

NOTE ON A MIGRATION OF BUTTERFLIES
AT PAK JONG, E. SIAM.

BY E. J. GODFREY, B. SC., F. E. S.

Pak Jong is a small railway station on the Bangkok-Korat Railway (E. Siam), about 180 kilometres from Bangkok. In front of the railway station, which faces almost due west, is a clearing on which are stored wood billets used as fuel on the trains and also logs destined for transport to Bangkok. The billets and logs are obtained from the surrounding forest. Three cart roads converge on the clearing and there are many paths leading to the railway line on both sides of the station.

I was collecting in the cart roads (which I will call A, B and C), or in the side tracks leading into them, from September 19th-29th, 1927. During these ten days I encountered, in all three cart roads, one continuous stream of males and females of *Appias albina darada* Feld, males preponderating to an overwhelming extent.

The procession of butterflies appeared to start at about 9.30 a. m. and continued until dusk (about 6. p. m.). On two mornings there was mist and the butterflies did not appear until the sun came out, which was at about 11 o'clock. The converging streams from the cart roads passed, for the most part, over the clearing and the station in an easterly direction, but thousands of individuals were to be found, all through the day, on the moist ground around a large cement water trough, near the station, constructed for the use of the railway employees and their families. In some of the side paths in the forest large numbers of *darada* were to be found congregated on moist patches on the ground but, for the most part, whether in the main cart roads or in the side tracks, the butterflies were always steadily on the move.

I made the following observations of the number of individuals passing a given point, during a certain time, in the cart roads A and B,

Date	Road	No. of individuals which passed			Total no. in 15 min.
		11.45 a.m.- 11.50 a.m.	11.55 a.m.- 12.00 noon	12.5 p.m.- 12.10 p.m.	
Sept. 22nd	A	150	260	350	760
" 23rd	A	200	250	300	750
" 24th	B	300	110	220	630
" 25th	B	175	260	255	690
					2,830

Assuming that the butterflies were passing in the cart road C in about equal numbers, and taking an average of 700 individuals per 15 minutes for each road, this means that 8,400 were converging on the clearing every hour. Further, assuming that the flights were more or less continuous from 9.30 a.m. to 5.50 p.m., we arrive at a total of 67,200 individuals per day for this single clearing alone.

The computation of the whole migration does not end here, however. At the station immediately before Pak Jong, a place called Pang Soke (165 kilometres from Bangkok) where the train stops for a few minutes, the same moving streams of *darada* were to be seen and these occurred at frequent intervals all the way to Pak Jong, a distance of 15 kilometres. Further, I ascertained from a Dyak mammal-, and bird-collector, employed by Dr. Hugh Smith of Bangkok and stationed at the time at Pak Jong, that butterflies of the same species were passing in continuous streams at Chantuk, a village with a station, 10 kilometres beyond Pak Jong.

I was staying at Pak Jong station and, as shunting operations commenced at about daybreak, I was always out by about 6.30 a.m. At this hour I constantly came across isolated males and females of *darada* resting on leaves, utterly exhausted and incapable of flight, but there were no signs of the main body of the migrating hordes.

The passing streams of *darada* in the cart roads and side tracks were at times a source of annoyance to me, as they often disturbed resting butterflies of other species.