IV)- Effect of water quality on spawning :

Effects of water quality on the spawning activity of the snails and hatchability of their laying eggs (Table (16) and fig.(14)) show that the number of egg masses of the three snail species living in the two regions (Giza and Tanta) was more or less equal for each species. The mean egg masses for 5 pairs experimented snails from each species collected from Giza water during one week was 8 ± 0.32, 5 ± 0.45 and 7 ± 0.32 for Bulinus truncatus, Biomphlaria alexandrina and Lymnaea cailliaudi respectively, and 9 ± 0.32, 5 ± 0.45 and 7 ± 0.32 for Bulinus truncatus, Biomphlaria alexandrina and Lymnaea cailliaudi respectively, collected from Tanta water after one week. The mean number of egg masses at the end of one week for Bulinus truncatus collected from Giza water was significantly lower, when it was compared with that from Tanta water ($P < 0.05$).

However, the mean number of eggs in each egg mass (Table 17. and fig. 15) was different constituting 12 ± 0.46, 14 ± 0.55 and 8 ± 0.38 eggs per each egg mass for snails; Biomphlaria alexandrina, Bulinus truncatus and Lymnaea cailliaudi respectively, collected from Giza water. The mean number of eggs/egg mass for the same snails collected from Tanta water was 15 ± 0.50, 18 ± 0.32 and 10 ± 0.44 eggs/mass. The mean number of egg masses for snails collected from Giza

TABLE (16): The mean number of egg masses of snails colllected from Giza and Tanta water. Each group constituted 10 animals kept for one week in the related water at October.

	Bulinus truncatus		Biomphlaria Alexandrina		Lymnaea cailliaudi	
	Tanta	Giza	Tanta	Giza	Tanta	Giza
Min.	8.00	7.00	4.00	4.00	6.00	6.00
Max.	10.00	9.00	6.00	6.00	8.00	8.00
Mean	9.00	8.00	5.00	5.00	7.00	7.00
S.E.±	0.32	0.32	0.45	0.45	0.32	0.32
% Diff		-11.11				
P		< .05				

