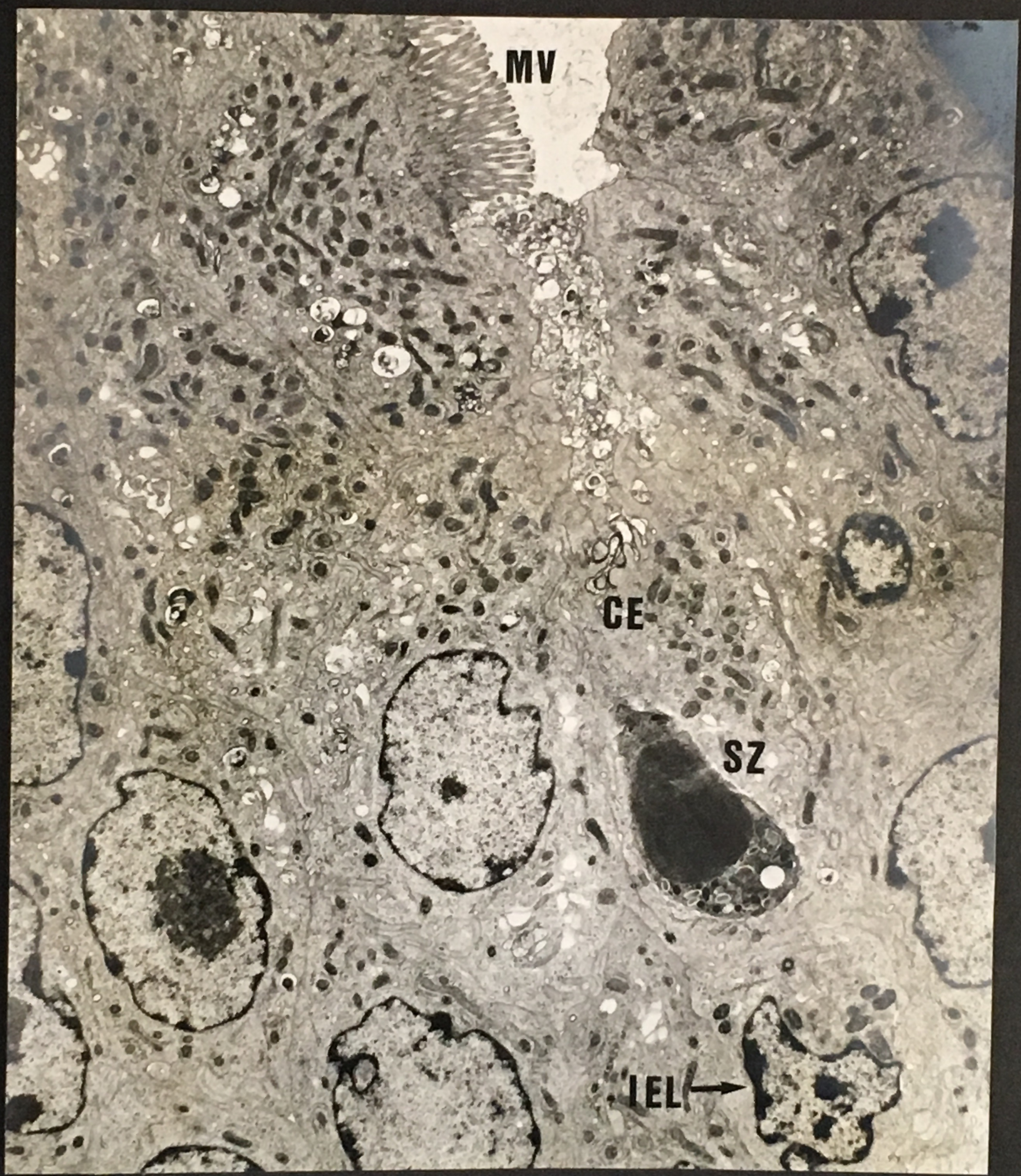
