Table 1. FAWN/100 HIND RATIOS FOR RED DEER (*Cervus elaphus*) FROM FIVE NEW ZEALAND AREAS

Area	Total animals	Fawns/ 100 Hinds	Approx. 90 per cent confidence limits
Central North Island	134	28	± 9·8
Nelson–Marlborough	284	70	± 13·9
Canterbury	224	39	± 9·6
Southern Lakes	272	47	± 10·1
South Westland	96	35	± 13·5
All areas	1,010	47	

Corrected χ^2 (ref. 1) to test differences between the areas was 20·62, with a probability of a greater value 0·0004. Approximate 90 per cent confidence limits were calculated using the formula

$$\frac{100F}{H} \pm \left(100\sqrt{\frac{(F+H)F}{H^2}}\right) 1{\cdot}6449.$$

for two consecutive years. Three of the five areas showed no significant difference between fawn/hind ratios taken in 1952 and 1953. Values for the three areas were: Central North Island, 27/100–31/100 ($\chi^2 = 0{\cdot}023$); Nelson–Marlborough, 67/100–75/100 ($\chi^2 = 0{\cdot}228$); and Southern Lakes, 48/100–47/100 ($\chi^2 = 0{\cdot}00015$).

Southern Lakes, South Westland, Canterbury and Central North Island habitats include most of the deer population in New Zealand. Fawn/hind ratios from these four areas combined (41(±4)/100) correspond closely to those recorded by Alex-Hansen[3] from Jutland (38·5/100), near the northern limit of the range of the European red deer, and are significantly less ($\chi^2 = 6{\cdot}84$) than those ratios of 60/100 recorded from Scotland and Germany by Darling[4] and Müller-Using[5] respectively.

Grateful acknowledgment is made to those Government shooters who co-operated in recording results of unselective shooting to make these data available. This work was done while I was employed by the Department of Internal Affairs. The formula for approximate 90 per cent confidence limits was supplied by the Applied Mathematics Laboratory, Department of Scientific and Industrial Research, New Zealand.

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The Reniform Nematode in the Gold Coast

THE reniform nematode (*Rotylenchulus reniformis*) was first described as an obligate parasite on the roots of many plants in Hawaii[1], and a list of sixty-five hosts was given by Linford and Yap[2]. Subsequent records[3-5] have added a further five hosts from the United States.

The occurrence of the reniform nematode has now been noted on a number of hosts at three sites in the Gold Coast, West Africa.

Plants on which this nematode has been found capable of egg production in the Gold Coast are: *Amaranthus spinosus* L.*, *Citrus limon* Burm. f.*, *Crotalaria juncea* L., *Crotalaria striata* D.C., *Daucus carota* L. var. *sativa* D.C., *Glycine max* Merr.*, *Hibiscus esculentus* L., *Ipomoea batatus* L.*, *Lycopersicon esculentum* Mill., *Manihot esculenta* Grantz.*, *Nicotiana tabacum* L., *Persea americana* Mill.*, *Poinciana pulcherrima* L.*, *Solanum melongena* L. var. *esculentum*, *Sorghum vulgare* Pers., *Synedrella nodiflora* Gaertn.*, *Vigna sinensis* Endl., and *Zea mays* L. Those marked with an asterisk are new host records for the reniform nematode.

Life-history studies suggest that the West African forms have a shorter life-cycle than those described by Linford and Oliveira[1]. Soya grown from seed in soil infested with *Rotylenchulus* contained swollen forms after four days, mature females with gelatinous matrix after seven days; egg-laying commenced at ten days, and, fifteen days after sowing, second-generation larvæ were hatching within the egg-masses.

All three sites were old centres of European cultivation within fifteen miles of the capital, Accra, so it is not possible to say whether the reniform nematode is indigenous to the Gold Coast. A more detailed account will be given elsewhere at a later date.

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Regulation of Outbreeding in Field Beans (*Vicia faba*)

IT has been reported that field beans show about 30 per cent of cross-fertilization in eastern England[1], and rather more in eastern France and Germany[2]. In the course of some pollination experiments at the Plant Breeding Institute, evidence has been obtained of a natural regulating mechanism which stabilizes this breeding structure.

The plants studied came from commercial seed, inbred lines, and F_1 hybrids, and were grown in an insect-proof glasshouse. Several self- and cross-fertilization treatments were applied, and the results of three of these are set out in Table 1, expressed as the mean number of seeds obtained per flower treated.

It can be seen that, on inbreeding, the ability to set seed without some manipulation of the flower was progressively lost. In most cases it was immaterial whether self- or cross-pollen was applied, except in the more advanced inbreds, where cross-pollen was more effective, possibly indicating some degree of self-incompatibility in this group. On hybridization,

Table 1

Group	Treatment *a*	Treatment *b*	Treatment *c*
Commercial sample	0·56	2·97	2·89 ± 0·266
Second-generation inbreds	0·27	2·13	1·87 ± 0·158
Fourth-generation inbreds	0·04	1·42	2·14 ± 0·123
F_1 hybrids between third-generation inbreds	1·36	1·98	2·09 ± 0·133

(*a*) *Control*: flowers left untreated. (*b*) *Artificial self-pollination*: keel of mature flower depressed to push self-pollen on to the stigma. (*c*) *Mixed pollination*: as (*b*), but foreign pollen placed on stigma in addition to self-pollen already there.