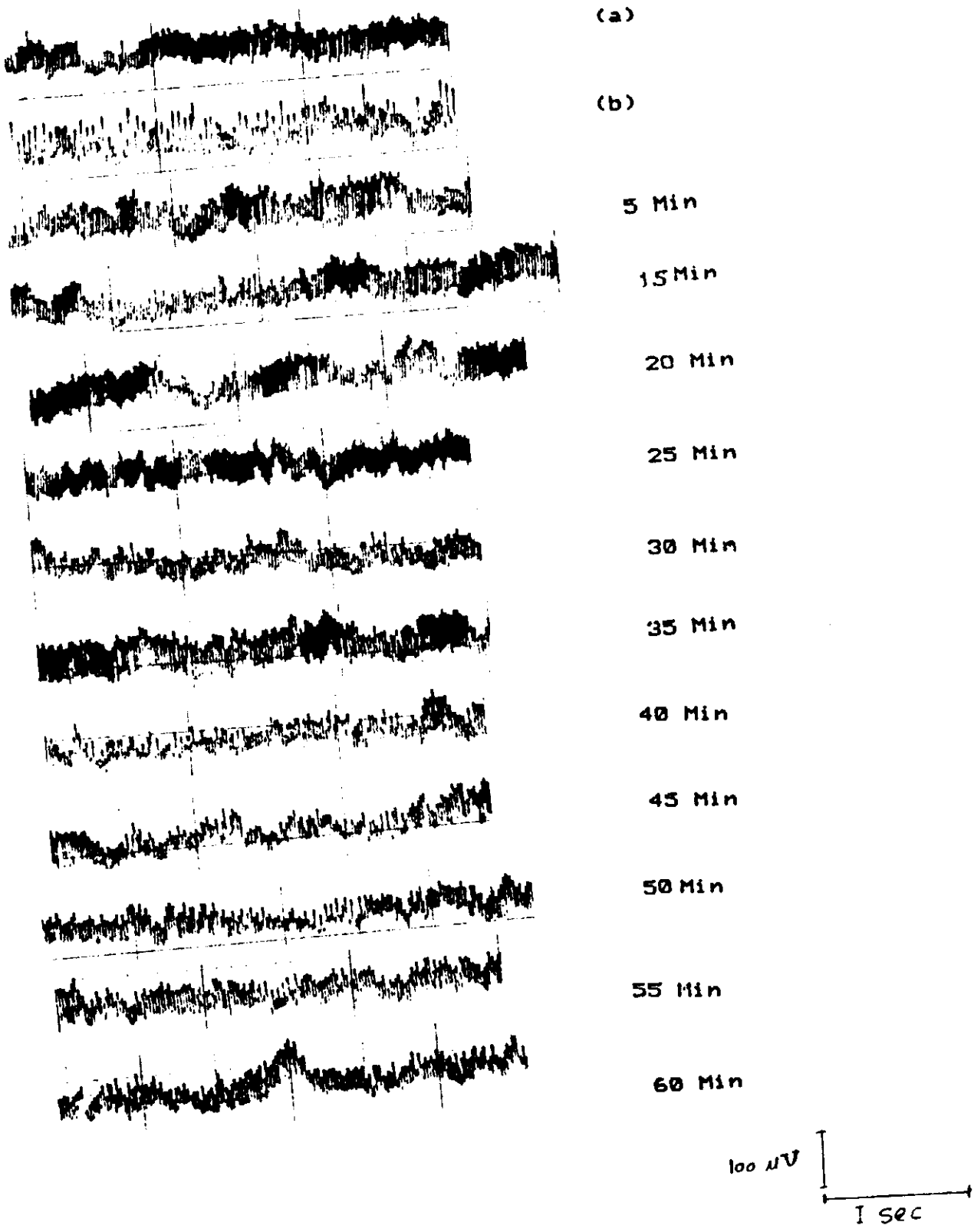

Fig. (49) : Typical records of the ETS activity of sensillum chaeticum on the tarsus (female fore leg) S. littoralis before (a), immediately after (b) and after 5,15,20,25,30,35,40,45,50,55,60 Min. of 200 ppm Permethrin respectively by using 1.5 M NaCl electrode.

