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Lepidoptera

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Abstract

At least 4.3 million Caper Whites *Belenois aurota* were observed at sea in the Atlantic Ocean offshore of Senegal and The Gambia between 14 and 18 October 2003. They were moving to the southwest, carried by the northeasterly wind.

Observation

The tug *Wolraad Woltemade* was one of three tugs which towed the Floating Production Storage and Offloading Vessel *Bongo* from Newcastle, UK, to its station, 120 km offshore of the Niger Delta, in the Gulf of Guinea, Nigeria, between 19 October and 26 November 2003. This report relates to sightings of butterflies on two days during this period, on which butterflies were observed over the Atlantic Ocean offshore of West Africa.

On 14 November 2003, Caper Whites *Belenois aurota* (Figure 1) were observed approaching the tug all day. The position of the tug at midday was 14° 20'N, 18° 26'W, c. 112 km west of Dakar, Senegal. They formed a constantly moving mass, carried southwestward on a gentle 5 knot northeasterly wind. By extrapolation, they would have left the continent of Africa from northwest Senegal, the northern edge of the Sahel, immediately south of the Sahara Desert.

Similar observations were made on 18 November 2003. The tug's position at midday was 12° 45'N, 18° 23'W, c. 160 km west of The Gambia. The wind was 20 knots from the northeast, and the likely origin of these butterflies was The Gambia and Senegal. The butterflies were so numerous that they blocked the air-conditioning intake filters (Figure 2). They were present throughout the tug, from the bottom decks of the engine room, sucked in by the vent fans, to the cabins of the crew (Figure 3).

The following estimates were made on 18 November. The butterflies became visible at a distance of 200 m, which was the gap between the *Wolraad Woltemade* and the adjacent tug. They occurred from immediately above sea level to as high as could be seen above the tugs. An approximate estimate of the number that were visible at any one time was 500 butterflies. The time taken for a butterfly to cover the distance between the adjacent tug and the bows of the *Wolraad Woltemade* was 20 seconds. Assuming that 500 butterflies passed the tug every 20 seconds, yields an estimate of 500×180 = 90,000 per hour. Given that they were observed for approximately 48 hours in total, we estimate that 4.3 million butterflies passed the tug. This would represent a tiny fraction of the total number that left the mainland.

Figure 1: Caper White *Belenois aurota*, female, southwest of Dakar, Senegal, in mid-November 2003.

Figure 2: Caper Whites *Belenois aurota* blocking the vents of the air-conditioning of the tug *Wolraad Woltemade* west of Dakar, Senegal, in mid-November 2003.

Discussion

There are no islands in the Atlantic Ocean southwest of Senegal and The Gambia where these butterflies could have reached land. The Cape Verde Islands are to the east, 570 km from the coast of Africa, and Ascension Island is to the south, 2200 km from Africa; neither island has records of Caper Whites (Robinson & Kirke 1990, Tennent & Russell 2015, 2019). Both islands are within the limits of butterfly movements over the oceans. Robinson & Kirke (1990) considered that at least some of the Lepidoptera on Ascension Island had colonized the island as a result of transoceanic immigration, and had not been introduced. Fox (1978) reported on numerous movements across the Tasman Sea between Australia and New Zealand, a distance of c. 2000 km and considered that some arrivals to New Zealand had originated in Queensland, a distance of c. 2640 km. Tomlinson (1973) estimated that weather conditions suitable for butterfly movement across the Tasman Sea occurred on average 21 times per year.

There seems to be no reviews of transoceanic movements of butterflies. The paper by Fox (1978) would certainly be included in such a review. Google Scholar reported that this paper had been cited 112 times by March 2023, including eight times since 2020. None of the citations of this influential paper about transoceanic migration of Lepidoptera is to a review. This appears to be a gap in knowledge which represents an opportunity for a researcher at the interface between lepidopterology and meteorology.

Figure 3: Caper Whites *Belenois aurota* in the cabins of the crew of the tug *Wolraad Woltemade* southwest of Dakar, Senegal, in mid-November 2003.

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References

Fox KJ 1978. The transoceanic migration of lepidoptera to New Zealand — A history and a hypothesis on colonization. New Zealand Entomologist 6: 368–380.

Robinson GS, Kirke CKstG 1990, Lepidoptera of Ascension Island — A review. Journal of Natural History 24: 119–135.

Tennent WJ, Russell PJC 2015. Butterflies of the Cape Verde Islands (Insecta, Lepidoptera). Zoologica Caboverdiana 5: 64–104.

Tennent WJ, Russell PJC 2019. Additional notes on butterflies of the Cape Verde Islands. Metamorphosis: 3–13.

Tomlinson AI 1973: Meteorological aspects of trans-Tasman insect dispersal. New Zealand Entomologist 5: 253–268.

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