The woodpigeon (Columba palumbus) is an economically important and widespread pest in the United Kingdom feeding extensively on arable crops such as brassicas, clover, wheat, barley, peas, beans and turnips (e.g. Murton, 1965; Murton & Jones, 1973; MAFF, 1976). Shooting is the usual control method and in the late '60s Murton and his co-workers (Murton et al., 1974) investigated the circumstances under which decoys of this species would result in the greatest shooting success. It appeared in the course of this work that certain decoys might be repellent. Various numbers of woodpigeons bodies with either open or closed wings were laid out and birds passing overhead were watched for a positive response (i.e. dipping, circling, hovering or settling). It was found that with closed-winged decoys 54% of responding birds actually landed whilst only 4% of responding birds would settle with open-winged decoys (Murton, 1974).

Murton (1974) suggested that pigeons preferred not to settle with open-winged decoys because they present some intraspecific sign stimuli eliciting flight not shown by closed-winged decoys. The obvious candidates for such sign stimuli are the white wing marks, clearly visible in the open-winged bodies but not seen in the closed-winged corpses. If it is this feature that is important then, as Murton (1974, p. 229) stated "there is scope for experimentation to determine whether the white mark, and its size and distribution relative to the wing could be exploited as a super stimulus". However the lower probability that a bird will

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settle with open-winged as opposed to closed-winged bodies does not necessarily mean that the former are repellent; they might simply be less attractive than the latter. Additional data were provided by the field trial of Hunter (1974). He placed open-winged decoys over a two acre cabbage field and found that it had suffered less damage after four weeks than had two adjacent control fields, although after a further week damage was similar on all three fields. This result suggests that open-winged bodies might indeed be repellent to some degree, and therefore the white wing marks may function as 'alarm' sign stimuli, the woodpigeon having no alarm call.

There are, however, other possible explanations of the aversive nature of bodies in the open-winged posture (Inglis, 1980). The unusual body posture may have resulted in the birds not classifying the decoys as bodies but rather as novel objects. This would appear improbable given the ability of feral pigeons, at least, to form complex visual concepts (e.g. Herrnstein, 1979). The discrepancy between the abnormal body posture of the open-winged decoys and the expected range of postures normally exhibited by woodpigeons on the ground, might in itself be sufficient to cause alarm. Also as a result of the unnatural posture, it is possible that the open-winged decoys might be recognised as corpses more easily than the closed-winged decoys. The tendency for some predators to engage in surplus killing (Kruuk, 1972; Nunn et al., 1976) suggests that the sight of a fresh corpse might be expected to elicit flight as it could be dangerous to remain in its vicinity; a decomposed body on the other hand should elicit less fear. Bodies of gulls in an outstretched wings posture have been used with varying degrees of success to deter gulls from airfields (e.g. Hardenberg, 1965; De Jong & Blockpoel, 1966; Saul, 1967). One common finding has been that if the corpses are allowed to deteriorate than any repellency is lost: a result predicted by the 'surplus killing' hypothesis. However, habituation and deterioration obviously proceed together and to separate these effects it would be necessary to present fresh and partly decomposed bodies at the same time or as independent stimuli.

The present work investigated the response of woodpigeons to decoys in various postures in an effort to decide between the above explanations with the long term goal of developing an efficient scarer for use against this species.

Methods

In this series of experiments woodpigeons coming to a preferred feeding site were given the opportunity to choose between two areas within which to settle. Either one of the areas