

BEETLE DRIFT ON LAKE MICHIGAN.

BY JAMES G. NEEDHAM.

The ill wind that blows insects into a lake may blow the entomologist some good if he be on hand to collect them when they are cast upon the beach. During recent years I have gathered much material for class use from the drift line upon the beach at Lake Forest, with great economy of time and labour. After every on-shore breeze following sunshiny summer weather some insects are cast up by the waves, and occasionally there is a great accumulation of them. Twice I have observed accumulations of them quite out of the ordinary; the first time, in August, 1899, when the drift was predominantly crickets of a single species (*Nemobius fasciatus*)*, and a second time in June, 1904, when it was predominantly May beetles of a single species (*Lachnosterna fusca*). It is the purpose of this paper to record some observations on this occurrence.

It was discovered on the afternoon of June 11th. The weather had been bright and calm for several days, and the favoring wind was gently blowing from the north-east, and bringing the insects ashore, for the most part alive and in good condition. Two things seemed very remarkable about this drift: first its smell, due to the presence in large numbers of the ground beetle, *Calosoma frigidum*, incited by their tossing upon shore to emit their pungent, but, when sufficiently diluted, not wholly unpleasant odour; and second, the preponderance of beetles. It was nearly all beetles, and nearly all the beetles were a single species. The accumulation was hardly sufficient to be called a windrow—rather, an incomplete layer averaging a meter wide, spread out in a long sinuous line at the farthest reach of the waves—a ribbon of brown trailed along the lighter coloured sand. There was little cinder flotsam or other trash in it, it was nearly pure insect material—brown, because of the millions of May beetles, hardly one per cent. being anything else.

I gathered an abundant supply of *Lachnosterna* and *Calosoma*, made a few notes and went home. Early the next morning I went again to the shore, a mile farther northward. There, to my great surprise, I found the beach bare. Had I missed my opportunity by putting off till to-morrow a more careful examination? I walked southward, and soon came upon the smell of it, and then, the drift itself. The wind was still north-east, but insects had apparently stopped coming in. Many of the May beetles,

*An account of this I published in the Occasional Memoirs of the Chicago Entom. Soc., Vol. I., No. 1.