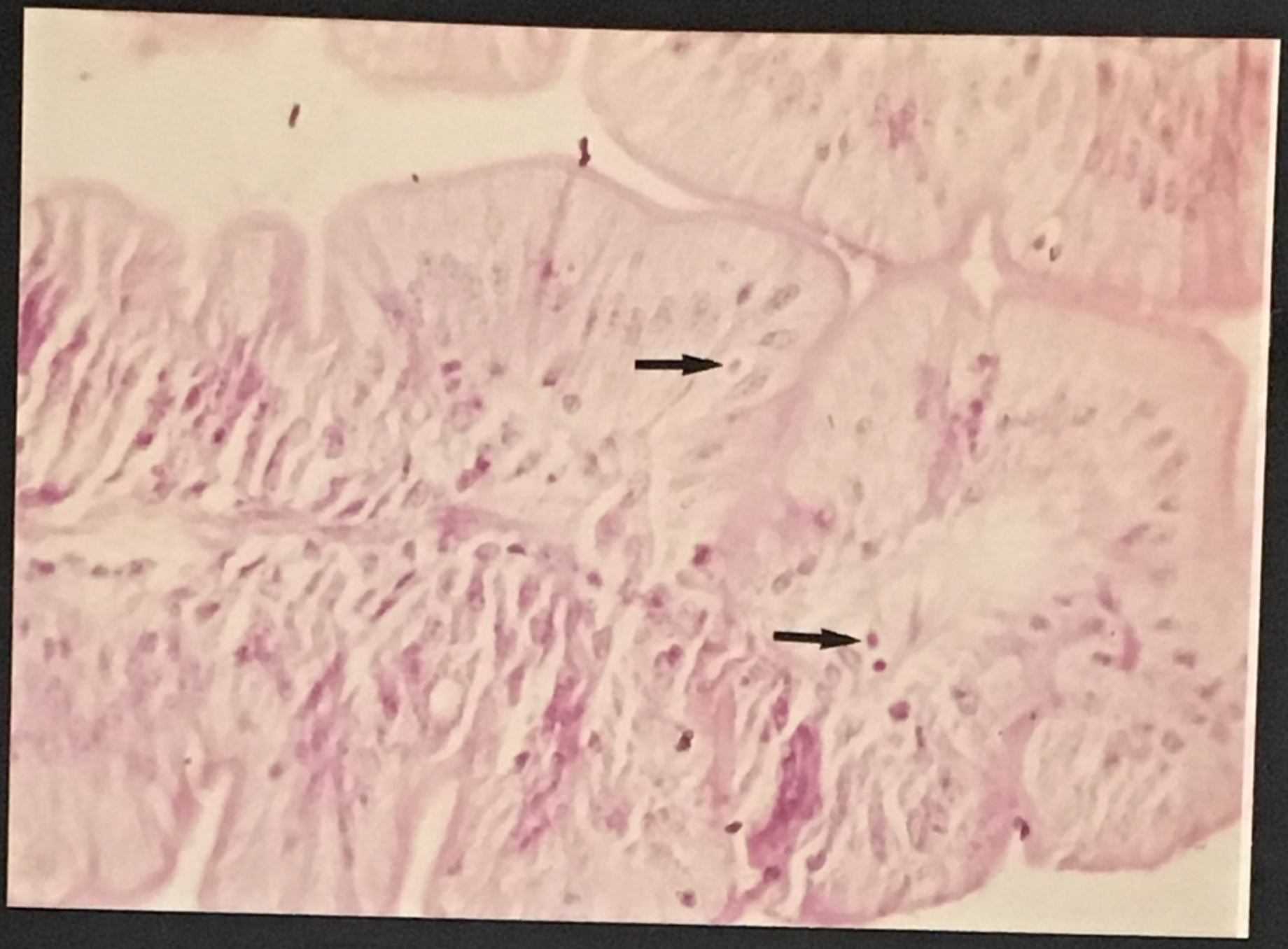

