I. CHESTER JONES

THE ADRENAL CORTEX

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THE ADRENAL CORTEX

BY

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Department of Zoology, University of Liverpool

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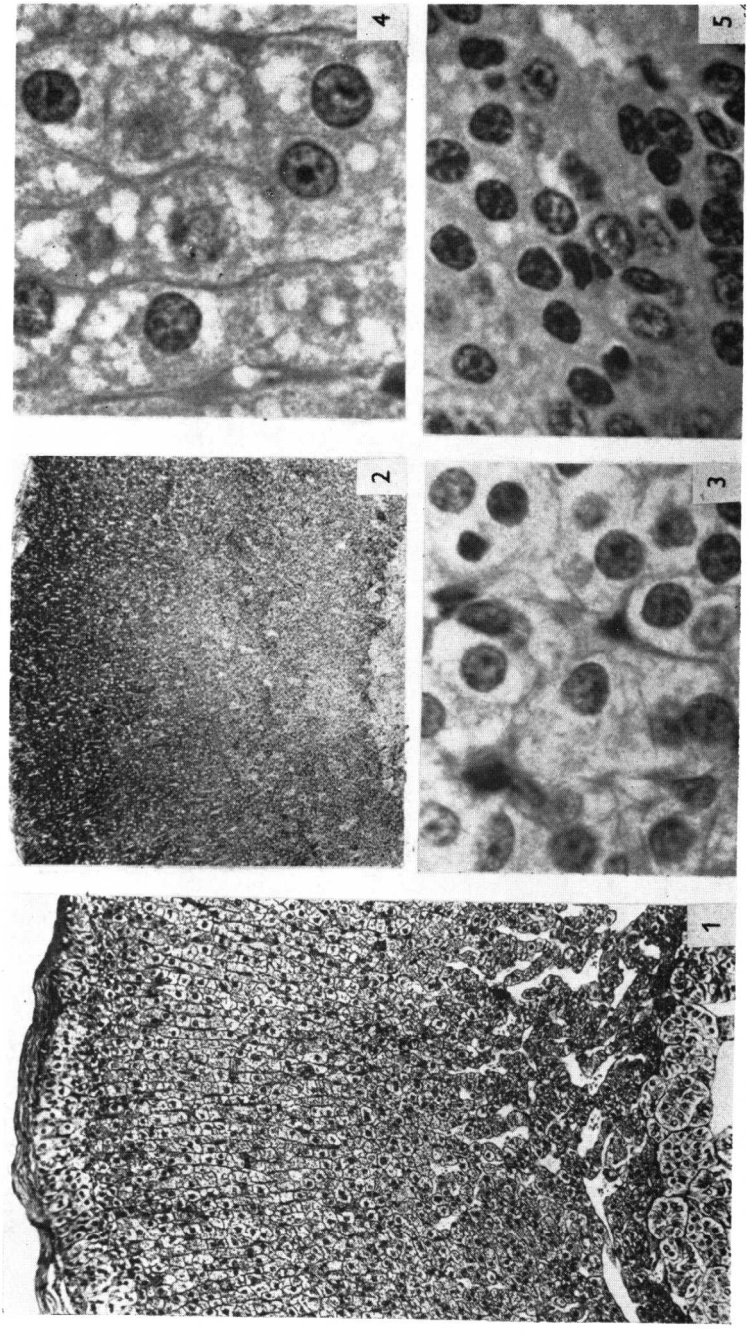
1957