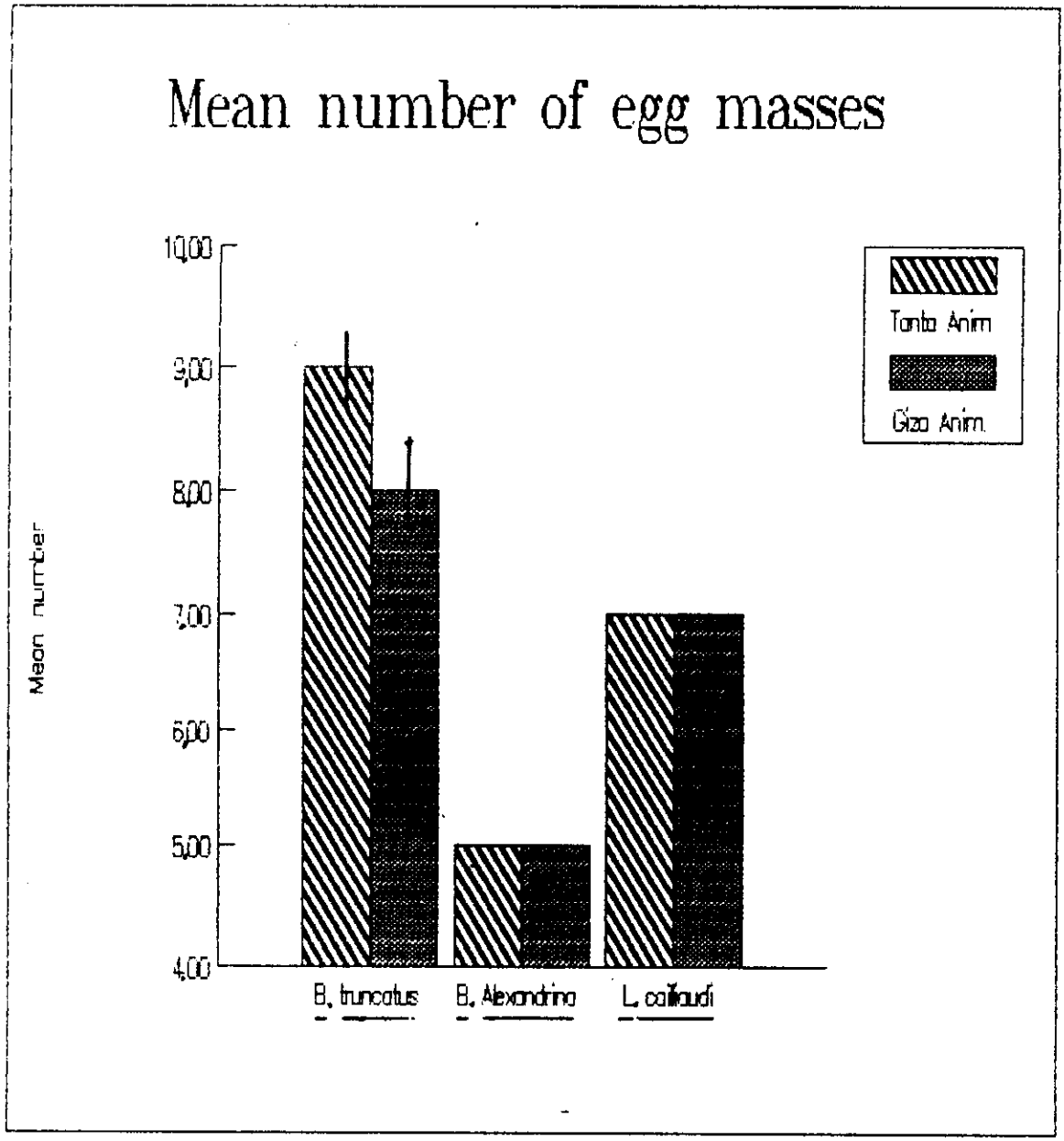

Fig.(14): Mean number of egg masses of Bulinus truncatus, Biomphlaria alexandrina and Lymnaeea cailliaudi snails collected from Giza and Tanta water.

TABLE (17): The mean number of eggs/egg mass of snails colllected from Giza and Tanta water.

	Bulinus truncatus		Biomphlaria alexandrina		Lymnaea cailliaudi	
	Tanta	Giza	Tanta	Giza	Tanta	Giza
Min.	13.00	9.00	17.00	13.00	9.00	7.00
Max.	17.00	13.00	19.00	16.00	12.00	10.00
Mean	15.00	12.00	18.00	14.00	10.00	8.00
S.E.±	0.50	0.46	0.32	0.55	0.44	0.38
% Diff		-20		-22.2		-20
P		< .05		< .05		< .05

