PATHOLOGICAL INVESTIGATIONS

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DURING the year under review attention was again concentrated on the young stock rather than adults, because it had become only too clear that the mortality rate in ducklings was still much too high. Lack of space at the New Grounds means a temporary overcrowding of the rearing quarters : this, although highly undesirable, must be regarded as inevitable.

In previous reports mention has been made of the heavy losses that have occurred due to infestation with the stomach worm, *Acuaria*. As a result of this, radical alterations were made to the water supplies to the pens designed to ensure a supply of pure water direct from a well in preference to the previous system where surface water from a stream was used.

This system appears to prove effective. Some losses have occurred from *Acuaria* but this in the main is attributable to the temporary breakdown of the pure water supply with the resultant necessity to fall back on the old source.

The virtual eradication of *Acuaria* did not, during the season under review, produce the hoped for effect. Losses continued to occur in many species. Whilst this might be attributed to conditions inherent in the rearing system it is felt likely that there may be a more fundamental cause, namely a dietetic one. Little is known of the fundamental nutritional requirements of the majority of the species reared at the New Grounds. If only this information can be obtained it is the writer's personal opinion that a major handicap to successful rearing under artificial conditions will be removed.

Aspergillosis

From time to time this condition has been mentioned in various reports and in another part of this Report (pp. 133–138) is outlined an investigation into this disease.[1] In view of this it may be of interest to provide a few general notes as a background.

The first published record was by a Richard Owen, who, in 1832, observed a green vegetable mould in the lungs. The disease is regarded as a disease of captivity particularly among waterfowl but isolated instances have been recorded which suggest that birds may be infected when in the wild state. In fact, a wild White-fronted Goose collected from the Dumbles proved to have gross lesions of Aspergillosis in both lungs and air sacs. A further point of interest in this case was that swabs were taken from the pharynx and also from the entrance to the trachea. The former failed to yield *Aspergillus* whilst from the latter swab a number of spores were recovered.

Much work is yet to be done on this condition and whilst the changes that occur in the tissues following natural infection have been studied in detail we

[1] A new three-year study of this disease has recently been started by Mr J. V. Beer at the New Grounds.

know of no definite cure nor have we any means of diagnosing the presence of the disease until it is advanced. The damage caused is so great that death from gross tissue injury is inevitable.

What we need to know about this condition is firstly whether one is justified in the assumption that it is essentially a disease of captivity. May not it be a disease affecting birds in their natural habitat ? This can only be determined by examination of birds in their natural surroundings.

ROCKET-NETTING IN 1953 AND 1954

DURING the period covered by this report the capture of over 9000 geese in Central Iceland in July and August 1953 made the major contribution to the Trust's programme of goose-marking. (An account of the 1953 Þjórsárver expedition will be found at pp. 63–98.) Nevertheless, operations with rocket-nets in Scotland and England in the autumn of 1953 and 1954 yielded catches of 1853 (1558 Pinkfeet) and 1572 (all Pinkfeet) respectively, numbers considerably larger than in any previous years. These totals were achieved by substantial increases in the average size of each catch, the number of times the nets were fired being comparatively few (Table I). Table II lists the individual catches. Those of 1952 are included so that, with Table V in the Fifth Annual Report (1951–52), pp. 20–21, this constitutes a complete record of the catches made by the rocket-netting method.

The equipment used has not been subject to any major modifications since the introduction of cordite-propelled rockets in 1952. The increase in average catch results from the use of rather larger nets (60 × 25 yards) and increased skill in the selection of sites and the concentration of geese on the areas chosen.

In 1953 Professor W. H. Elder, of the University of Missouri, accompanied the team in order to examine the geese for the presence of lead-shot, by means of a portable fluoroscope (X-ray) equipment. Professor Elder also initiated the weighing of most of the geese and the determination of sex by the cloacal method. His reports on the examination for shot and on the weights of Pinkfeet and Greylags will be found at pp. 123–126 and 127–132.

Dr W. J. L. Sladen, who had begun a search for the presence of fungal spores in the respiratory tracts of geese in November 1952 and continued it during the Iceland expedition in July and August 1953, made a further collection of material from geese caught in November 1953. Dr Sladen's material has been studied by Mr P. Austwick and their report will be found at pp. 133–138. In 1954 Mr J. V. Beer resumed work on this problem, employing rather different techniques of swabbing and culture. Mr Beer is combining an investigation of the incidence of fungal diseases in wild birds with a study of the pathology of affected birds in the Trust collection.