Table (10c): Relation between the Permethrin concentration 200 ppm and frequency (F) and Amplitude (A) of the ETS activity and time before and after the application on sensillum chaeticum on the tarsus (Female Fore leg) *S. littoralis.* recorded by using 1.5 M NaCl electrode.

		After Permethrin application											
Time	Before	0.5 Min	5 Min	10 Min	15 Min	20 Min	25 Min	30 Min	35 Min	40 Min	45 Min	50 Min	55 Min	60 Min
F (C/sec)	14.9	19.9	16.5	-----	14.4	13.9	13.7	13.5	13.8	14.4	14.9	14.8	14.1	13.6
S.D.	± .875	± .737	± .816	-----	± .699	±.594	± .674	± .84	± .942	± .766	± .737	± .632	± .737	± .76
A (uV)	90	146	118	-----	100	96	88	75	102	92	86	84	82	78
S.D.	± .527	± .823	± 1.1	-----	± .816	± .788	± .699	± .843	± .737	± 1.07	± .82	± .788	± .737	± .737

Mean ± SD from 10 replicates.

Table (10d): Relation between the Permethrin concentration 300 ppm and frequency (F) and Amplitude (A) of the ETS activity and time before and after the application on sensillum chaeticum on the tarsus (Female Fore leg) *S. littoralis.* recorded by using 1.5 M NaCl electrode.

		After Permethrin application											
Time	Before	0.5 Min	5 Min	10 Min	15 Min	20 Min	25 Min	30 Min	35 Min	40 Min	45 Min	50 Min	55 Min	60 Min
F (C/sec)	14.7	18.2	16.4	15.3	15.1	13.7	13.3	13.6	13.9	14.7	13.8	13.6	13.4	13.2
S.D.	± .674	± .818	± .516	± .674	± .737	± .694	± .748	± .971	± .316	± .674	± .416	± .699	± .766	± .426
A (uV)	100	118	84	92	188	124	94	90	85	84	80	76	76	72
S.D.	±1.05	± .737	± .788	± .674	± .77	± 1.07	± .674	± 1.08	± .91	± .818	± 1.05	± .788	± .788	± .809

Mean ± SD from 10 replicates.