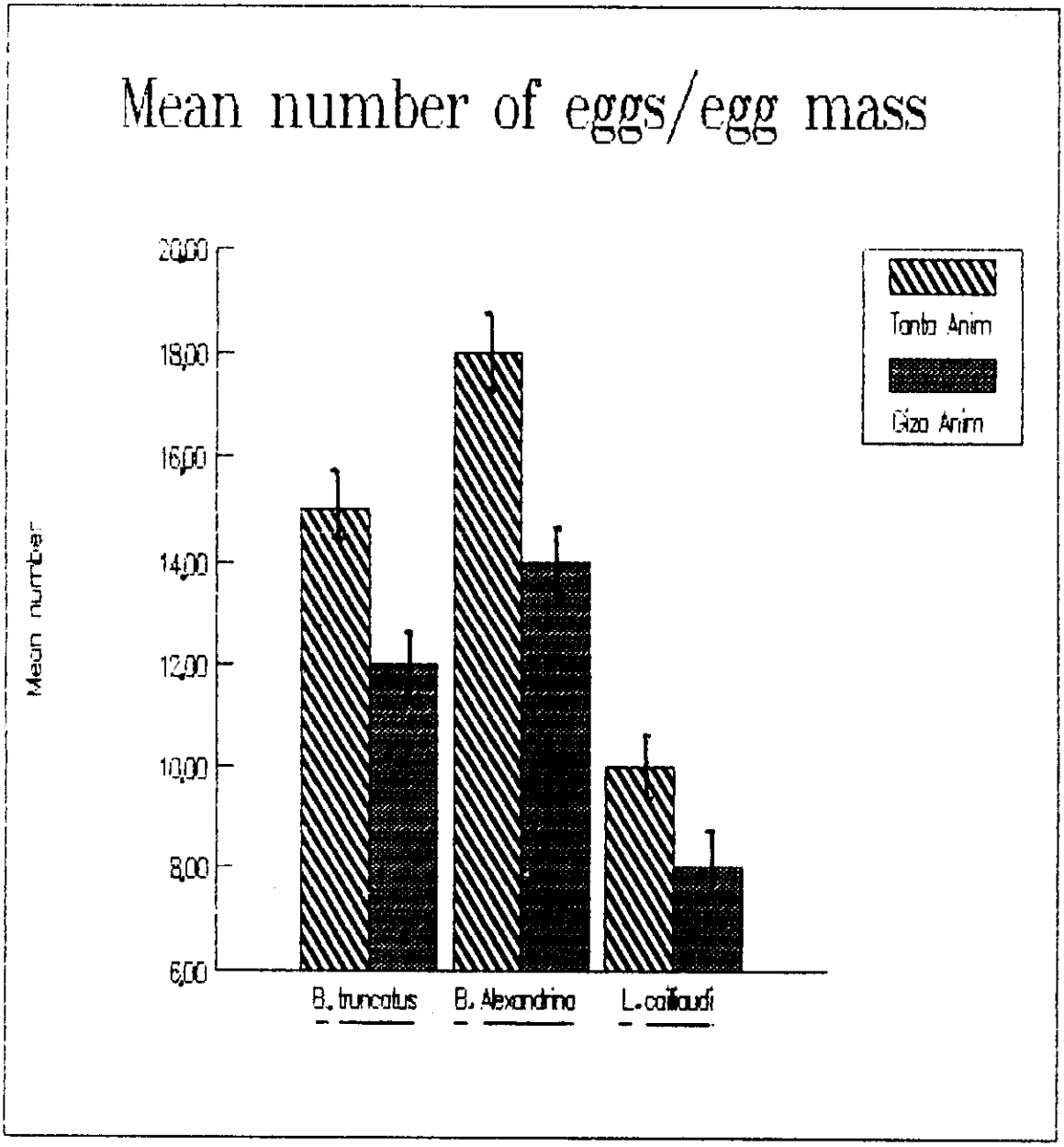

Fig.(15): Mean number of eggs/egg mass for Bulinus truncatus, Biomphlaria alexandrina and Lymnaea cailliaudi snails collected from Giza and Tanta water.

water was significantly lower, when it was compared with that from Tanta water ($P < 0.05$).

Table(18) and fig.(16) show that the mean number of alive embryos in each egg mass, counted after 5 days of egg laying of eggs collected from Giza water was 5 ± 0.14 and 8 ± 0.77 embryo/mass for snails Bulinus truncatus and Biomphlaria alexandrina respectively. This mean number of alive embryo in each egg mass, counted after 12 days of egg laying for Lymnaea cailliaudi was 4 ± 0.38 embryos /mass. The corresponding mean number of alive embryos in the patch of eggs collected from Tanta water was 13 ± 1.0, 16 ± 1.6 and 7 ± 0.38 embryo/patch for the same snails respectively.

From these results it can be seen that the snails collected from Giza water laid anumber of eggs lower than those collected from Tanta water, i.e. there was a significant decrease in the number of alive embryos ($P \leq 0.05$).

There was also a decrease in the percentage of hatchability of the eggs of snails collected from Giza water. These percentages were 41.66 %, 57.14 % and 50 % for Bulinus truncatus, Biomphlaria alexandrina and Lymnaea cailliaudi respectively. The corresponding percentages of Tanta water snails were 86.66 %, 88.88 %, 70 % for Bulinus truncatus Biomphlaria alexandrina and Lymnaea cailliaudi respectively.

TABLE (18): The mean number of alive embryo and % hatching of eggs of snails collected from Giza and Tanta water.

