which are morphologically very different may reveal further examples.

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Differentiation of the Oral Field of the Sea Urchin Embryo

From the structure of the gastrula and the observation of the movement of the primary mesenchyme cells first towards the animal pole along the lateral bordering of the oral field and then back, finally surrounding the ventral half of the oral field, the hypothesis was derived that an unknown factor is spreading from the centre—the later mouth—of the oral field towards the margin of it[1]. This spreading is accompanied by the differentiation of the cells of the oral field, for example by a decrease of unspecific esterases from the centre towards the margin[2]. Where the oral field is in contact with the dorsal and ventral ectoderm the ciliary band is differentiating.

Examining thin sections of 16-h gastrulæ of *Psammechinus miliaris* in search of specific differentiations of the oral cells, we found a clear polarity as already described[3] and a peculiar formation of processes of the inner cell surface orientated versus the middle of the oral field (indicated by arrows in the picture). Each cell has an elongated tip narrowing to a fine filament or band which, at least from the cells near the centre, is in contact with this centre. It can, therefore, be assumed that a close contact is necessary for the spreading of this hypothetical oral field factor.

Fig. 1. *Psammechinus miliaris*, 16 h gastrula, 2 cells of the oral field. *n*, nucleus; *m*, mitochondrium; *y*, yolk sphere. The arrows indicate the elongated tips of the inner surface of the cells. (× *c.* 11,700)

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Effects of Thiabendazole on *Syngamus trachea* in Pheasants

The nematode parasite causing 'gapes' in poultry and game birds—*Syngamus trachea*—has in the past been the subject of intense enquiry. This parasite is probably one of the most important causes of losses to rearers of game birds. The only reliable remedy so far has been barium antimonyl tartrate powder. This, however, has dangers, as pointed out by Clapham[1]. Phenothiazine has also been used as an anthelmintic[1], but this only attacks the larval stages in the intestine and eventually causes keratitis in the birds[2]. Recently a new drug, thiabendazole, has shown promise as an efficient anthelmintic against *Syngamus*[3,4], but no trials with pheasants in Britain had been carried out.

Preliminary trials have just been completed and give some idea of the effects of different levels of administration and the effects of single doses and continuous feeding of the drug.

(*A*) *Continuous feeding of thiabendazole-treated mash.* A group of four-week-old pheasant chicks was dosed with approximately 130 infective eggs of *Syngamus* each. Two weeks later they were split into three groups when the parasites were mature and the female worms had started laying eggs. One batch was fed continuously with poultry growers mash without drug added, the second batch was fed on mash + 0·05 per cent thiabendazole and the remaining batch was fed mash with 0·1 per cent thiabendazole added. Fæcal egg counts by the McMaster technique[5] were carried out on all three batches before the experiment started and were continued each day until the tests were finished. Fig. 1 shows the egg counts obtained. 0·05 per cent drug concentration treatment was not started until day 4.

At the end of the experiment the birds were killed, and the number and condition of any parasites remaining determined. The results are summarized in Table 1.

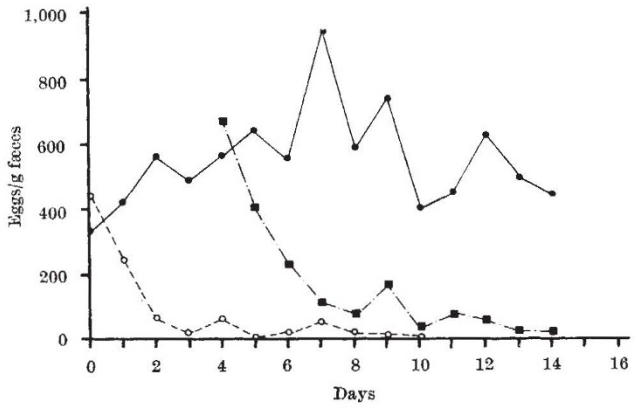

Fig. 1. Fæcal egg counts during continuous feeding of thiabendazole-treated mash. ●, Controls; ■, 0·05 per cent drug; ○, 0·1 per cent drug