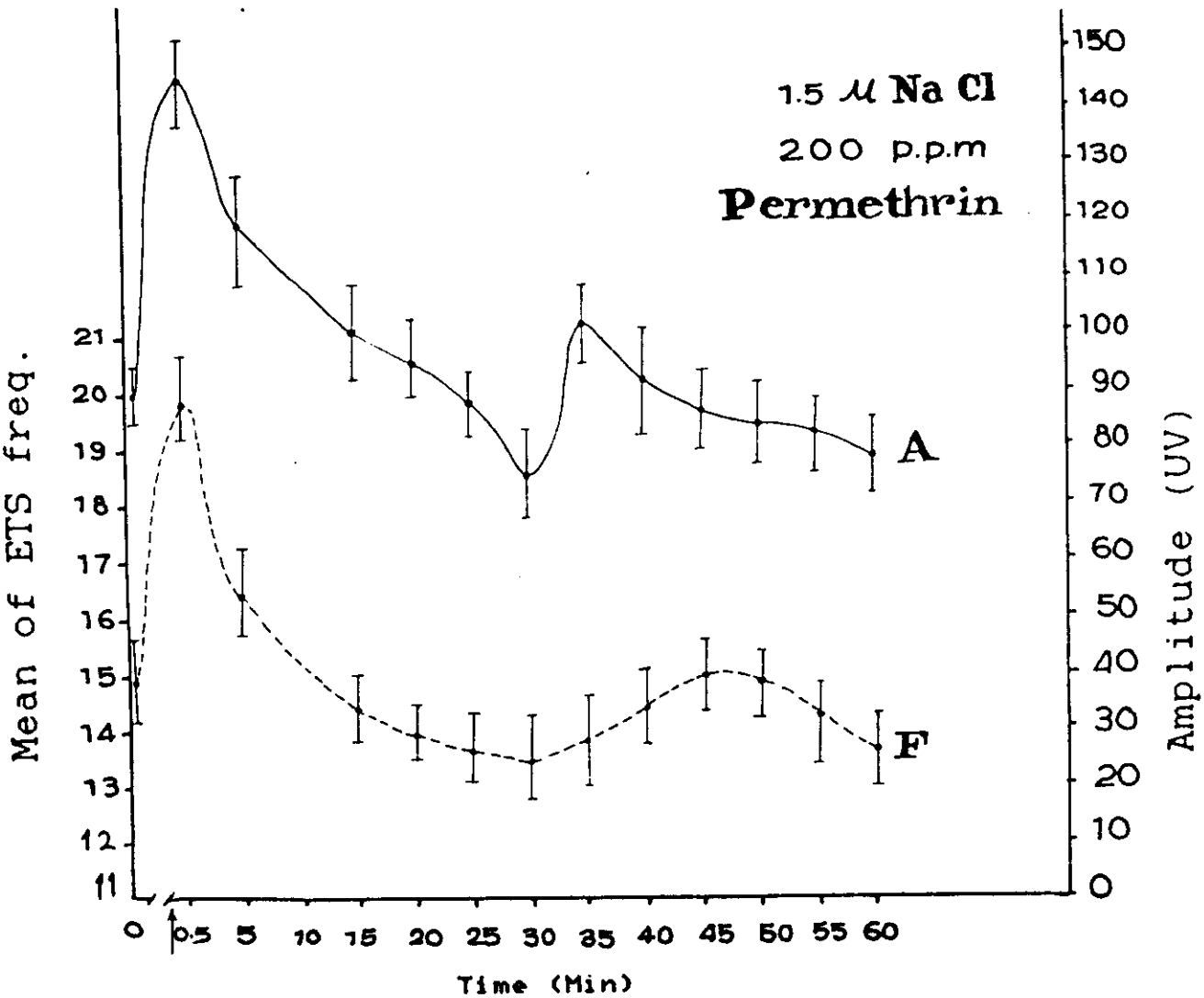

Fig. (50) : Relation between the frequency and amplitude of the ETS activity of sensillum chaeticum before and after 200 ppm Permethrin when uisng, 1.5 M NaCl electrode (the arrow indicates the insecticide of Permethrin application).

Permethrin application. The data of this changes of frequency and amplitude of the ETS activity with time before and after the Permethrin application is presented in table 10b and figure 48. The amplitude of the ETS activity increased immediately after the Permethrin application showing a very high value of amplitude after 15 Min of Permethrin application and it gradually decreases during 15-60 Min after application. The same finding was found when regarding the frequency changes the ETS activity with time recorded which showed a high value of frequency after 10 Min of Permethrin application and then it gradually decreases during 10-60 Min after the Permethrin application.

C- Effect of 200 ppm Permethrin:

The results are typically illustrated in figure 49. From this figure it is clear that, the changes of the ETS activity due to Permethrin application was pronounced. The data of these changes of frequency and amplitude of the ETS activity with time before and after the Permethrin application is presented in table 10c and figure 50. The amplitude of the ETS activity increased immediately after the Permethrin application and it showed a very high value of amplitude which gradually decreased during 5-60 Min after application. The same finding was found when regarding the frequency changes the ETS activity with time recorded but it showed a high value of frequency after Permethrin application, and then it gradually decreases during 5-60 Min after application.