PLATE I



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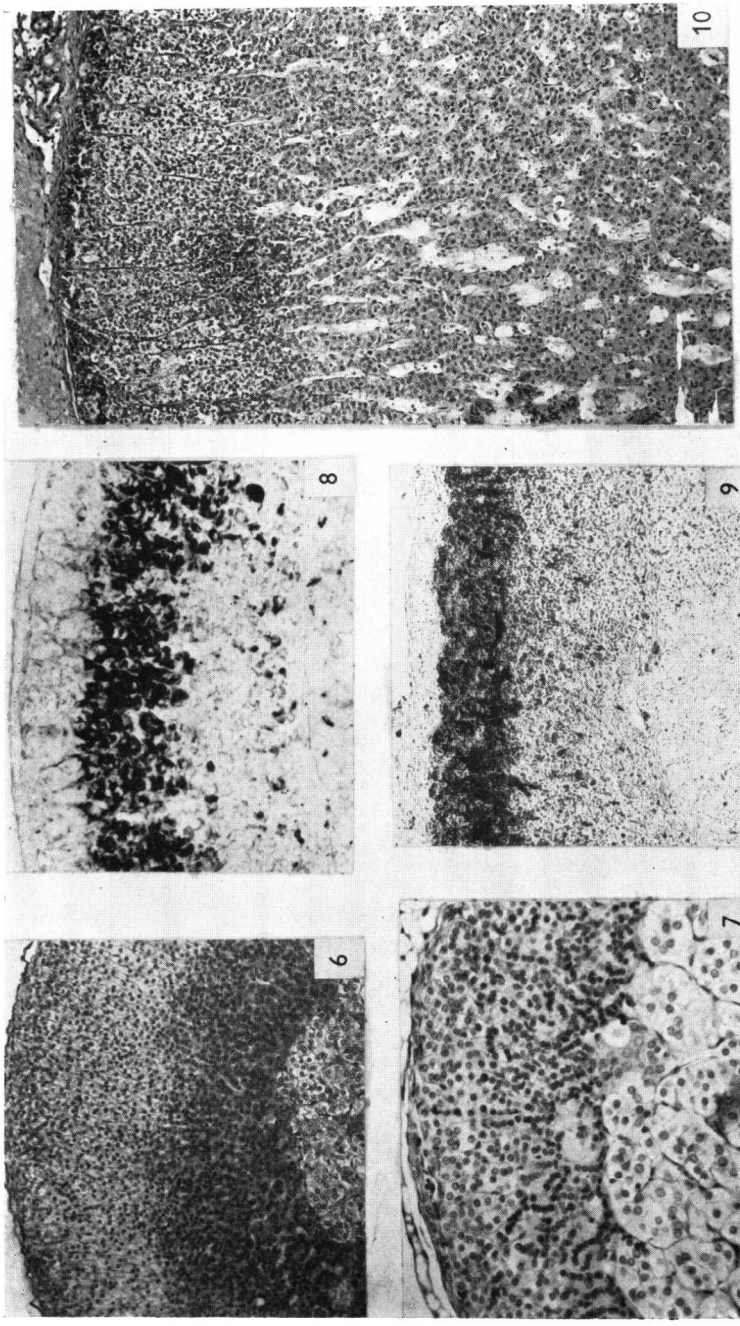

