



**FIBRINOGEN COAGULATION AND FIBRINOPEPTIDES
IN LOWER VERTEBRATES**

by

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CONTENTS

General Introduction	1
Chapter I. The Preparation and Properties of the Fibrinogens of some Lower Vertebrates	12
Chapter II. Isolation of Avian and Reptilian Fibrinopeptides	33
Chapter III. The N-terminals and Amino Acid Compositions of Certain Fibrinopeptides	55
Chapter IV. Partial Amino Acid Sequences of Certain <u>Cairina and Trachydosaurus</u> Fibrino- peptides	68
Appendix I.	
Appendix II.	
References.	

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SUMMARY

Chapter I of this thesis describes the preparation of highly coagulable and stable fibrinogens of one reptilian and four avian species, using methods involving precipitation with ethanol and glycine. N-terminal amino acid analysis before and after coagulation of the fibrinogens of two bird species suggested that mammalian thrombin cleaved two of three polypeptide chains with the release of two fibrinopeptides bearing no free α -amino groups. The mammalian-type three strand model of an avian fibrinogen was confirmed by electrophoretic and chromatographic separation of the individual polypeptide chains after oxidative sulphitolysis. After coagulation, one of these chains showed a much reduced anodic mobility consistent with the loss of a large net negative charge.

Chapter II describes the isolation and properties of fibrinopeptide material from the clot supernatant of all species after coagulation with mammalian thrombins. In the case of the lizard, two fibrinopeptides were recovered in approximately equal yield (i. e. mammalian like), but electrophoresis revealed a wide spectrum of avian fibrinopeptides, a finding inconsistent with that deduced from the original N-terminal analyses. The possibility that this arose from the heterologous coagulation system used (viz. mammalian thrombin on bird fibrinogen) was examined and excluded. Extensive

heterogeneity of the fibrinogen molecular species was also excluded.

Chapters III and IV are concerned with N-terminals, total amine acid compositions and partial amino acid sequences of certain lizard and bird fibrinopeptides. The lizard peptides appeared to be of the mammalian 'A' and 'B' classes. The main fibrinopeptide of the bird species was akin to a mammalian B-type, but no A-type fibrinopeptide appeared in substantial yield. The implications of this peculiar finding, and the origin of the range of 'minor' fibrinopeptides appearing is discussed.

I declare that, except as stated herein, this thesis contains no material which has been accepted for the award of any other degree or diploma in any University, and that, to the best of my knowledge, the thesis contains no copy or paraphrase of material previously published or written by another person except where due reference is made in the text of the thesis.

Signed:

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