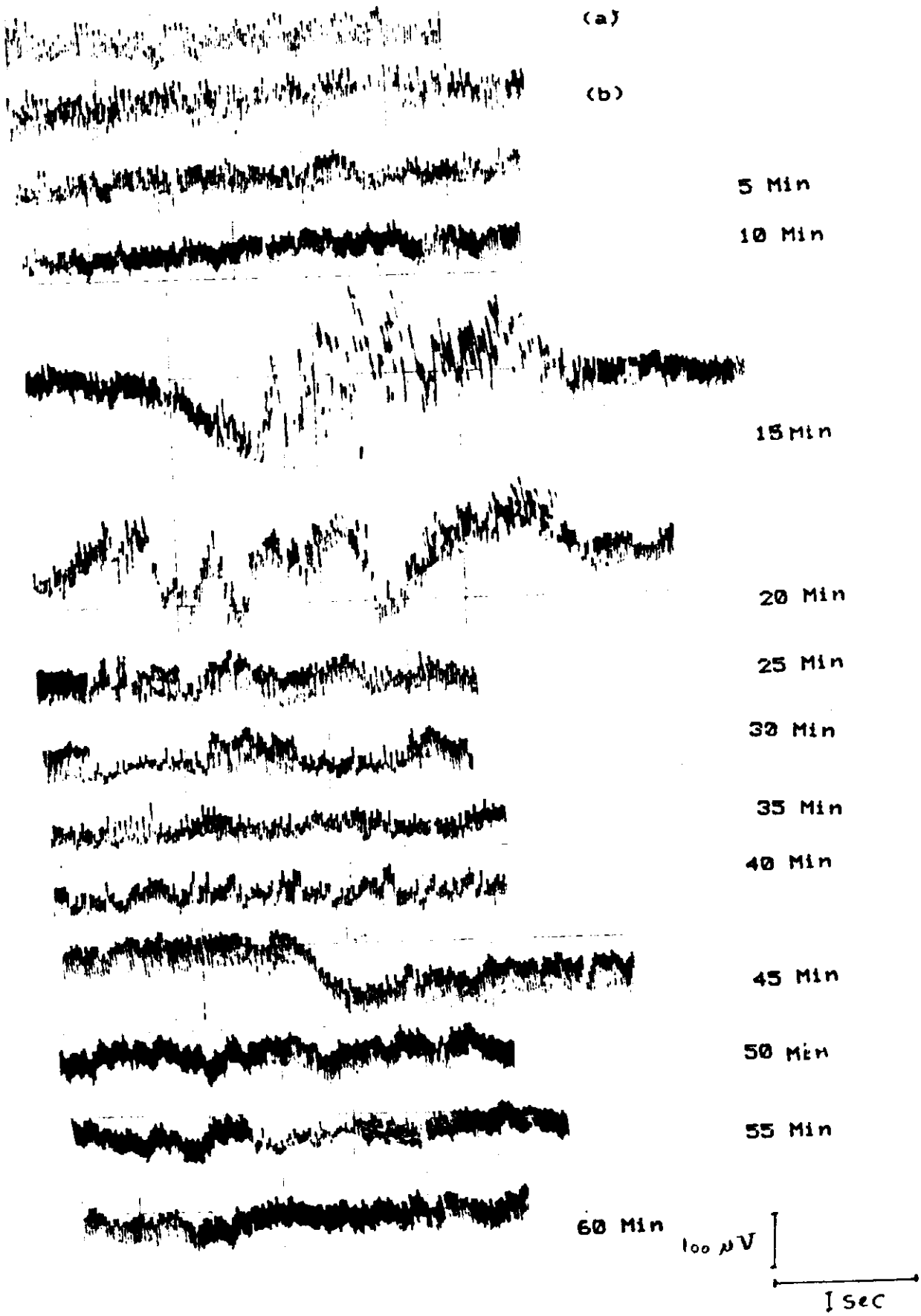

Fig. (51) : Typical records of the ETS activity of sensillum chaeticum on the tarsus (female fore leg) S. littoralis before (a), immediately after (b) and after 5,10,15,20,25,30,35,40,45,50,55,60 Min. of 300 ppm Permethrin respectively by using 1.5 M NaCl electrode.

