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STUDIES OF AUTO-IMMUNITY AND CYTOTOXICITY

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Being a thesis submitted in application  
for admission to the degree of Doctor of Medicine  
of the University of Adelaide

PART I CLINICAL STUDIES OF THE AUTO IMMUNE COMPLEMENT-FIXATION (AICF) TEST.

CONTENTS

	<u>Page</u>
Introduction . . . . .	1
Auto-immunity: Definitions and Terms . . . . .	3
Evidence of an auto-immune pathogenesis of certain human diseases . . . . .	5
The auto-immune complement fixation reaction . . . . .	8
The auto-immune complement fixation reaction in 1,014 patients . . . . .	11
Systemic lupus erythematosus . . . . .	12
Para- and dysproteinaemia syndromes . . . . .	15
Sjogren's disease . . . . .	18
Hepatic cirrhosis . . . . .	25
Acute hepatocellular disease . . . . .	29
Conclusion . . . . .	33
References . . . . .	44
Reprinted from British Medical Journal: Hackett, E., Beech, M., and Forbes, I.J., "Autoimmune Comple- ment-Fixation Reaction in 1,014 Patients" . . . . .	49
Reprinted from Australasian Annals of Medicine: Hackett, E., Beech, M., and Forbes, I.J., "Complement Fixation with Extract of Normal Thyroid Gland: Its Occurrence in Sera from Patients with Thyroid Disease and in Other Conditions" . . . . .	53

## INTRODUCTION

The concept that the antibody producing cells of the body may in some circumstances function to its detriment has been extraordinarily fruitful in stimulating research. That the cells of this system are involved in thyroid disease, some haemolytic anaemias and some other conditions suspected of having an auto-immune aetiology is proved beyond all doubt.

The cause or causes of such a pathogenetic mechanism, if it can be proved to exist, are unknown, as is the intimate nature of the involvement of auto-antibodies, or the cells bearing antibodies, in disease processes.

Nevertheless, whether autoimmunity be a cause or an accompaniment of certain human diseases, the vast research effort which is being made in many countries at present towards an understanding of the interrelationships between reticuloendothelial system and the rest of the body can not fail to be fruitful. The study of immunopathology has linked research in many fields--haemolytic diseases, the allergic diseases, cancer, organ transplantation, etc.

The diseases in which autoimmunity is suspected to be the pathogenetic mechanism are numerous, and the relevant literature is exceedingly voluminous. In no human disease, with the possible exception of some haemolytic anaemias (Brit. Med. J., 1959), is the concept proven. Even in the haemolytic anaemias the steps leading from the combination

of antibody with erythrocyte antigens to haemolysis are not understood (Dacie, 1959). Most of the antibodies found in the haemolytic states do not cause haemolysis directly, but presumably shorten the life of erythrocytes by making them liable to early phagocytosis.

The primary aim of this study of auto-immunity is to provide and assess evidence as to whether or not the cells of the human lymphoreticular system, or the products of those cells, may cause disease.

The first work provided data for comparison of clinical status of patients with the results of serological tests.

Studies of thyroid disease led to a review of published work relating to thyroiditis, because more accurate diagnosis and classification of thyroid disease is necessary for the interpretation of antibody tests.

Subsequent projects led to considerations of the way antibodies may affect living cells. Finally studies leading to the development of a method of detecting cytotoxic effects are presented.