SCIENTIFIC PROCEEDINGS

ABSTRACTS OF COMMUNICATIONS.

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President Calkins in the chair.

37 (1619)

A pharmacodynamic analysis of cocain action of the cerebrum.

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The effect of cocain and its chemical components was studied on the intelligent behavior of albino rats in the circular maze. 25 rats were used altogether in the investigation. The animals were trained in the circular maze until they were able to find their way from the entrance to the center without making any errors and in the shortest period of time. The drugs studied were then injected subcutaneously and the effect of the same studied after absorption. It was found that one milligram of cocain produced a marked depression on the behavior of the rats as indicated by incoördination, slowness of movement and loss of memory and intelligence. Smaller doses (one thirtieth to one tenth milligram) also produced distinct depression as indicated by the time of performance and the number of errors made.

An effort was made to ascertain whether cocain produced a primary stimulation of the cerebrum. For this purpose very small doses of cocain were injected. It was found that minute quantities of the drug either failed to produce any effect or produced depression and in no case was there a primary stimulation noted.

Injection of ecgonin-hydrochloride and benzoyl-ecgonin produced no effect on the behavior of the rats even when administered in doses much larger than that of cocain. Injections of sodium benzoate solution produced no effects. Neither was there any depressant or stimulating effect noted after injections of small doses of methyl alcohol solution (1 per cent.).

Various mixtures of ecgonin hydrochloride, benzoyl-ecgonin, sodium benzoate and methyl alcohol in different proportions were found to produce very little effect on the behavior of rats. As a result of the various experiments it is therefore concluded firstly, that cocain, as such, exerts a depressant action on the intelligent behavior of albino rats, secondly, that in no cases even after minute doses of the alkaloid was there a primary stimulation noted and thirdly, that the various components into which the cocain molecule can be split up, when injected individually or as a simple mixture of each other, do not cause the same action as their chemical combination in the form of cocain. The complete data of this investigation will appear in the *Archives Internationales de Pharmacodynamie et de Therapie.*

38 (1620)

Improved methods for staining spirochaeta pallida in tissue.[1]

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The two methods outlined here present the first satisfactory ones devised for the staining of spirochetes in single sections of tissue mounted upon cover-glasses. We consider them of great value for the following reasons: They are more certain than the Levaditi method of staining in bulk; the time required is shortened to hours, instead of the days required by that method; they have a much greater applicability to practical diagnostic work in that they can be used for single sections, thus permitting a closer control of histological findings.

[1] Researches conducted under a grant from the Interdepartmental Social Hygiene Board, Washington.