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- (1)* [www.muby.itgo.com/MSDS/Zinc sulfate](http://www.muby.itgo.com/MSDS/Zinc%20sulfate).
- (2)* www.ehow.com/facts_5499491_benefits-Zinc-sulfate.h.

Table 1: Susceptibility of 4th instars larval of *S.littoralis* fed on Castor bean leaves treated with different concentrations (mg/ml) of Zinc sulfate ZNSO₄

Tested material	LC	Conc.mg/ml	95% Fiducial limits		Slope For LC ₅₀
			Upper	Lower	
Zinc sulfate	25	0.792	1.083	0.502	1.23±0.145
	50	2.805	3.501	2.243	
	90	30.992	65.992	19.033	

Table2: Biological aspects of *S.littoralis* fed as 4th instars larvae with LC₅₀ concentration of zinc sulfate (means±S.E).

Treatment	Larval duration (days)	Pupal duration (days)	Pupal weight (mg)	%Pupation
Zink sulfate	15.7±0.21 **	12.40±0.05 **	389.00±8.00 *	67
Control(Check)	12.2±0.30	8.6±0.10	485.00±0.24	95

** : Highly significance

* : Significant at P<0.05

Table3: Number of deposited eggs and egg hatchability for mated females of *S.littoralis* fed as 4th instars larvae with LC₅₀ concentration of Zink sulfate (means±S.E).

T♀×T♂		N♀×T♂		T♀N×♂		N♀N×♂	
Mean No. eggs/♀ ± S.E	% Egg hatchability	Mean No. eggs/♀ ± S.E	% Egg hatchability	Mean No eggs/♀ ± S.E	% Egg hatchability	Mean No eggs/♀ ± S.E	% Egg hatchability
210±1.2 (83.47)	31 (86.37)	368±2.5 (71.02)	38 (61.22)	270 ±2.4 (78.74)	34 (65.31)	1270 ±6.5	98

Values between brackets represent percentages of reduction as compared with control.
T:Treated N: Normal untreated

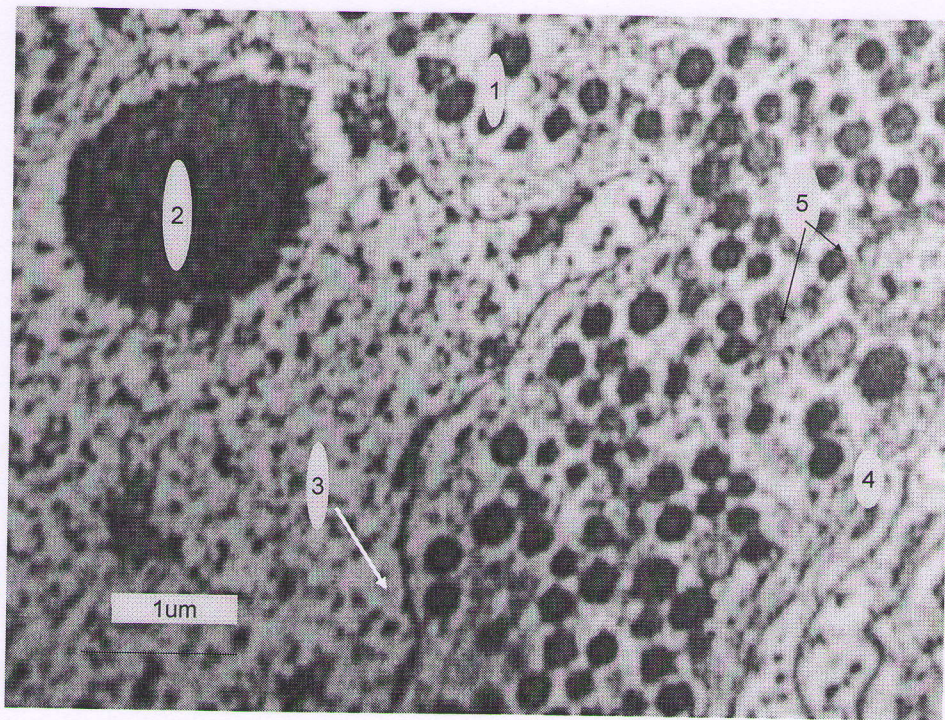


Fig1: Section through normal neurosecretory cells in the brain of *S. littoralis* larvae showing many secretory granules (1), big nucleolus(2), nuclear membrane (3), cell membrane (4), mitochondria (5).