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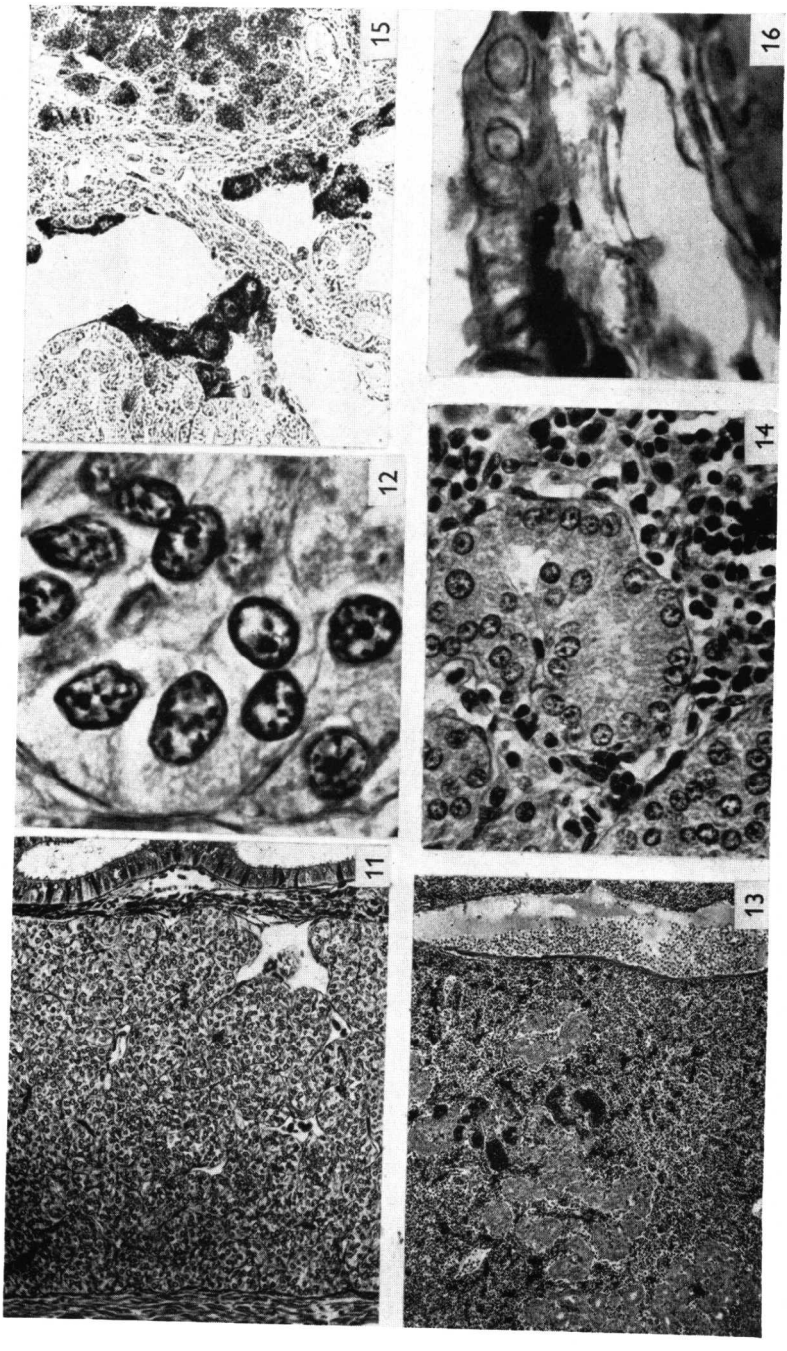

