

d'une porteuse uniquement modulée après hétérodynation. Ils trouvent qu'à égalité du signal à détecter la méthode hétérodyne conduit à des amplitudes du courant M.F., triples de celles obtenues par la simple détection d'un signal doublement modulé. Malgré ce désavantage la double modulation d'une hyperfréquence présente une supériorité marquée à cause de la simplicité des circuits, employés.

ΦΑΡΜΑΚΟΛΟΓΙΑ.—Sensitivity of Rectus abdominis to acetylcholine in frogs poisoned parenterally with chloral, strychnin or digitalis, by N. Klisiunis*. Ἀνεκοινώθη ὑπὸ τοῦ κ. Γεωργ. Ἰωακείμογλου.

It is well known (1) that while KCl is effective on direct application any where on the muscle drugs like Ach (acetylcholine), nicotine show a selective excitatory action on endplate regions. The most sensitive reagent for Ach is the biological determination on the M. Rectus of the frog. In this way we can examine for ex. the antagonistic action of tubocurarine on Ach. Like tubocurarine other substances also can change the sensitivity of Rectus to Ach. From the available literature we found that narcotics increase the sensitivity of recti in vitro to Ach. Strychnin in low concentrations decreases it. (2). Some pretend that cardiac glycosides does not modify Ach sensitivity (2a) in vitro, while others pretend that they increase it (3). The question arises what is the sensitivity of the Recti to Ach when these drugs are not examined in vitro but are injected into the frog parenterally. For examining this question we have used the recti of frogs in the way described by W. Spurrel (4).

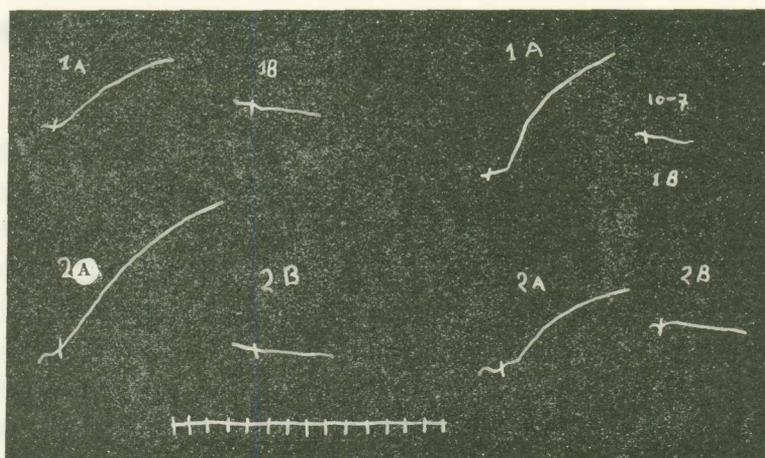
We have injected into the leg of frogs chloral 0,5 c.c. of a 10% sol. or 0,5 c.c. of a 0,02% strychn. nitr. sol. To other frogs 50 - 100 strophanthin was injected or 1 c.c. of dealcoholised digitalis tincture (= 1 int. unit). 1/2 hour after injection of strychnin or chloral and 2,5-3 hrs. after injection of glycosides, the recti were taken out and put in eserinated Ringer** 1:500,000 in refrigerator for 1-2 hrs. After this time the experiment was carried out by adding, after previous 3' eserination, in a 4 c.c. bath different

* Ν. ΚΛΕΙΣΙΟΥΝΗΣ, ἡ εὐαισθησία τοῦ ὀρθοῦ κοιλιακοῦ μύος εἰς τὴν ἀκετυλοχολίνη ἐπὶ βατράχων δηλητηριασθέντων παρεντερικῶς διὰ στρυχνίνης, χλωράλης ἢ δακτυλίτιδος.

** Dilutions of Ach were prepared from a st. sol. of Ach. 1:1000 which has been made weakly acid. We have used Acetylcholini Chloridum La Roche. Ordinary Ringer was applied (6 g. NaCl, 0,075 KCl 0,1g NaHCO₃, 0,1g CaCl₂ H₂O 1000 c.c.).

dilutions of stand. Ach solution + (Ph = 6,9 - 7,0). Intervals between additions of Ach (not including the 3' previous eserisation) were 10'. The bath was aerated through a stream of bubbles of expiration air. The effect of expired air besides buffering solution, is to shift Ph slightly to acid and this potentiates transmission (5,6).

