بسم الله الرحمن الرحيم

شبكة المعلومـــــات الجامعية

التوثيق الالكتروني والميكروفيلم

شبكة المعلومات الجامعية

جامعة عين شمس

التوثيق الالكتروني والميكروفيلم

﴿ قـــســـم ﴾

نقسم بالله العظيم أن المادة التي تم توثيقها وتسجيلها
علي هذه الأفلام قد اعدت دون آية تغيرات

يجب أن

تحفظ هذه الأفلام بعيداً عن الغبار

في درجة حرارة من 15 – 20 مئوية ورطوبة نسبية من 20-40 %

To be kept away from dust in dry cool place of
15 – 25c and relative humidity 20-40 %

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

EFFECTS OF LEAD AND SOME CHELATING DRUGS USED IN ITS TREATMENT ON THE KIDNEY OF ADULT FEMALE ALBINO RATS

THESIS

SUBMITTED FOR PARTIAL FULFILLMENT OF MASTER DEGREE
IN BASIC MEDICAL SCIENCE (**HISTOLOGY**)

BY

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FACULTY OF MEDICINE
MENOUFIYA UNIVERSITY
1997

سورة البقرة آيه ٣٢

قَالُواْ سُبحَانَكَ لاَ عِلمَ لَنَا إِلاّ مَا
عَلَّمتَنَا إِنّكَ أَنْتَ العَلِيمُ الحَكِيمُ

To My

Family

ACKNOWLEDGEMENT

First and foremost, thanks are due to Allah.

It is a great honor for me to take this opportunity to express my great appreciation to ***Prof. Dr. Bothina Labib Mahmoud****, Professor and Head of Histology Department, Faculty of Medicine, Menoufiya University, for expert guidance, sincere devotion, kind supervision and generous encouragement and support offered to me during the conduction of this work which made this work possible and without her guidance this work would not come out.*

It is a pleasure to express my deepest gratitude to ***Prof. Dr. Samy Mostafa Badawy****, Professor and Head of Forensic Medicine and Clinical Toxicology Department, Faculty of Medicine, Menoufiya University, for honest guidance, kind supervision, and valuable suggestion and advice offered to me throughout this work.*

I would like to thank ***Dr. Maisa Attia Ahmed Kifafy*** *Lecturer of Histology, Faculty of Medicine, Menoufiya University, for her accurate supervision, kind cooperation and continuous support.*

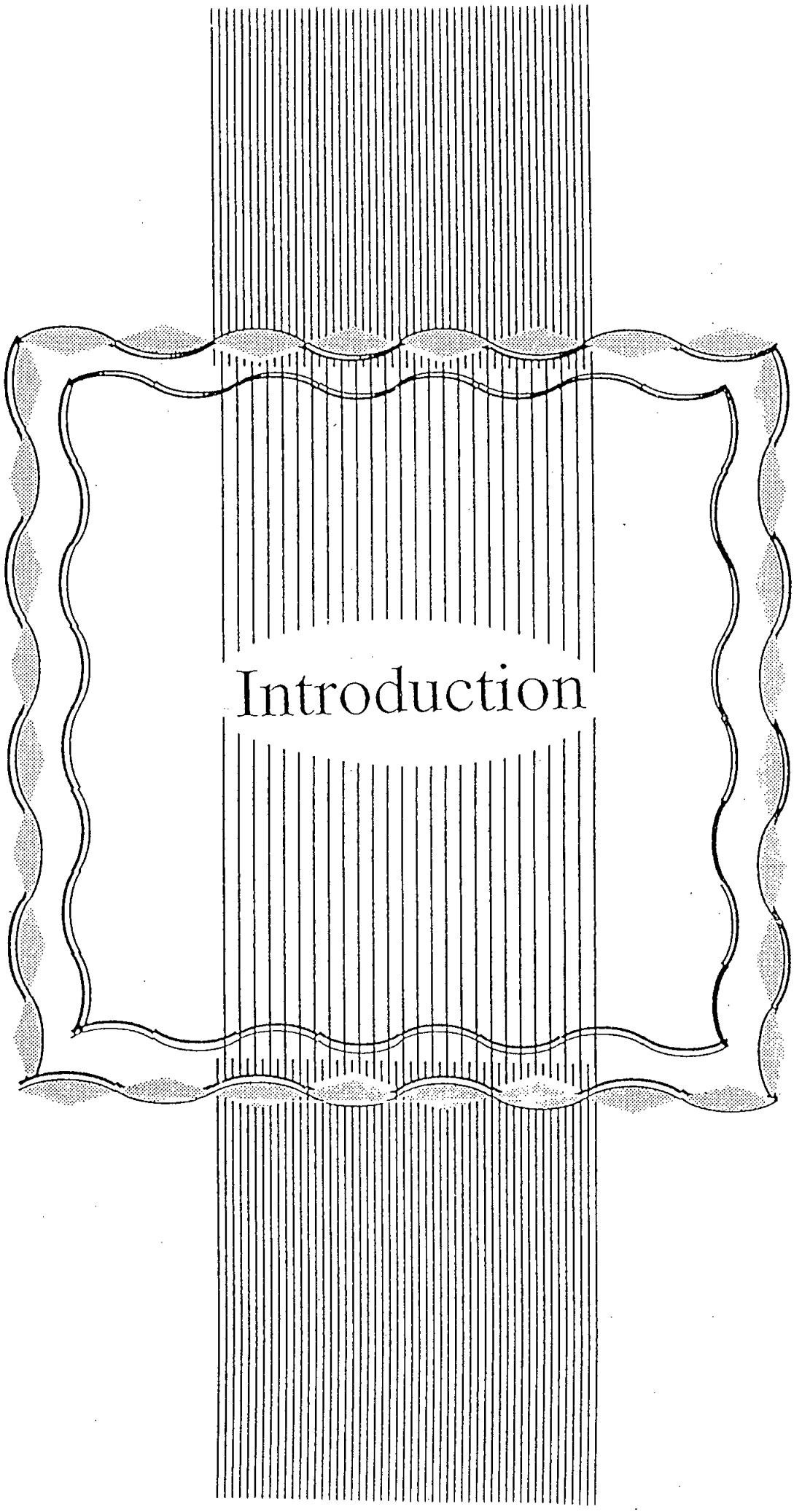
My great thanks to my colleagues and all members and staff of Histology Department, Faculty of Medicine, Menoufiya University for their encouragement and cooperation.