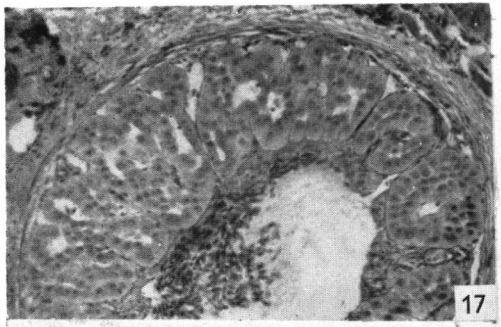

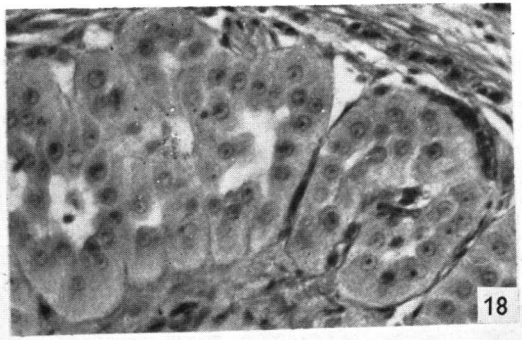

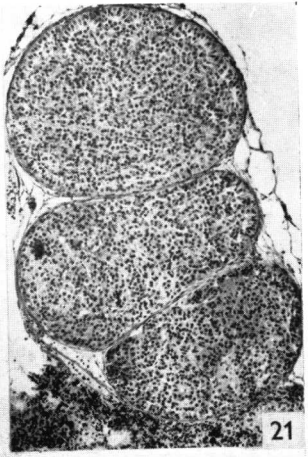

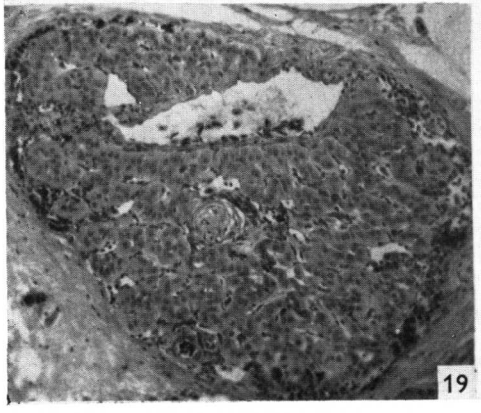

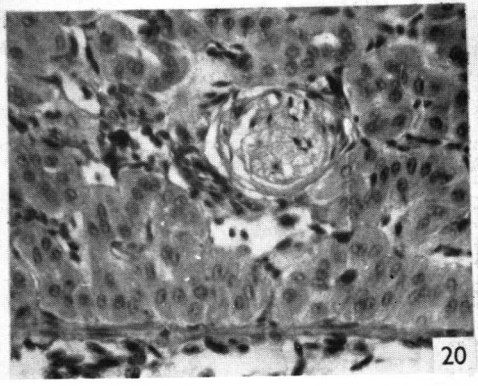

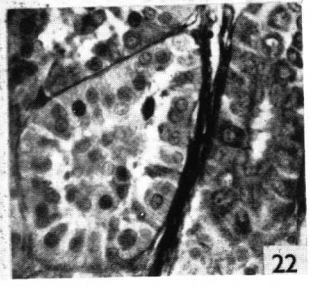

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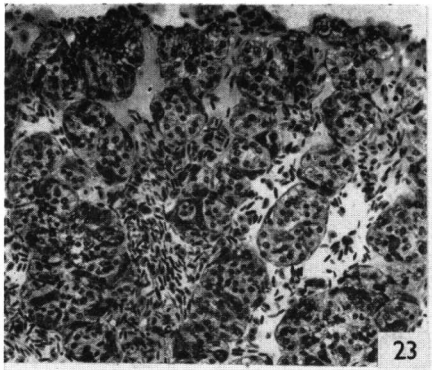

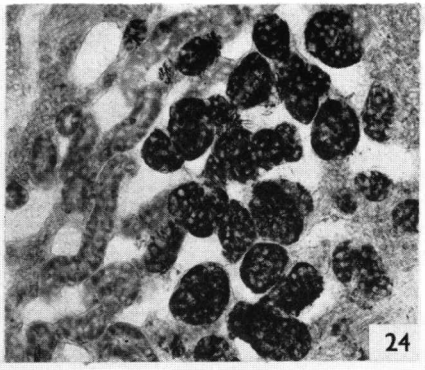

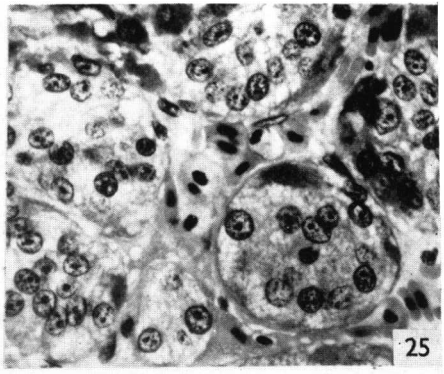

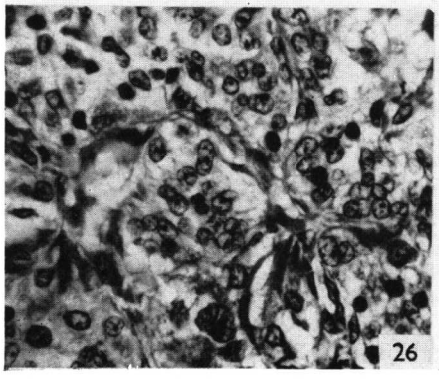

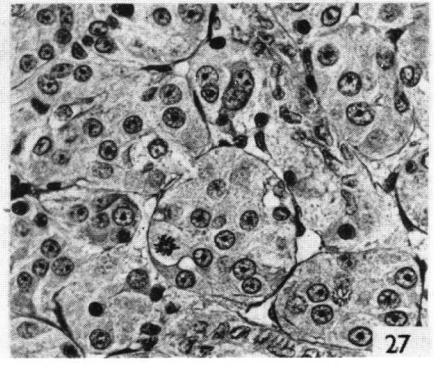

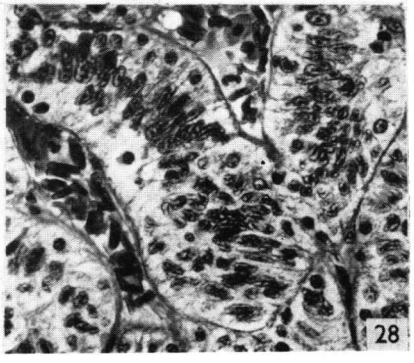

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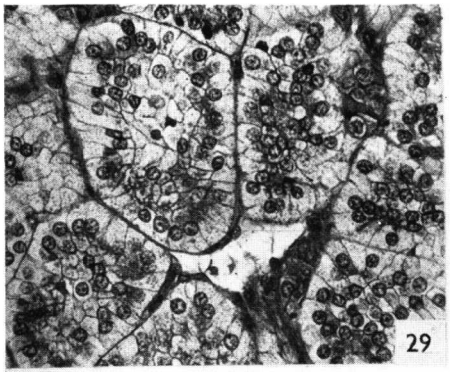