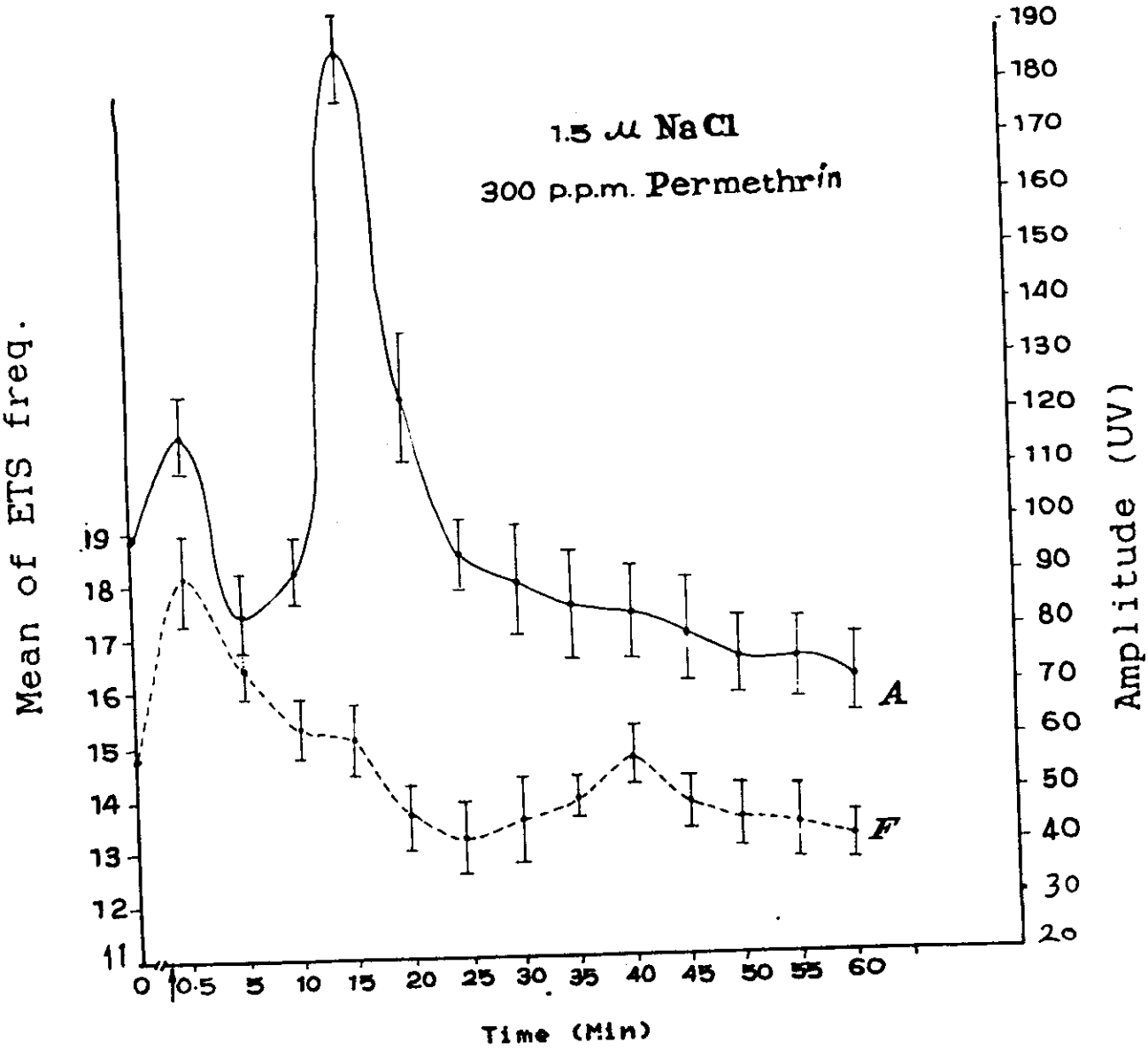

Fig. (52) : Relation between the frequency and amplitude of the ETS activity of sensillum chaeticum before and after 300 ppm Permethrin when uisng, 1.5 M NaCl electrode (the arrow indicates the insecticide of Permethrin application).

D- Effect of 300 ppm Permethrin :

The results are typically illustrated in figure 51. From this figure it is clear that, the changes of the ETS activity due to the Permethrin application was pronounced. The data of these changes of frequency and amplitude of the ETS activity with time before and after the Permethrin application is presented in figure 10d and figure 52. The amplitude of the ETS activity was increased immediately after the Permethrin application showing a very high value of amplitude after 20 Min and it gradually decreased during 20-60 Min after Permethrin application. The frequency of the ETS activity is increased immediately after the Permethrin application and then it graudally decreases during 5.60 Min after Permethrin application.