MV
CE
SZ
LEL

Figures 3-17 to 3-28. Electron micrographs of early events in the transport of *Eimeria necatrix*. Sporozoites from villous to crypt epithelial cells.

Abbreviations: host cell nucleus, HN; parasite nucleus, PN; crypt epithelial cells, CE; villous epithelial cell, VE; fibroblast, F; goblet cell, GC; intraepithelial lymphocyte, IEL; heterophil, H; microvilli, MV; parasitophorous vacuole, pv; lumen, L; lamina propria, LP; sporozoite, SZ; micronems, MN; rhoptries, RO; desmosome, DS.

Figure 3-17. Sporozoite in villous epithelial cell at 3 hours post infection. Loss of microvilli and some lytic activity can be seen close to sporozoite. An intraepithelial lymphocyte is seen in the vicinity of the infected villous epithelial cell. (x 7200)



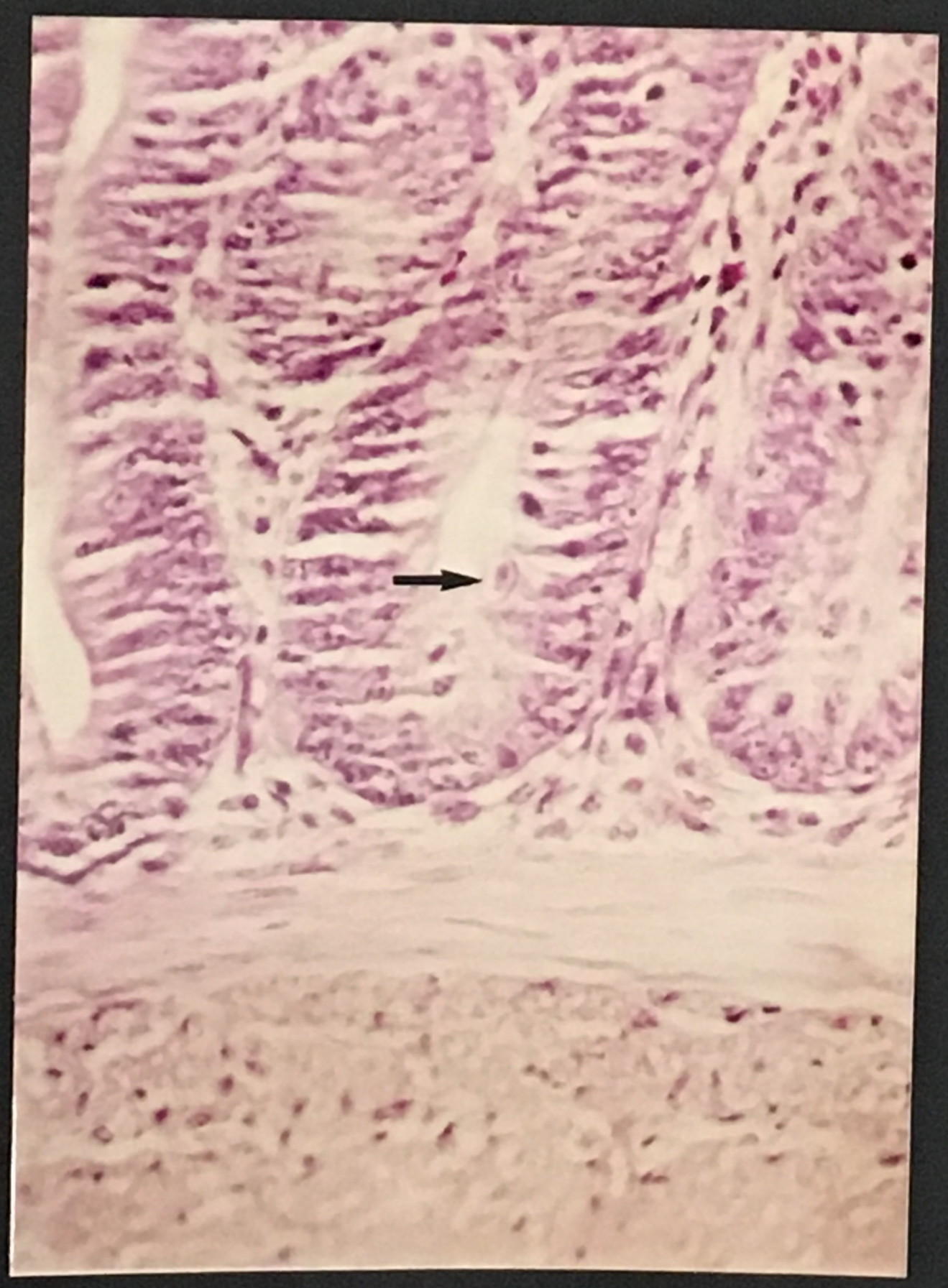


Figure 3-15. Intestinal section taken from a chicken at 6 hours post infection. Two sporozoites can be seen in villous epithelial cells (arrow). Special sporozoite stain. (x 400)