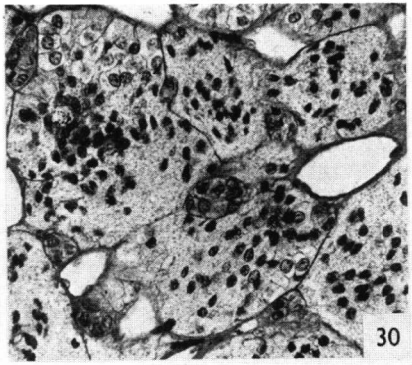

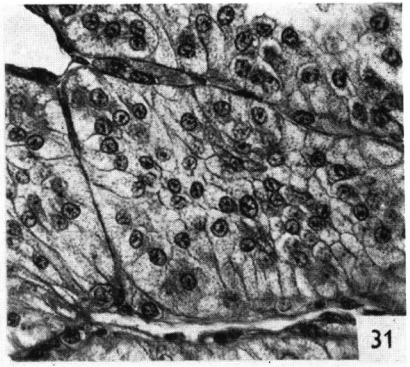

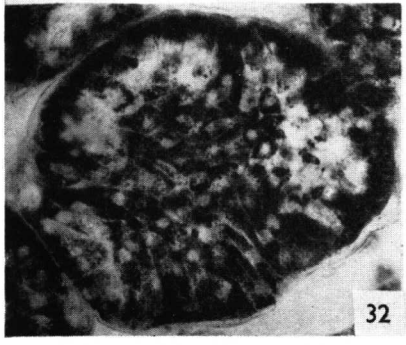

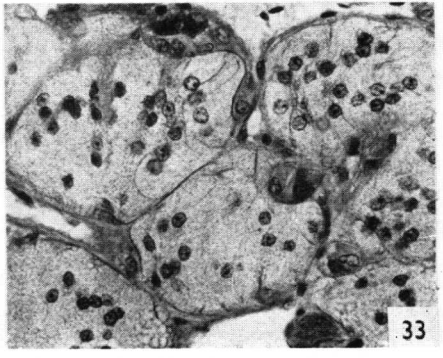

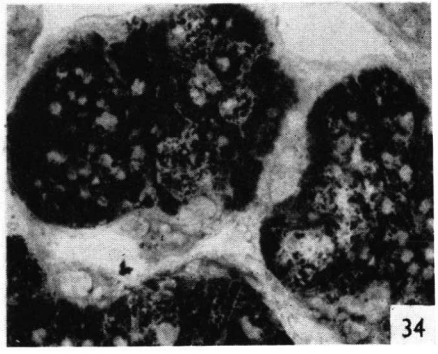

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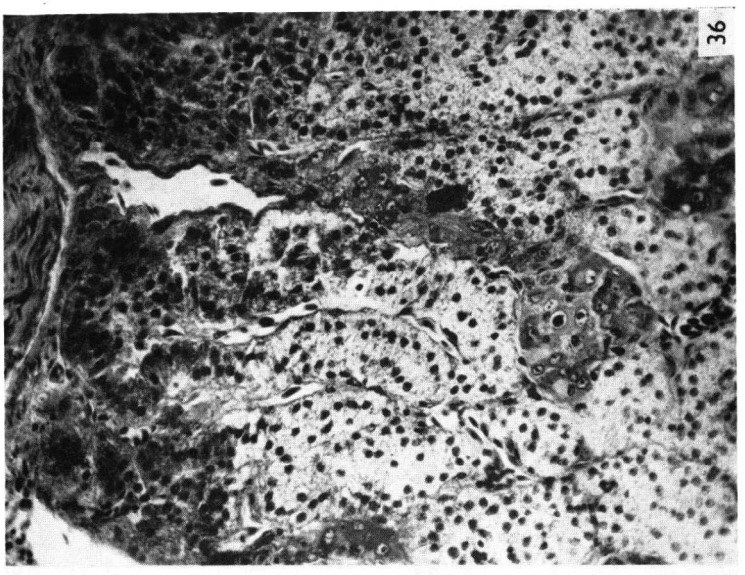