E- Comparison between the effect of different concentration of Permethrin:

The data of the changes of the frequency and amplitude of the ETS activity with time before and after the Permethrin application is presented in figure 53a,b. At all concentrations (20,100,200 and 300 ppm) the frequency and amplitude of the ETS activity increased immediately after the Permethrin application followed by a slight decrease as the time was increased. These results indicated that, the peak values of the frequencies were found at concentration of 100 and 200 ppm, while the minimum values of the frequencies were found at concentration of 300 ppm. The peak values of the

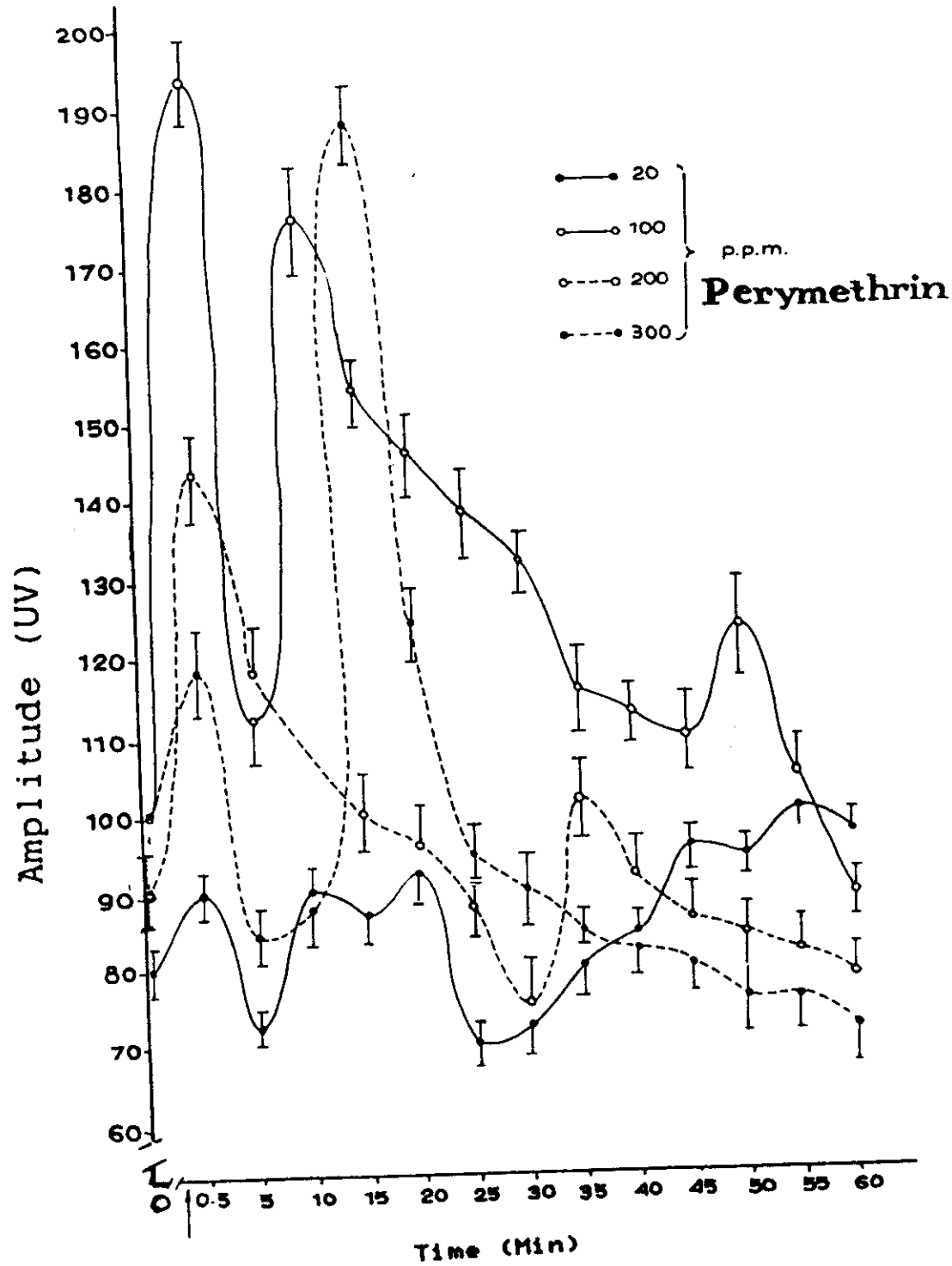

Fig.(53a) : Relation between the frequency of the ETS activity of sensilla chaeticum on the tarsus (female fore leg) S. littoralis before and after (20,100,200 and 300 ppm) Permethrin when using, 1.5 M NaCl electrode (the arrow indicates the insecticides of Permethrin application).

