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On the Origin of Flightlessness in Ephemeroptera

The Ephemeroptera fauna of the Auckland Islands of New Zealand was discussed by Peters (1971) who described the only known species of mayfly from those islands, *Atalophlebioides aucklandensis*. He also reported observations by the collectors, J. L. Gressitt and K. A. J. Wise, on the swarming flight of these mayflies. McDowall (1978) subsequently reported the occurrence of flightless Ephemeroptera from the Auckland Islands, a report also quoted by Nelson and Platnick (1978).

As the only mayflies previously known from the Auckland Islands have definitely been observed to fly, the question naturally arises as to the origin of the flightless Ephemeroptera cited. One hypothesis manifests itself immediately. Flightless Plecoptera are known from the Auckland Islands (cf. Illies, 1974), and the flightless Ephemeroptera reported by McDowall have apparently arisen from them by saltatorial macroevolution caused by the infamous mutagen, the *lapsus calami*. A personal communication from Dr.

McDowall (1978) confirms this hypothesis.

Although it does not affect the biogeographic arguments of either McDowall or Nelson and Platnick, it should be pointed out that, as yet, there are still no known flightless Ephemeroptera, either in the Auckland Islands, or anywhere else in the World.

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