Figure 3-16. Intestinal section taken from a chicken at 18 hours post infection. One sporozoite can be seen near crypt lumen (arrow). Special sporozoite stain. (x 400)

TABLE 3-3. Mean Numbers of First and Second Generation Schizonts Found in Intestinal Sections of Chickens Infected with 1.4×10^5 Oocysts and Injected Intraperitoneally with Proteose Peptone at Different Times Post Infection.

Chicken Group	Mean numbers of 1st generation schizonts*	Mean numbers of 2nd generation schizonts*
Group 1 Injected at time of Infection	0.46 ± 0.70	0.48 ± 1.07
Group 2 Injected 24 hours post-infection	1.24 ± 1.88	13.9 ± 9.46
Group 3 Injected 48 hours post-infection	2.07 ± 1.76	19.77 ± 6.0
Group 4 Uninjected Controls	2.09 ± 1.48	14.89 ± 6.01

* Number of schizonts ± one standard deviation in 300 crypt villous units. Birds killed at 3 days post infection.

TABLE 3-2. Effect of Intraperitoneal Injection of Proteose Peptone on Daily Oocyst Production of Chickens Infected with 1×10^3 Oocysts

Days Post-infection	Chicken Group	Mean Oocyst Production	Standard Deviation	Level of Significance
6-7	G-1**	413,325	476,187	n.s.*
	G-2***	361,350	371,700	
7-8	G-1	433,125	273,805	n.s.
	G-2	2,128,500	3,178,234	
8-9	G-1	715,275	367,446	$p < 0.2$
	G-2	6,276,600	9,936,019	
9-10	G-1	2,994,750	1,974,919	n.s.
	G-2	2,962,575	3,740,500	
10-11	G-1	1,584,000	1,209,124	n.s.
	G-2	2,823,975	3,820,394	
11-12	G-1	1,148,400	1,047,811	n.s.
	G-2	3,648,150	4,761,975	
12-13	G-1	1,269,675	1,359,232	n.s.
	G-2	774,675	880,650	
13-14	G-1	507,375	634,804	n.s.
	G-2	982,575	1,214,472	
14-15	G-1	803,000	552,195	n.s.
	G-2	131,011	154,419	

* not significant.
** G1 received 10 ml of proteose peptone intraperitoneally at time of infection (n=4)
*** G2 infected only (n=4)