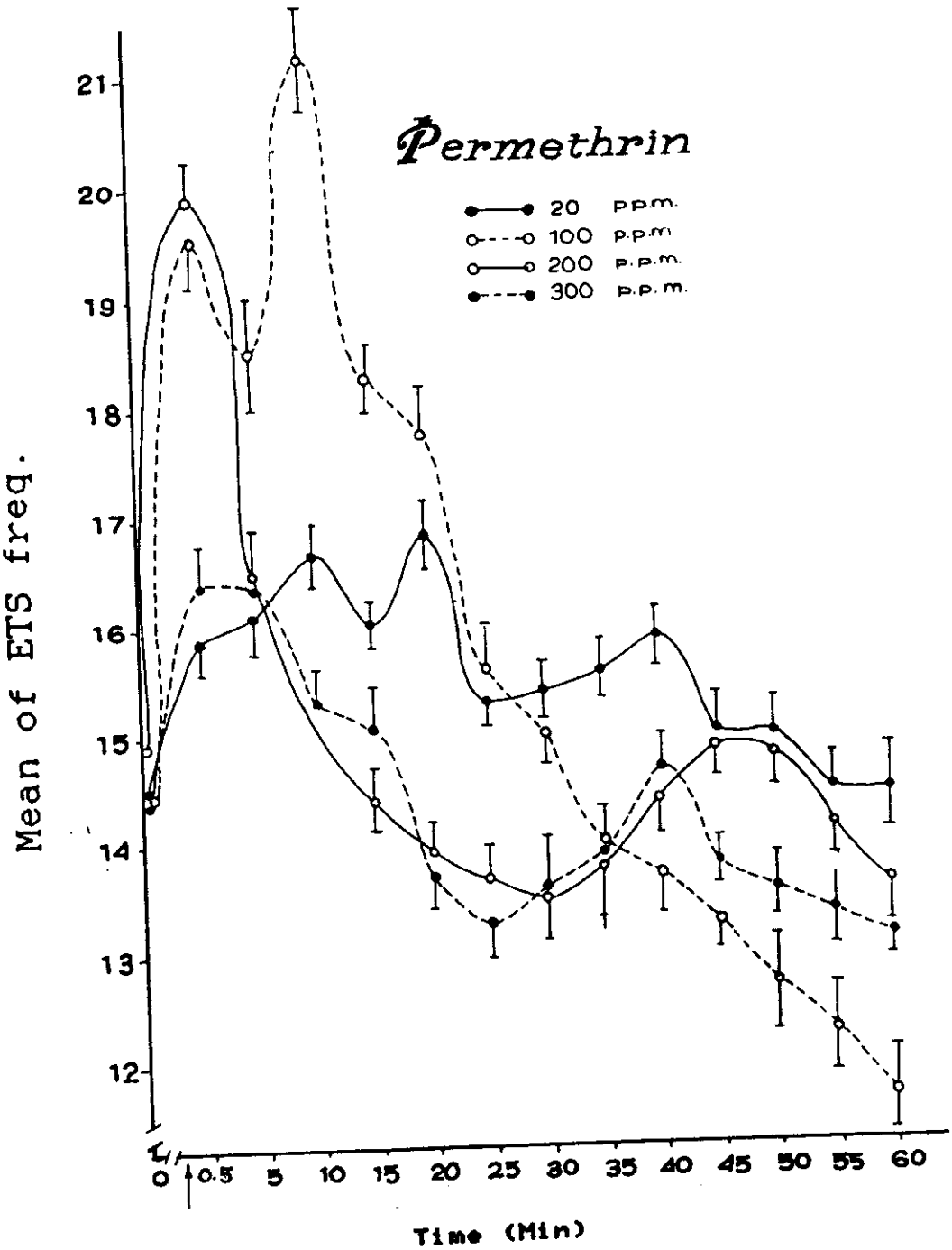

Fig.(53b) : Relation between the frequency of the ETS activity of sensilla chaeticum on the tarsus (female fore leg) S. littoralis before and after (20,100,200 and 300 ppm) Permethrin when using, 1.5 M NaCl electrode (the arrow indicates the insecticides of Permtherin application).