The results of the feeding tests are summarized in Table 2. There was no mortality in ricefield and Polynesian rats offered bait for one night, but acceptance was poor at the higher concentrations. Although Norway rats were offered treated tablets for two to four nights, mortality occurred only the first night; acceptance was also poor at the higher concentrations, but they ate enough 2% bait to cause 80% mortality. After the first night, consumption of treated tablets was highly variable; some animals completely rejected the bait, others ate less than, as much as, or more than the first night.

Public health and agricultural workers have been searching for many years for chemicals for use in Norway rat control programmes that are relatively nontoxic to man, domestic animals and nontarget wildlife. 'Warfarin' has been in the forefront as a rat toxicant, but after the detection of 'Warfarin'-resistant Norway rats in Great Britain⁶, and recently in the United States⁷, the search for new chemicals to replace it has become more important. Norbormide is selectively toxic to rats⁸ but causes "bait shyness". Our primary target species are ricefield and Polynesian rats, but the preliminary data reported here indicate that UK 786 may be a useful rodenticide for Norway rats.

We thank Pfizer Ltd for providing UK 786. This work was conducted in part with funds provided by the US Agency for International Development.

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Received October 13, 1972.

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Migration of Birds over the South Coast of China recorded by Radar

THE opportunity to record bird movements with radar has undoubtedly existed in the Far East, but we know of no published studies of bird migration that utilized radar in Indonesia, Malaysia, Thailand, Vietnam, the Philippine Islands, Taiwan, American Micronesia or even Japan. We report here a radar study of bird migration over Hong Kong (which lies between 22° 9' and 22° 37' N and 113° 52' and 114° 30' E) to stimulate the use of radar to study bird migrations across or between some of the countries mentioned, and also additional studies on the mainland of China.

During April and May 1972, and again from September to December 1972, we used the 10 cm 650 kW Plessey 43S weather radar of the Royal Observatory, Hong Kong, to detect and study the northward spring and southward autumn migrations of birds over the south coast of China, and particularly over areas immediately to the west, south and east of Hong Kong.

Although there were some breaks in the record, observations were made for nearly four months during 1972.

The findings of detailed ornithological analysis of the 16 mm time-lapse films will be published elsewhere later, but some of the results from the period of the spring migration are mentioned here to indicate the interest of extending these studies to other sites in the region.

North-eastward movements of birds were recorded from mid-April to the end of May in the vicinity of Hong Kong (and corresponding south-westward movements were recorded in September and October). While partly overland and partly offshore along the coast, the majority of the bird echoes involved in this spring movement were almost certainly crossing the South China coast after an over-sea flight from at least as far away as the Chinese island of Hainan (250 miles) and perhaps from as far away as Vietnam. The character and behaviour of the echoes indicated that this movement was mainly of charadriiform species; indeed more than 20 species of shorebirds (waders) were observed in Hong Kong during the period from April 9 to May 7, 1972—the three most abundant species being Redshank, *Tringa totanus*, Eastern Little Stint, *Calidris ruficollis*, and Greater Sand Plover, *Charadrius leschenaultii*.

A most prominent ascent of bird echoes was detected after sunset on at least seven evenings in April offshore over Lema Channel and the Pearl River estuary, the identity of which is uncertain—but perhaps due to terns.

During the period April 24–28, 1972, echoes were recorded apparently arriving at the south coast of China from over the South China Sea, on at least four afternoons, on tracks that ranged from NNW to NNE with a predominance of NNW–N. Using the RHI facility of the 43S radar, we were able to determine that these arriving migrants were flying at altitudes up to a ceiling of 11,000 foot (about 3,700 m). On three evenings in this same period we also observed an onward departure inland in the same northward direction both from part of Hong Kong and also from some Chinese islands a little to the south of Hong Kong. The character of the echoes was of the "passerine-type" during their mass evening departure after sunset. Together, the observation of an arrival from the south and a closely-related onward movement northwards in the same direction indicates a crossing of the South China Sea of between 700 and 1,200 miles to the mainland of China from an origin in the southern Philippine Islands (perhaps Palawan Island) or from the north coast of the island of Borneo, and a non-stop flight for 36–48 h, by an unidentified population of birds that may have over-wintered even further south.

It is thus clear from our preliminary analysis of the records that radar studies of bird migration in other Far Eastern countries (which together compose a network of offshore "barrier archipelagos" and "inland seas") would be very revealing. Furthermore, films made during such studies would dramatically highlight the urgent need for cooperative inter-governmental measures to conserve a migratory bird fauna that, by virtue of its migrations, belongs equally to the several countries of the region from Australasia and Indonesia and Malaysia on the one hand, to China, Japan and the USSR on the other.

We thank Mr G. J. Bell, director of the Royal Observatory, for his enthusiastic interest in determining early in April 1972 whether bird migration was in fact being detected by this equipment, and subsequently in providing facilities for recording the migratory movements by means of time-lapse photography of the radar plan position indicator.

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Received November 15, 1972.