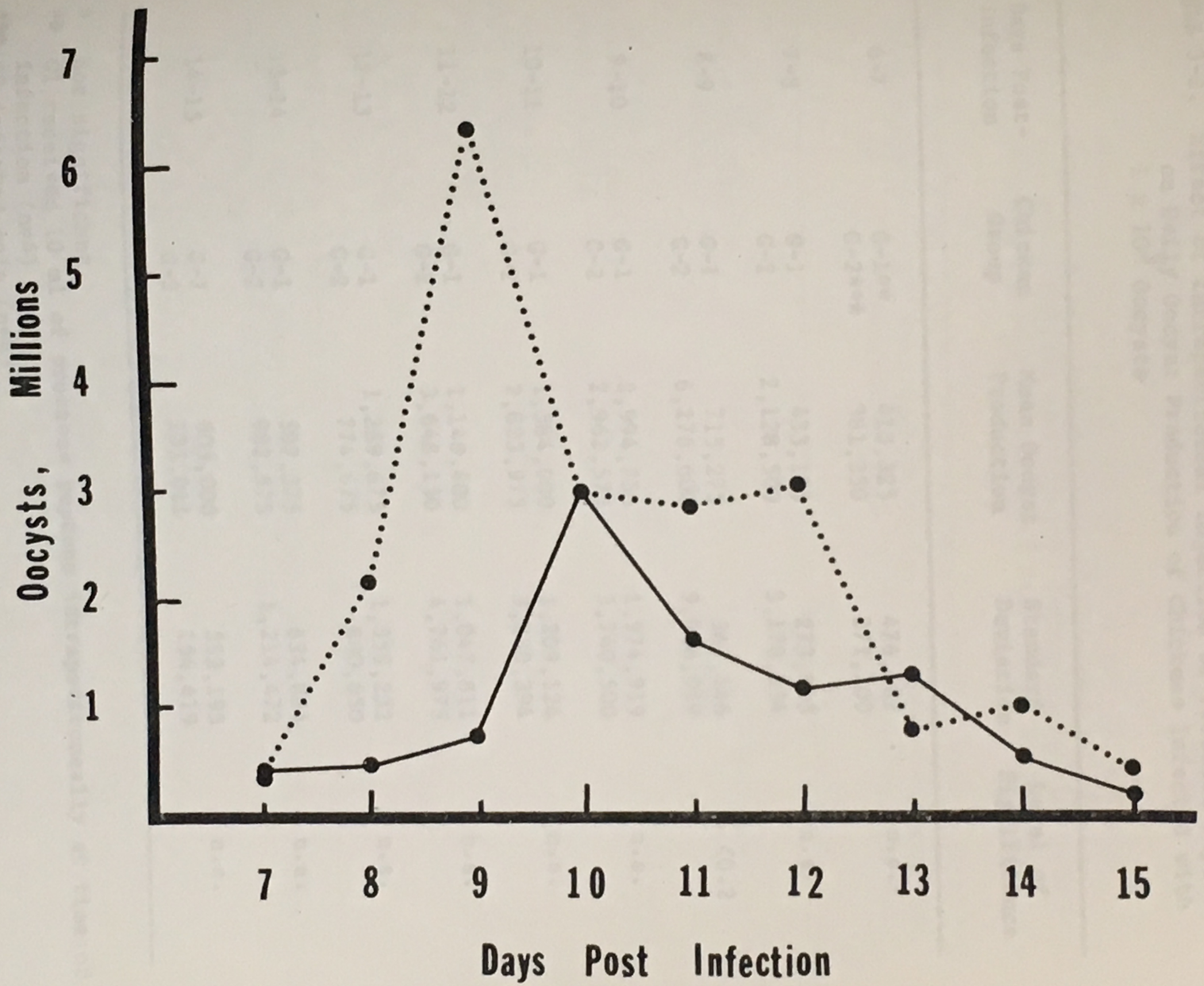

Oocysts, Millions
7
6
5
4
3
2
1
7
8
9
10
11
12
13
14
15
Days Post Infection

Figure 3-14. Mean daily oocyst output of chickens given an i.p. injection of proteose peptone compared to that of uninjected infected control chickens. Both groups infected with 1×10^3 oocysts per chicken.

Legend: (▬▬▬) Chickens injected with proteose peptone (n=4).

(•••••) Uninjected control chickens. (n=4).

For statistical analysis see Table 3-2.

TABLE 3-1. Effect of Intraperitoneal Injection of Proteose Peptone on Daily Oocyst Production of Chickens Infected with 3×10^4 Oocysts

Days Post Infection	Chicken Group	Mean Oocyst Production	Standard Deviation	Level of Significance
6-7	G-1**	4,400	7,621	p <0.1
	G-2***	1,278,200	1,150,490	
7-8	G-1	3,252,166	1,221,111	n.s.*
	G-2	4,758,600	3,929,094	
8-9	G-1	3,643,200	3,695,286	n.s.
	G-2	6,042,300	4,539,949	
9-10	G-1	3,867,600	3,035,384	n.s.
	G-2	2,244,000	1,875,320	
10-11	G-1	6,722,100	2,232,203	p <0.02
	G-2	2,049,300	2,587,444	
11-12	G-1	1,039,500	1,394,002	n.s.
	G-2	650,100	317,006	
12-13	G-1	524,700	689,384	n.s.
	G-2	482,900	480,377	

* not significant.
** G1 received 10 ml of proteose peptone intraperitoneally at time of infection (n=3)
*** G2 infected only (n=3)

