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## Monarch butterflies coinciding with American passerines in Britain and Ireland in 1968

*J. F. Burton and R. A. French*

Ornithologists will remember autumn 1968 as a time when unprecedented numbers of vagrant American birds reached Britain and Ireland, including eleven species of passerines and, among them, the first records of Blackpoll Warblers *Dendroica striata* (see pages 485-487 in this issue). Entomologists, on the other hand, will associate it with an unparalleled immigration of the American butterflies known as Monarchs or Milkweeds *Danaus plexippus*: more than 60 were seen or captured, the largest annual total since the first was found in Britain in 1876. The previous highest figure was 40 in 1933, but the grand total between 1876 and 1967 was only 215, including just 15 in the ten years 1958-67.

In 1968 the first Monarch was found dead at Longham, Dorset, on 1st September; and on 24th September another was sighted over the dunes at Studland in the same county. Apparently, however, the butterflies did not reach British shores in any numbers until 3rd October, on which date they were reported in the Isles of Scilly, south Devon and south Dorset (all, incidentally, on islands or promontories projecting into the Atlantic and the English Channel). About 6th October as many as ten were seen on Michaelmas daisies in a garden at Dorchester, Dorset, and at least ten not far away in another garden at Hazelbury Bryan in the same county. Most, however, occurred singly. Although the majority stayed near the south coast, others drifted further inland and, by the middle of the month, were reported from north Somerset, Gloucestershire, Worcestershire, Lancashire, Sussex, Essex and the London area. In Wales one was captured near Swansea on 12th October. In Ireland one was caught in the Heligoland trap (and later released) on Cape Clear Island, Co. Cork, on 8th October and another was seen there on 31st October, while there was also one at Ballycotton, Co. Cork, on 16th October.

Monarchs are widely distributed in the United States and southern Canada in summer and small colonies have also been established in the Azores and the Canary Islands. (They cannot breed anywhere in Britain or Europe, however, as the milkweed plants *Asclepias* they feed on do not exist here.) In North America in autumn they migrate southwards in small groups, sometimes in swarms, along the Pacific coast and also through the eastern half of that continent until they reach their winter quarters in southern California, Florida and Mexico, where they roost in trees. In early spring they awake and migrate

north again to their breeding areas. They are one of the best-known migrant butterflies in the world and their remarkable journeys have been studied by Professor F. A. Urquhart of Toronto University, who, with his helpers, has marked thousands with identification tags. Many of them have been found more than 1,000 miles away from the point of release, but so far none has been recovered in Britain or Ireland. We hope that ornithologists will look out for them: the recovery of one here would at least prove that our Monarchs come from America.

At the present time the question whether these insects can and do cross the Atlantic unaided is a matter of dispute among entomologists. Professor Urquhart himself is inclined to believe in the mechanical transference of Monarchs across the Atlantic by human agency, e.g. ships, rather than by direct flights (1964, *Proc. Entomol. Soc. Ont.*, 9: 23-33). On the other hand, we consider that, whilst some may be assisted across by ships, the majority can and do fly unaided over the Atlantic, just as some small American passerines are thought to do. Monarchs are large, powerful butterflies which generally cruise at around 11 m.p.h. when migrating over land and are capable of reaching speeds of up to 30 m.p.h. for at least short distances without wind assistance. With westerly gales blowing behind them, it would be quite possible in our opinion for them to cross the Atlantic in two to four days. The coincidence of the arrivals here in early October 1968 of these butterflies and many vagrant American birds during prolonged westerly gales is, we think, significant.

With G. W. Hurst of the Meteorological Office, we are studying the relevant weather situations for eventual publication in a paper on the movements of Monarchs to Britain and Ireland since 1876, but clearly the subject cannot be considered in isolation from the studies already made of birds crossing the Atlantic. If, as we believe, the Monarchs in 1968 were wind-borne from North America, then only one suitable opportunity occurred for a transatlantic passage between mid-September and 7th October. This would have involved a three-day crossing, arriving in Britain and Ireland about midnight on 28th/29th September. The journey would have been carried out in warm sector conditions, in a strong, cloudy, non-turbulent airflow with winds of 30-35 knots and little change from the surface to several hundred feet. This wind regime would provide an explanation for all the records after 29th September, but the two single butterflies seen on 1st and 24th September must either have had a different origin, possibly the Azores or the Canary Islands, or a different method of transportation.

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