	Bulinus truncatus		Biomphlaria alexandrina		Lymnaea cailliaudi	
	Tanta	Giza	Tanta	Giza	Tanta	Giza
Min.	8.00	4.00	10.00	6.00	5.00	3.00
Max.	18.00	6.00	22.00	10.00	9.00	5.00
Mean	13.00	5.00	16.00	8.00	7.00	4.00
S.E.±	1.00	0.14	1.60	0.77	0.38	0.38
% Diff		-61		-50		-43
P		< .05		< .05		< .05
Hach. of eggs (%)	86.66	41.66	88.88	57.14	70.00	50.00

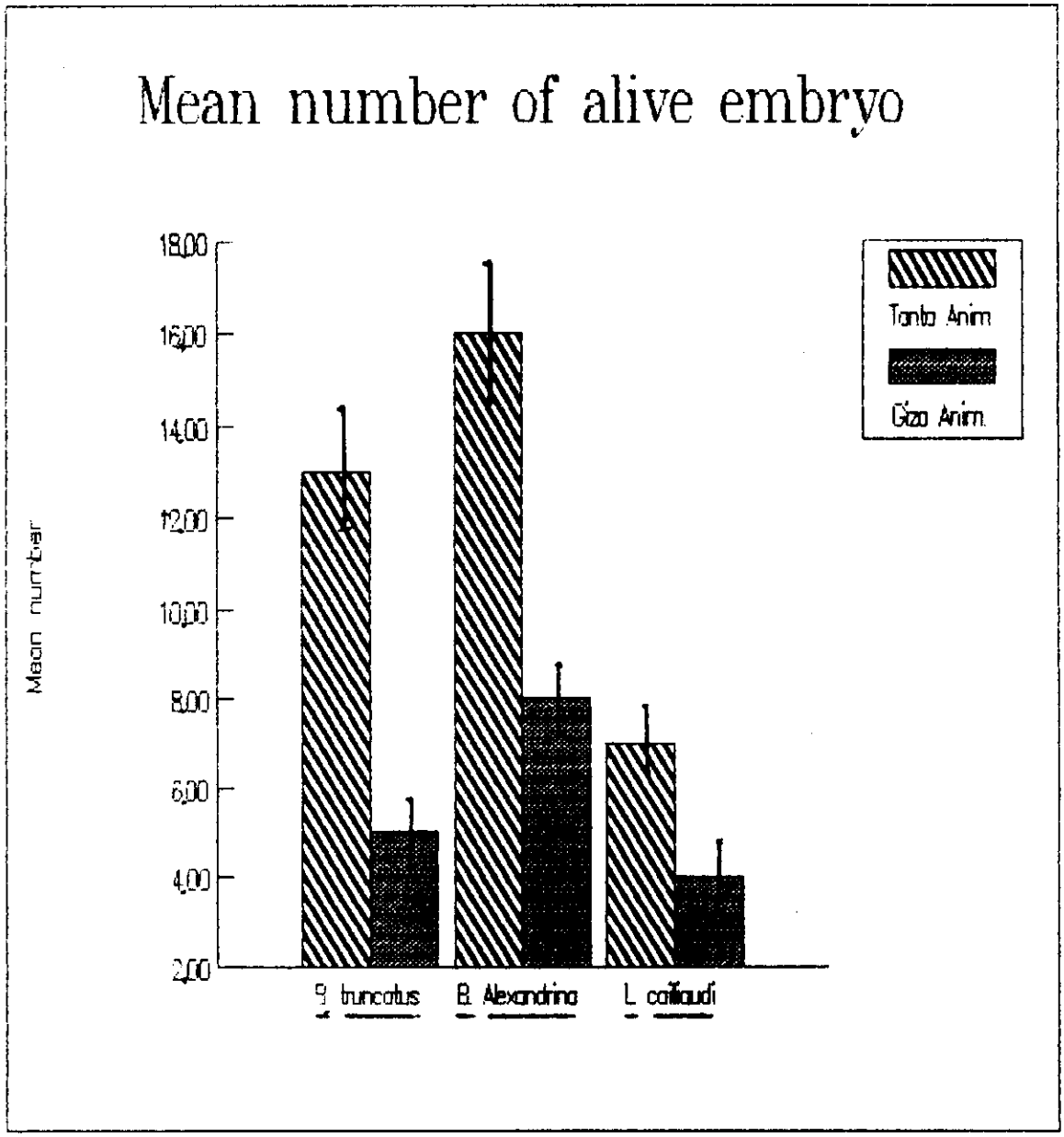

Fig.(16): Mean number of alive embryos of Bulinus truncatus, Biomphlaria alexandrina and Lymnaea cailliaudi snails collected from Giza and Tanta water.