Table 1. AGED MICE

Sizes of all litters born	Appearance of uterus		Age	
	Normal embryos	Regressing implantations	months	days
M, 6, 7, 6, 10, 7, 11, 6, 9, 2, 5	6	5	10	2
6, 8, 10, 10, 9, M, 10, 8, 10, 7, 7, 6	3	4	9	21
10, 6, 10, 5, 6, 8, 2	3	12	9	17
12, 10, 10, 8, 6, 3, 5, 2	2	4	9	11
9, 4, 9, 10, 12, 7, 8, 8, 3, 4, 4	4	4	9	15
8, 7, 2, 10, 10, 7, 3, 11, 8, 9, 7	11	1	9	15
8, 10, 11, 10, 7, 3, 5, 3	4	5	9	15
11, 10, 13, 12, 4, 7, 7, 6, 8	7	4	10	18
9, 7, 7, 12, M, M, 9, 7, 7, 2, 6	5	3	10	11
8, 12, 8, 9, 10, 9, 7, 4, 9, 8, 3, 3	3	5	10	20
Young mice				
Virgin	7	0	Approx. 2 months	
"	7	1	"	
"	9	0	"	
"	3	1	"	
"	8	0	"	

M, litter mutilated by mother before it could be counted.

It will be seen that the embryonic loss in the aged mice is considerably higher than in the young mice, although the total number of implantations is not much less than the number of offspring per litter born during their early breeding life.

These results provide further direct evidence of the cause of the declining fertility in aged mice. However, they still leave open the question as to whether the failure of the implanted embryos to develop is due to structural changes in the uterus, changes in the endocrine environment or lethal factors in the eggs.

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A Phosphorus-Magnesium Interaction in Tomato Nutrition

APPLICATIONS of phosphorus to an acid greenhouse soil initially low in this nutrient has resulted in increased tomato yield and reduced the incidence of manganese toxicity¹. This observation has previously been noted². Other effects accruing from phosphorus applications, however, are decreased leaf contents of nitrogen and potassium³.

In further experimental work on the acid soil referred to¹ superphosphate and lime were applied at 0 and 2½, 6 and 0 and 10 and 20 oz. per sq. yd. respectively. Apart from the beneficial effect of both fertilizers on yield, plant growth and excess manganese symptoms it was further observed that some plants developed leaf chlorosis typical of magnesium deficiency. Soil and plant analysis confirmed this observation (Table 1).

The most notable feature of the results is that at the 'no calcium' level the available magnesium of the soil and the magnesium status of the plant decreased with increasing phosphorus application. The available soil magnesium content and plant uptake increased with rate of lime applied. While levels of available soil potassium were reduced by the phosphorus fertilizer particularly in the 'no calcium' treatment no clear-cut effect was discernible in the potassium status of the plants.

Table 1. EFFECT OF SUPERPHOSPHATE AND LIME ON AVAILABLE SOIL CATIONS AND PLANT UPTAKE

Treatment	Soil				Leaves			
	Ca	P	K	Mg	Ca	P	K	Mg
	(lb. per acre)*				percentage oven-dried samples			
No P No Ca	2,367	5.5	1,000	185	3.6	0.08	5.5	0.70
Med. P No Ca	2,400	10.67	978	170	2.9	0.08	6.9	0.47
High P No Ca	3,833	19.67	754	120	3.7	0.16	5.3	0.36
No P Med. Ca	2,333	4.5	972	215	2.7	0.06	5.8	0.77
Med. P Med. Ca	2,633	11.83	976	235	2.9	0.08	5.8	0.86
High P Med. Ca	4,233	24.67	856	215	2.9	0.14	6.1	0.52
No P High Ca	2,733	5.33	925	255	3.1	0.06	5.3	0.86
Med. P High Ca	2,500	13.67	905	245	3.6	0.07	5.5	0.89
High P High Ca	4,800	18.17	942	255	3.5	0.14	5.2	0.72

* Extracted with sodium acetate buffer (Morgan's reagent).

While magnesium deficiency of tomatoes has been largely attributed to excess soil potassium^{4,5} on this particular soil there has been an interaction between available soil magnesium, plant magnesium and applied phosphorus.

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An Unusual Parasymbiont of Marine Lichens

THE ascocarps of lichens vary in form from one species to another. Their development in several species has been examined by Doppelbauer¹, but nothing is known of the mechanism controlling their morphology. Study of a recently identified lichen parasymbiont suggests that the thallus may have a determining role.

Deakin² described as *Sagedia marina* a plant which was collected on 'rocks submerged by the sea at high-water, Meadfoot, etc., near Torquay, Devonshire'. It has since been found elsewhere between high- and low-water marks on the coasts of the British Isles and of Western Europe^{3,4}. Hitherto classed as a lichen, it has usually borne the name *Arthopyrenia marina* (Deakin) A. L. Sm., though von Keissler transferred it to the genus *Thelidium* Mass.⁵ and (from the synonymous *Verrucaria leptotera* Nyl.) to *Pseudarthopyrenia* Keissl.⁶. But examination of the type specimen in the British Museum Herbarium shows that it is in fact a parasymbiont on *Verrucaria mucosa* Wahlenb.—that is, a parasite which does not harm the lichen but appears to share the thallus with the lichen's own ascocarps. Authentic material of *Arthopyrenia leptotera* (Nyl.) Arn. named by Nylander and also in the British Museum Herbarium belongs to the same species and the name is a later synonym. Since it is a parasymbiont the species should be transferred to the genus *Pharcidia* Körber. This will be dealt with elsewhere; but unfortunately the combination *Pharcidia marina* is precluded by its application (illegitimate) by Bommer⁷ to the species now known as *Arthopyrenia consequens* (Nyl.) Arn. (syn. *A. sublitoralis* (Leight.) Arn.).

Material of the parasymbiont that I collected in July 1961 in Ireland, West Cork (vice-county H3), Tragumna Bay, on acidic shale shows an interesting state of affairs. It had for its hosts fertile plants of