Hosam ghobaghy

CONTENTS

ABBREVIATIONS

A, D, H,	: Anti Diuretic Hormone.
A. L. A.	: Amino Levulinic Acid
A, T, P,	: Adinosine Tri Phosphate.
B. M.	: Basement Membrane
B. U. N.	: Blood Urea Nitrogen.
Cd	: Cadmium
Fe	: Iron
G. F. R.	: Glomerular Filtration Rate.
G. I.	: Gastro-Intestinal
I. M.	: Intra-Muscular
LD_{50}	: Lethal dose (the dose which results in death of 50% of animals).
M. T.	: Metallothionein.
P, A, S,	: Periodic Acid Schiff's reaction.
Pb	: Lead.
R. B. C.	: Red Blood Corpuscle


Introduction

INTRODUCTION

Heavy metals are a dangerous source of environmental pollution and lead exposure is a prime example of acurrent environmental pollution ***(Chisholm, 1976).***

Kidney disease arising from exposure to heavy metals plays a special role in nephrology because of the possibility of its prevention. Chronic renal disease resulting from occupational exposure to lead is readily identified and more intense than exposure in the general population.

Three clinical forms of lead nephropathy are currently recognized. First is the acute lead nephropathy resulting from brief but massive lead absorption ***(Bennet, 1985 and Ritz et al., 1988).*** Second is the chronic slowly progressive interstitial nephritis resulting from cumulative excessive lead absorption and usually associated with gout ***(Batuman et al., 1981; Craswell et al., 1984; Wright et al., 1984 and Colleoni and D'Amigo, 1986)*** and / or hypertension ***(Sharp et al.,1987; Parkinson et al., 1987 and Cledes and Allian, 1992).*** Third is hypertension arising from prolonged low-level exposure to environmental lead which develops in the absence of symptomatic lead intoxication and before clinically apparent