A Gimbal level was used to record the contractions on the cymograph. The sensitivity of recti of normal frogs to Ach was 1×10^{-6} . 1×10^{-7} had



Upper curves demonstrate the action of Ach sol. on recti of chloralised frogs and lower curves demonstrate the action of Ach sol. on recti of strychninised frogs. 1A, 2A means Ach 1×10^{-6} , 1B, 2B = Ach 1×10^{-7} , Time = 20".

Αἱ ἄνω καμπύλαι παριστοῦν τὴν ἐνέργειαν ἀραιώσεων Ach ἐπὶ ὀρθῶν μυῶν χλωραλισθέντων βατράχων, αἱ δὲ κάτω καμπύλαι ἐπὶ ὀρθῶν μυῶν στρυχνισθέντων βατράχων. 1A, 2A εἶναι Ach 1×10^{-6} , 1B, 2B = Ach 1×10^{-7} . Χρόνος = 20".

no action or the action was very weak. In this way it was found that no significant differences in Ach sensitivity exist between recti of frogs which have been injected with strychnin or chloral or glycosides and recti taken from normal frogs. It sometimes happened that recti taken from chloral frogs reacted more strongly to Ach 10^{-6} than recti from strychninised frogs but in general no significant differences were found.

Π Ε Ρ Ι Λ Η Ψ Ι Σ

Ὁ ὀρθὸς μῦς τοῦ βατράχου ἀποτελεῖ τὸ εὐαίσθητότερον βιολογικὸν ἀντιδραστήριο εἰς τὴν ἀκετυλοχολίνην (ACH). Διὰ τὴν στρυχνίνην, χλωράλην καὶ δακτυλίτιδα ὑποστηρίζεται ὑπὸ διαφόρων ἐρευνητῶν ὅτι αὐταὶ μεταβάλλουν τὴν

εὐαισθησίαν τοῦ ὀρθοῦ μυὸς εἰς τὴν ACH in vitro. Ἐνταῦθα ἐξητάσαμεν ποία εἶναι ἡ εὐαισθησία τοῦ ὀρθοῦ μυὸς εἰς τὴν ACH, ἐὰν τὰ ἄνωθι φάρμακα δὲν ἐξετασθῶν in vitro ἀλλὰ ἐνεθοῦν παρεντερικῶς εἰς βατράχους. Ἡ ἐξέτασις ἐγένετο κατὰ τὴν μέθοδον Spurrel (4). Ἐκ τῆς γενομένης δ' ἐρεῦνης ἀπεδείχθη ὅτι ἡ εὐαισθησία εἰς τὴν ACH τοῦ ὀρθοῦ μυὸς βατράχων λαβόντων παρεντερικῶς γλωράλην, στρυχνίνην ἢ δακτυλίτιδα δὲν μεταβάλλεται.

B I B L I O G R A P H Y

- 1) *Kuffler*, New York Academy of Sciences. Vol. XL. VII. Art. 6 pg. 769.
- 2) *C. Torda, H. G. Wolff*:
 - a) Biol. abstr. 22 2118 20929
 - b) » » 22 1598 16273
 - c) Chem. » 1948 2019
 - d) » » 1948 3082
 - e) » » 1943 3831
- 3) *H. Mazella*, Biol. abstr. 5779, 1947, 21.
- 4) *Exp. Physiology, D. T. Harris*, 4th ed. J. A. Churchill, London 1947.
- 5) *J. Finerty, R. Gesell*, Am. J. of Phys. 145, 1. 1945.
- 6) *Ambach*. Journ. of Phys. 104 1945.

ΦΑΡΜΑΚΟΛΟΓΙΑ.—**Experimental investigations on the toxic action of rhodanates in the rabbits, by N. Klissianis***. Ἀνεκοινώθη ὑπὸ τοῦ κ. Γεωργ. Ἰωακείμογλου.

NaSCN has been used in hypertension. Unfortunately side actions as asthenia, exanthemes and symptoms of centr. nerv. syst. stimulation etc. do not allow a safe dosage. From the available literature we have found many experiments which could suggest various explanations of the above disturbances. These are summarised in the list below.

- a) Musclicaction (1).
- b) Blocking of respiratory enzymes (histotoxic hypoxia) (2).
- c) Production of -CN in vivo (3).
- d) Displacement of Cl' or I' by -SCN, an action analogous to Br' action.
- e) Sensitization to K. (4).

* Ν. ΚΛΕΙΣΙΟΥΝΗΣ, Πειραματικά ἔρευνα ὑπὸ τῆς ἐνεργείας τοῦ ροδανικοῦ νατρίου εἰς κονίχλους.