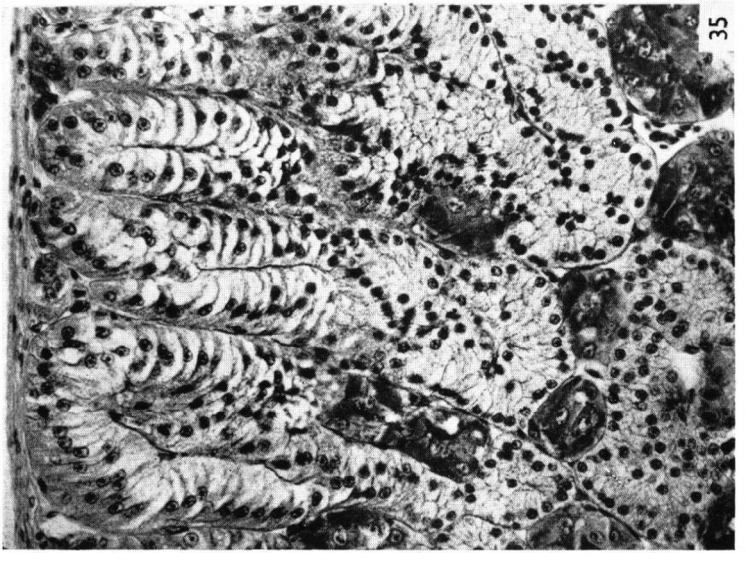

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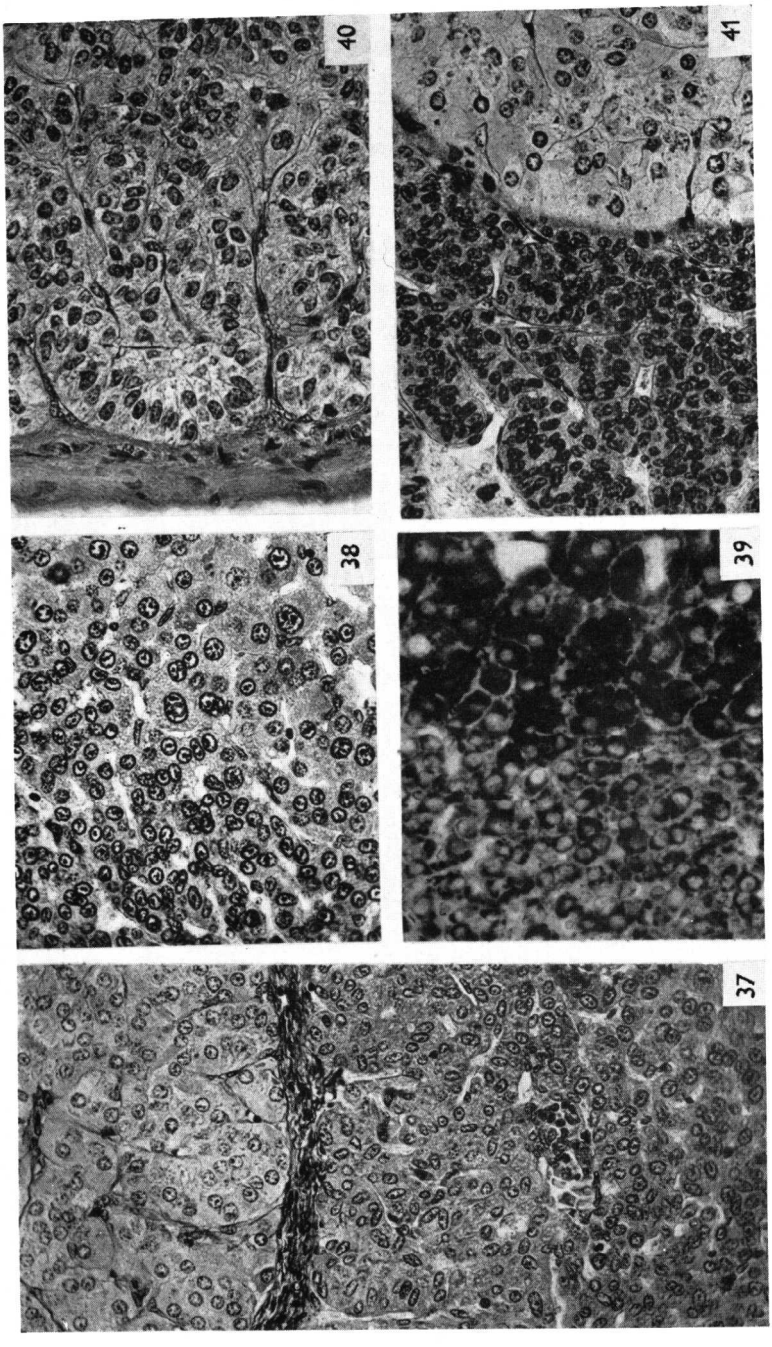
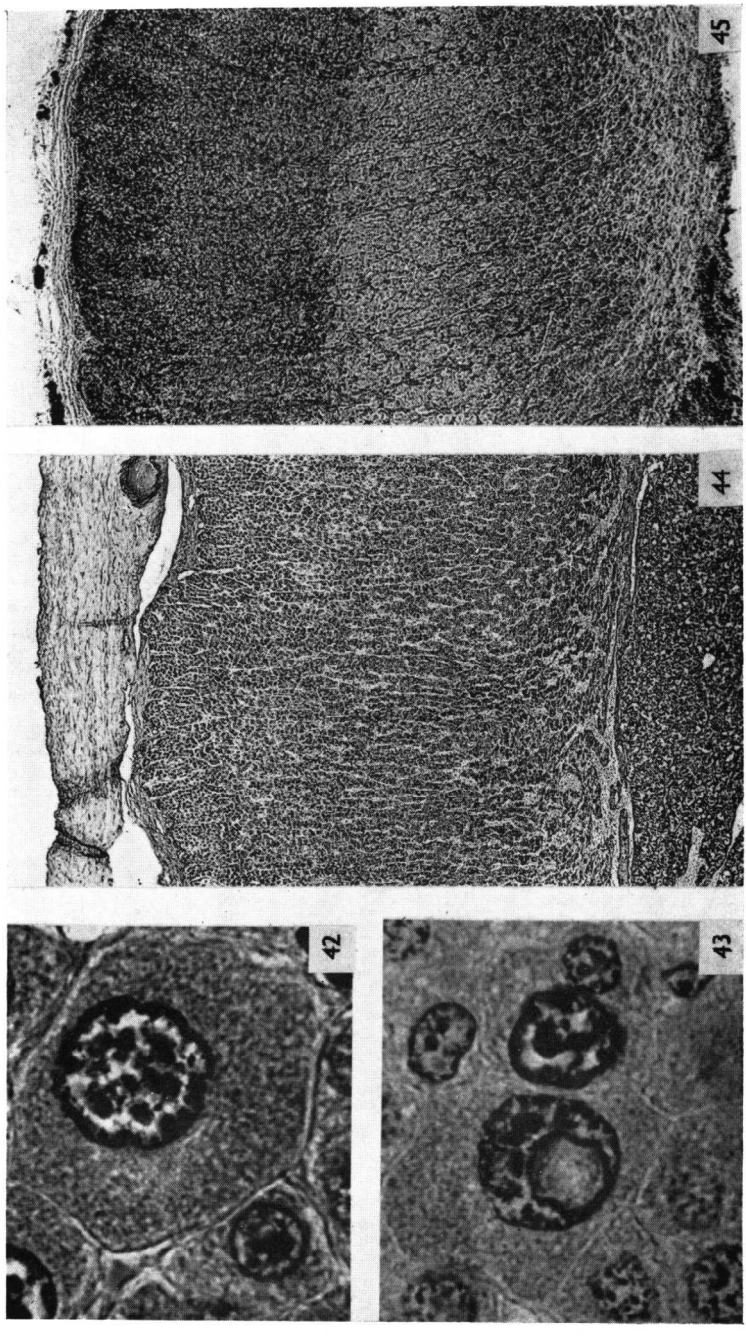


PLATE IX



PREFACE

I WROTE this book, at the suggestion of Professor P. B. Medawar, for the series of 'Cambridge Monographs in Experimental Biology'. It proved to be too long for inclusion there and now appears as a separate volume.

