

A NEW ASPECT ON THE FAUNAL CONNECTIONS BETWEEN EUROPE AND THE PACIFIC NORTHWEST

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Lindroth (1957) in an excellent book entitled "The Faunal Connections between Europe and North America" has dealt with the animals, especially the insects, common to the two continents. He shows that the introduction of foreign plants and lower animals in Newfoundland has been brought about, to a large extent, by their unintentional introduction in ballast. Hence there is no need to postulate land bridges, etc. This ballast was carried over in sailing vessels of the North Atlantic trade and dumped on or just off-shore from the areas in which these vessels loaded cargo for shipment to Europe. It was found that much of the ballast transported to Newfoundland originated from southwestern England.

On pp. 170-172, instances of similar ballast dumping in the Pacific Northwest are cited: one for Puget Sound and one for Portland, Oregon. Dr. J. R. Adams of the University of British Columbia tells me that Departure Bay, just north of Nanaimo on Vancouver Island, was a centre for ballast dumping: coal mined there from 1852 on was shipped to all parts of the world. Figs. 7 and 8 in Lindroth's work show the distribution of introduced species of *Carabus* in North America, and shows the area around Vancouver to be one of the primary centres. It is suggested that the ballast dumping in this area may have played a considerable part in introducing European forms to the area. Most

of the European insects introduced into the Pacific Northwest have been late arrivals compared with eastern Canada; this is correlated with the fact that the Panama Canal was not opened until 1914. We do not know, at present, the place of origin of the ballast dumped in the Pacific Northwest. Perhaps much of it also came from Southwestern England.

Varley (1958) in a review of Lindroth's book, when discussing the groups of animals considered therein, states that "the vast majority of animal groups are excluded because taxonomic study is insufficiently advanced, and careful collation of the described species on the two sides of the Atlantic has yet to be undertaken." The present author has collected Heteroptera in Great Britain for the past 11 years and is now undertaking such a collation in this group. Whilst collecting with Dr. W. J. Le Quesne, in southwestern England in 1956, the author took the opportunity to collect in many of the areas, mentioned by Lindroth as those from which ballast was taken.

It is of interest to note that a number of the species of Hemiptera, recorded as new to British Columbia since 1914 by Mr. W. Downes are of European origin. The author hopes to be able to collect specimens and trace records of ballast dumping for the Departure Bay area. Any assistance in this field would be greatly appreciated.

References

- Lindroth, C. H. 1957. *The Faunal Connections between Europe and North America*. New York.
 Varley, G. C. 1958. Review: Lindroth, C. H. *The Faunal Connections between Europe and North America*. Ent. mon. Mag. **94**: iii.