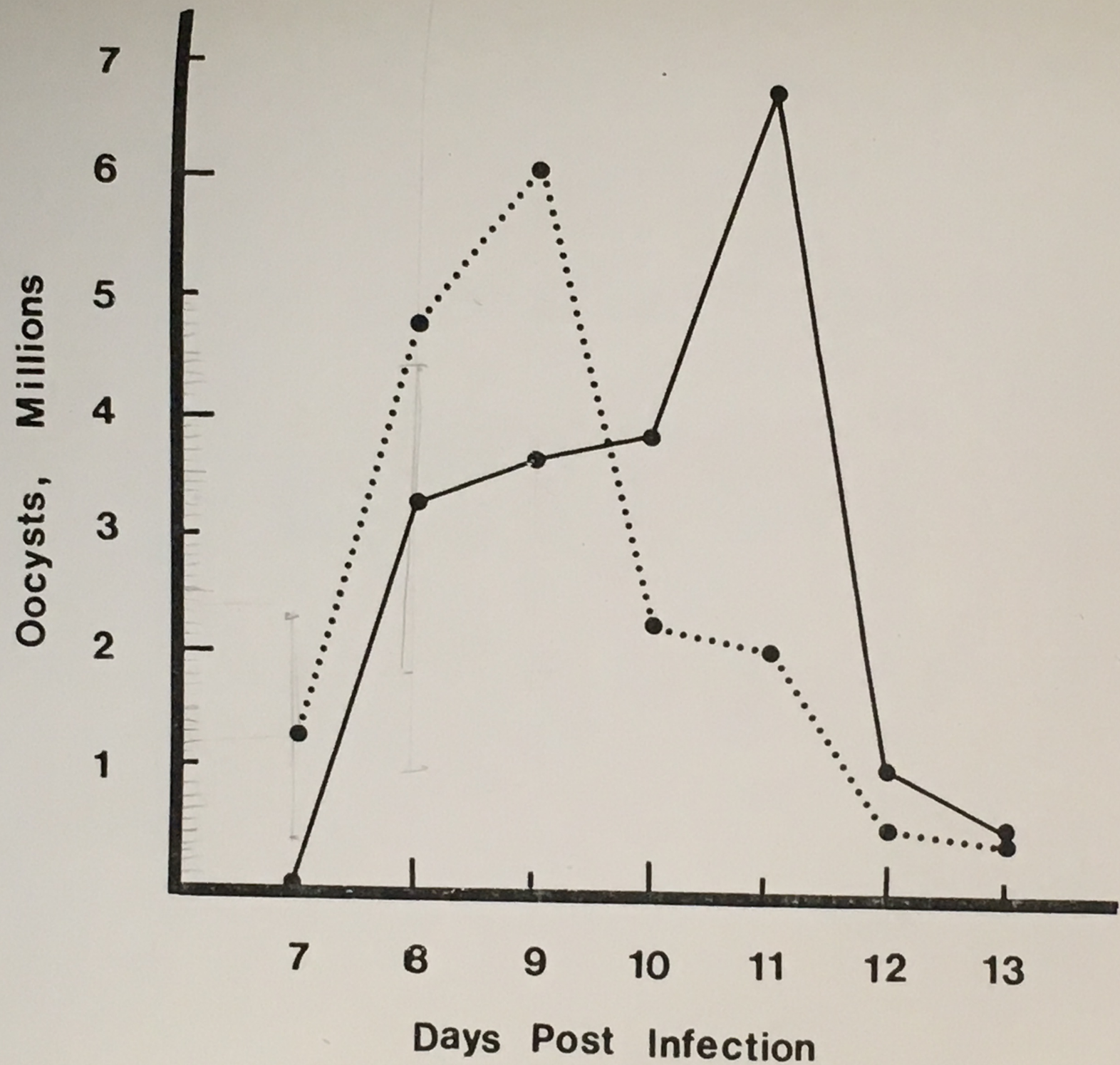

Oocysts, Millions
7
6
5
4
3
2
1
7
8
9
10
11
12
13
Days Post Infection

Figure 3-13. Mean daily oocyst output of chickens given an i.p. injection of proteose peptone compared to that of uninjected infected controls. Both groups were infected with 3×10^4 oocysts per chicken.

Legend: (▬▬▬) Chickens injected with proteose peptone (n=5).

(•••••) Uninjected control chickens. (n=5).

For statistical analysis see Table 3-1.