The Eutheria apart, the book contains a complete survey of what is known about the adrenal cortex of animals from marsupials to fish, covering the literature up to about the spring of 1955. It includes many data obtained by my research group at Liverpool. In particular, Dr A. Wright contributed to the chapter on Reptilia and, with Mr J. G. Phillips, to the section on Prototheria; Dr M. A. Fowler to that on Amphibia; Miss M. H. Spalding (Mrs Lawson) to that on Teleostei and Mr Phillips to that on steroids. To these and to Dr N. W. Nowell, Dr M. Christianson and Mr W. N. Holmes who have also worked with me in the field of comparative endocrinology, I am very grateful, especially for the lively and stimulating atmosphere they created.

The literature on the adrenal gland of the eutherian mammals is enormous and growing constantly. The chapter on the Eutheria can therefore, of necessity, be only an incomplete account. In it I have tried to give general background information and to provide a survey of current problems. As much of our information has been obtained from the rat and a few other species, it would be greatly to the advantage of the subject if a wide range of mammalian species were investigated. Moreover, it is my hope that workers will be stimulated to study also the lower vertebrates with an assiduity comparable to that bestowed on the common eutherian laboratory animals.

I am in debt to many people for their generous help in the making of this book, which, of course, remains my responsibility. I gained a great deal by being able to restart endocrinological work after the war under Professor R. O. Greep's skilled and sympathetic guidance at Harvard. More recently a travel grant from the Commonwealth Fund, generously arranged by Mr Lansing V. Hammond, allowed me to visit research centres

in the United States and to talk over problems with many workers. I am grateful to Dr W. Holmes and Dr P. Gérard for Protopterus material (Plate III); to Dr M. Olivereau and Mademoiselle Fromentin for microphotographs of the adrenal of the eel (Plate IV); to Professor Benoit and Dr Leroy for preparations of the duck adrenal (Plate VII); to Professor H. Waring and Dr I. G. Jarrett for freshly fixed adrenals of monotremes and marsupials (Plates VIII and IX). Professor F. G. Young was most kind in clarifying for me the present status of our knowledge of ACTH. I was helped a great deal by Professor Sir Solly Zuckerman, Professor R. J. Pumphrey, Dr C. L. Smith and Dr D. F. Cole, all of whom read either the manuscript or proofs at various stages and made many valuable suggestions. In addition Dr Cole contributed to the discussion on the action of hormones at the kidney level. Mrs Lawson assisted me throughout the preparation of the book and in the compilation of the bibliography and the index. The Cambridge University Press was at all times helpful, and tolerant of my errors.

I. C. J.

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ACKNOWLEDGEMENTS

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Office, Washington D.C.), Text-figure 27; *Journal of Pharmacology* (Williams and Wilkins, Baltimore, Maryland), Text-figure 29; *American Journal of Physiology* (American Physiology Society, Waverly Press, Baltimore, Maryland), Tables 28 and 30; *Rendiconti delle sessioni della Reale Accademia delle scienze dell' Istituto di Bologna*, Text-figure 32; *Journal of the College of Science, Tokyo* (Faculty of Science, Tokyo, Japan), Text-figure 32; *Quarterly Journal of Microscopical Science* (Clarendon Press, Oxford), Text-figure 32; *Hertwig's Handbuch der vergleichenden und experimentellen Entwicklungslehre der Wirbeltiere* (Fischer, Jena), Text-figure 32; *Journal of Clinical Endocrinology* (C. C. Thomas, Springfield, Illinois), Text-figure 32; *Journal of Anatomy*, London (Cambridge University Press), Text-figure 33; *The Mammalian Adrenal Gland* (Clarendon Press, Oxford), Text-figure 34; *The Life of Vertebrates* (Clarendon Press, Oxford), Text-figure 34.

NOTES

Unless otherwise stated, body weights are given in grammes and organ weights in milligrammes.

Wherever variance of a mean figure is shown, this is the standard error.

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