca]_{Tyr.}$ is indicated in m*M* at each curve. Abscissa: time in minutes after the alteration. Ordinate: tissue Ca content in mmol/kg wet wt. The points represent means ± S.E.M. of at least 10 muscle strips.

Dependence of the tissue Ca content and the ratio Ca_{cell} : Ca_{Tyr} on the [Ca^{++}] of Tyrode solution, experiments using isolated longitudinal muscle strips of guinea-pig ileum

$[Ca]_{Tyr.}$ (m*M*)	Tissue Ca mmol/kg wet wt.	Ratio $Ca_{cell.}$: $Ca_{Tyr.}$
0	0.14	—
0.6	1.1	2.5
0.9	1.4	2.1
1.8	2.7	1.8
2.7	3.9	1.6

the incubation medium. The new equilibrium value is reached in about 20 min which is significantly longer than the time necessary for diffusion of Ca^{++} into or out of the extracellular space. A half life time of about 5 min rather resembles the time course of the exchanges process of Ca in smooth muscles measured by means of ^{45}Ca[6]. Reports on tissue Ca content of smooth muscles can only be compared if the results are obtained under identical conditions, especially regarding the [Ca^{++}] of the incubation medium.

Zusammenfassung. Der Ca-Gehalt von isolierter Längsmuskulatur des Meerschweinchens hängt stark von der Ca-Konzentration der Tyrode-Lösung ab (untersuchter Bereich 0–2,7 m*M*). Nach schrittweiser Änderung der extracellulären Ca-Konzentration erreicht der zelluläre Ca-Gehalt nach etwa 20 Minuten seinen neuen Gleichgewichtswert.

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Giberellic Acid and β-Sitosterol as Sterilants of the Cotton Leaf worm *Spodoptera littoralis* Boisduval

The use of growth hormones or chemicals capable of inducing a similar action as insecticides or chemosterilants was suggested as a new approach to the biological control of insects[1]. Investigations were also made on the possible sterilizing effect of mitotic poisons and antimetabolites against a few insect species[2–7]. The present contribution includes the evaluation of the effect of the phyto-hormone giberellic acid and the phytosterol β-sitosterol on the development of the cotton leaf worm *Spodoptera littoralis* Boisduval.

The substance to be tested was incorporated at 0.1 concentration into the standard semiartificial diet developed for the cotton leaf worm[8], composed mainly of dry kidney beans, agar, ascorbic acid, Brewer's yeast and a vitamin complex. The same method for rearing was adopted. 200 newly hatched larvae of *S. littoralis* were fed on the treated diet till pupation. Untreated diet was used as the check in all cases. The experiments were run at 30 °C. The

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