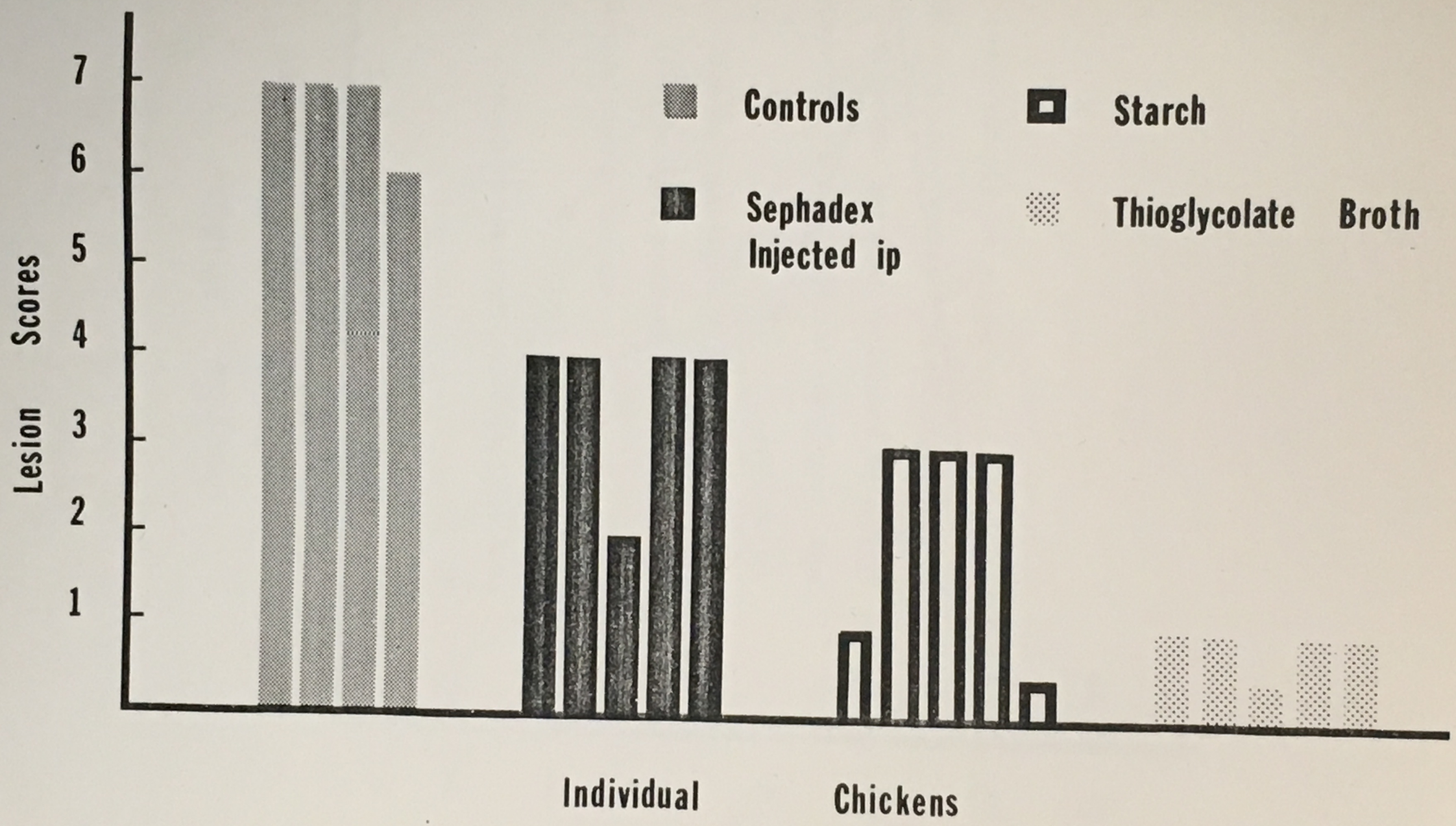

Lesion Scores
7
6
5
4
3
2
1
Controls
Starch
Sephadex Injected ip
Thioglycolate Broth
Individual
Chickens

Figure 3-12. Lesion scores of infected chickens injected intraperitoneally with starch, Sephadex or thioglycolate broth at 0, 24, 48, 72 and 96 hours post infection compared to those of uninjected infected controls. Chickens killed and lesions scored at 5 days post infection.