

cently-flown young might cluster in response to a temperature reduction not appreciated in casual observation by man. Very young nestlings are practically poikilothermous ('cold-blooded') (Baldwin and Kendeigh, 1932). When the parent leaves the nest they avoid heat loss by clustering together. With the development of plumage, homoiothermy is established. It is not unlikely that juvenility (and possibly the degree of sub-cutaneous fat deposition) may be primarily responsible for the operation of the clustering mechanism in months of high temperature.

CONCLUSIONS

1. Clustering in wood-swallows and other birds is a thermo-regulatory device. By collectively reducing their exposed surface and increasing mass the clustering birds conserve heat.

2. The habit is commonest during the non-breeding season because this spans the colder months of the year.

3. It is not known why *Artamus cyanopterus* reputedly clusters in relatively mild weather. Precise observations, including air-temperature records, degree of maturation and sub-cutaneous fat deposition, are required.

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High-flying Harrier.—Mr. C. D. Blomfield, a pilot with James Aviation Ltd., of Rotorua, New Zealand, relates the following experience. On Sunday, September 23, 1956, when flying over Atiamuri, 25 miles south-west of Rotorua, he encountered a Harrier (*Circus approximans*) flying on a parallel course. A glance at the altimeter showed 4,000 feet. Atiamuri is approximately 1,000 feet above sea-level, which gives the altitude above earth as 3,000 feet. On turning the plane in the direction of the bird to obtain a closer view, it immediately volplaned on a zig-zag course earthwards. It would be interesting to learn if any members of the Australian Falconidae have been recorded by aviators at heights of 3,000 feet or more above terra firma.—MAXWELL S. BLACK, Rotorua, N.Z., 25/9/56.