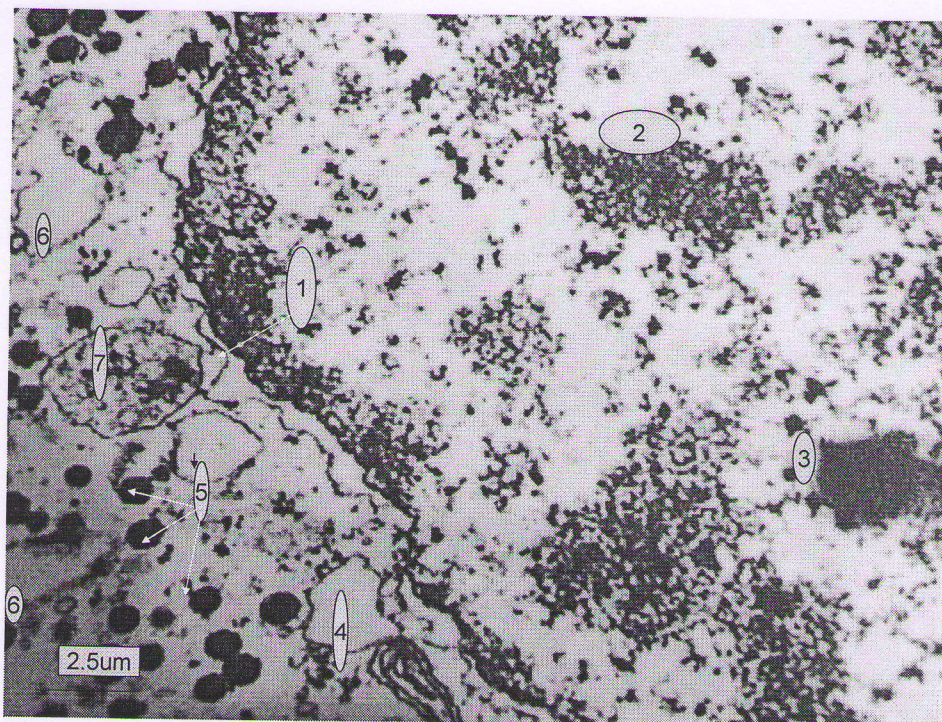


Fig1A:Section through: the neurosecretory cells in the brain of the fed larvae of *S. littoralis* nuclear membrane(1),nuclear chromatin(2),nucleolus(3),Golgi body(4),secretory granules(5),vacuoles(6), autophagic vacuoles(7).