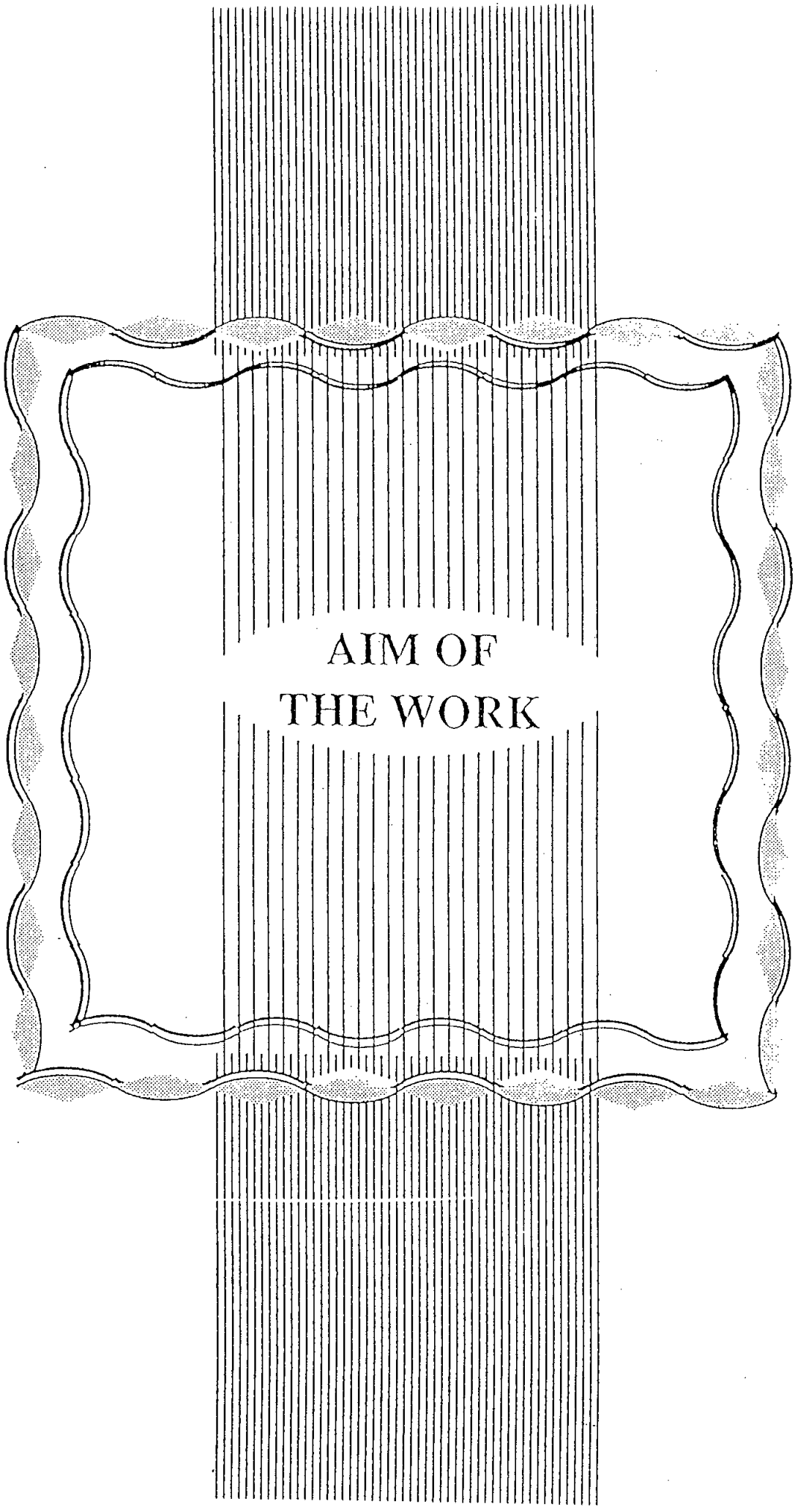
renal failure ***(Kopp et al., 1985; Prickle et al., 1985 and Brenner and Hostetter, 1993).***

Beside the occupational hazards, the use of lead alkyls in petrol, lead pipes for drinking water and lead solders to seal and join copper pipes causes tap water contamination ***(Wedeen, 1988).*** In addition to air, food and water contamination by lead chewing lead paints is a frequent cause of clinical poisoning in children ***(Gourrier et al., 1991 and Yver et al., 1991).***

Several substances are called chelating agents because they bind directly with metal ions to form stable compounds that remove metals by competition with body cells. Because chelated metal is water soluble, it can be excreted readily by the kidney.

By definition, a chelate is a cyclic complex formed between a metal and a compound that contains two or more binding sites ***(Roger and Thomas, 1990).***

There are many metal chelators such as EDTA, BAL, Deferoxamine, Penicillamine and Succiner. Although chelators are generally having specific affinity for a particular metal but sometimes there is non specific binding as well. EDTA is the clinically useful chelating agent for lead and it will also form tight complexes with other metals including the calcium, the cause that explains hypocalcemic tetany after treatment with EDTA ***(Nolan and Shaikh, 1992).***


AIM OF
THE WORK