observed in the Sound and Fehmarn Belt. This interpretation, although supported by results from Danish tagging experiments[13], should be tested by further investigation.

In addition to cod and whiting, distinct intraspecific variation in hæmoglobin patterns has been observed in sole (*Solea solea*) and eel-pout (*Zoarces viviparus*). These preliminary results suggest that hæmoglobin polymorphism may be of rather common occurrence in fishes and that zone electrophoresis of hæmoglobins may become a valuable tool in taxonomic investigations of fishes at the sub-specific level.

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VIROLOGY

Inactivation of Rous Virus by Phospholipase *A*

Rous virus is known to consist of protein, ribonucleic acid (RNA) and lipid, about 40 per cent of which is in the form of phospholipids[1,2]. Partially purified preparations of the virus are inactivated by a wide range of lipid solvents—organic solvents, bile salts and synthetic detergents—and the loss of infectivity is associated with the shedding from the virus particles of protein-like material[3].

Anderson and Ada[4] have shown that Murray encephalitis virus—an arthropod-borne virus containing RNA, protein and lipid—is inactivated by phospholipase *A*. This communication reports a similar loss of infectivity in Rous virus preparations incubated with phospholipase *A*.

Partially purified Rous virus suspensions were made from fresh fowl-grown tumours according to the method of Carr and Harris[5] as modified by Bather[6]. Phospholipase *A*, supplied by Miss H. Doery of the Commonwealth Serum Laboratories, had been purified from the venom of the black snake (*Pseudechis porphyriacus*). The concentration of enzyme used in these experiments was 100 μgm. per ml. of 0·9 per cent sodium chloride ; each sample was boiled for 10 min. to ensure that phospholipase *A* was the only functional enzyme present.

Equal volumes of virus suspension (in phosphate-citric buffer *p*H 7·2) and phospholipase *A* were mixed and incubated at 37° C. for 30 min. As a control, the virus suspension was mixed in 0·9 per cent sodium chloride and kept at the same temperature and for the same time as the experimental tubes. The infectivity of the control and treated samples was estimated by titration in young chicks[5].

Table 1 shows the loss of infectivity which resulted from the incubation of Rous virus with phospholipase *A* in two experiments. Experiments with MH_2 tumour virus preparations have yielded similar results (Table 2).

Table 1. Effect on Infectivity of Rous Virus incubated with Phospholipase *A* (100 μgm./ml.) at 37° C. for 30 min.

		Dilution of sample and No. of tumours/No. of chicks inoculated at each dilution							Infectivity
		10	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	
1	Control	2/2	2/2	4/4	4/4	4/4	4/4	0/4	$10^{5.5}$
	Treated	2/2	2/2	0/2	0/4	0/4	0/4	0/4	10^{1}
2	Control	2/2	2/2	2/2	4/4	4/4	4/4	4/4	$>10^{6}$
	Treated	2/2	1/2	0/2	0/4	0/4	0/4	0/4	10^{1}

Table 2. Effect on Infectivity of MH_2 Virus incubated with Phospholipase *A* (100 μgm./ml.) at 37° C. for 30 min.

		Dilution of sample and No. of tumours/No. of chicks inoculated at each dilution							Infectivity
		10	10^{-1}	10^{-2}	10^{-3}	10^{-4}	10^{-5}	10^{-6}	
1	Control	1/2	2/2	2/2	4/4	4/4	1/4	0/4	$10^{4.7}$
	Treated	0/2	0/2	0/2	0/4	0/4	0/4	0/4	0
2	Control	2/2	2/2	4/4	4/4	2/4	0/4	0/4	$10^{4.0}$
	Treated	0/2	0/2	0/4	0/4	0/4	—	—	0

Since phospholipase *A* splits specifically only fatty acids bound in the − position, it was concluded from these results that Rous virus (and probably the other fowl tumour viruses as well) are inactivated by the cleavage of fatty acids from phospholipids contained in their structure.

This result would support a previous suggestion[3] that the integrity of at least some of the protein bound to the phospholipid moiety in the extra-nucleoid region of Rous virus particles is essential for infectivity. It may be that disruption of this phospholipid-protein wrapping is so radical as to cause irreversible injury to the virus RNA, and that it is this secondary effect which destroys the reproductive capacity of the virus. On the other hand, the lipoprotein shell of Rous virus may allow the virus particles to react with some intracellular system and this 'acceptance' may be a necessary prerequisite for virus replication.

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