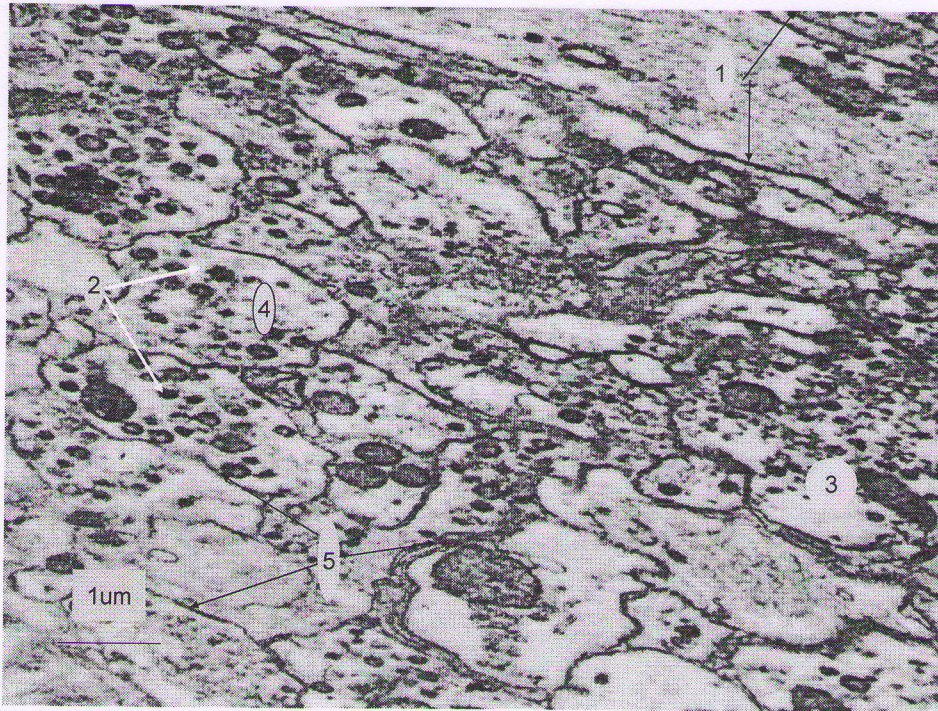


Fig2:Section through normal corpus cardiacum of *S.littoralis* larvae showing membrane of axon of the secretory cell(1),secretory droplets in variable size(2),mitochondria(3),dendrites(4)denderitic membrane(5).

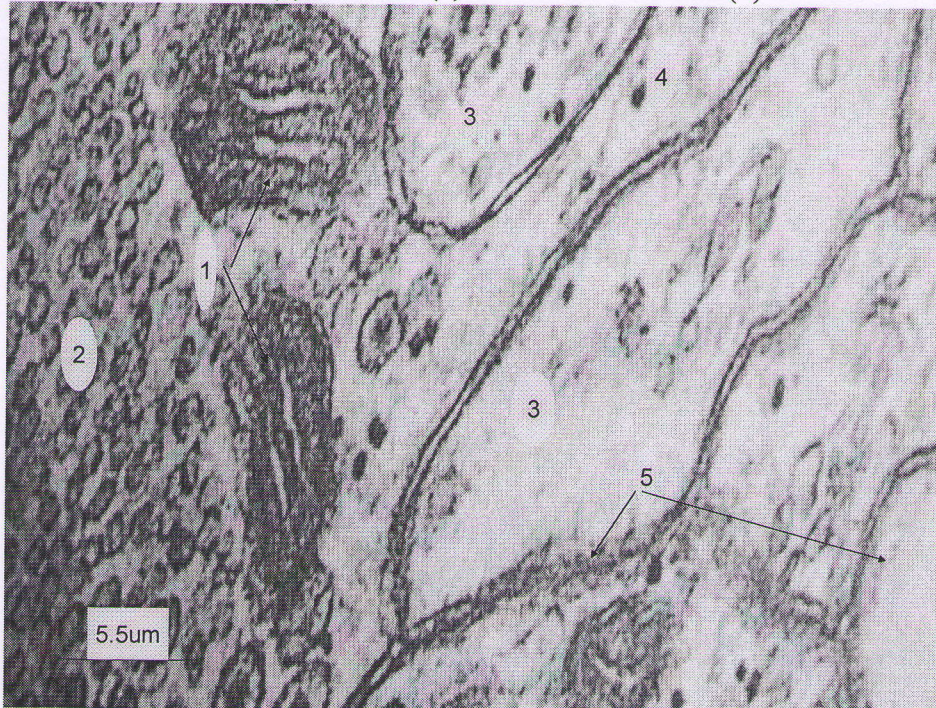


Fig2A:Section through Corpus cardiacum of fed larvae of *S. littoralis* clearing the enlargement of mitochondria(1),great quantities of small secretory granules(2),extensiveness of the dendrites(3) dark granules(4),dendritic membrane(5).