

# 뉴질랜드의 齒科教育制度

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## STUDY OF THE DENTAL EDUCATIONAL SYSTEMS IN NEW-ZEALAND

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.....> Abstract <.....

Study on the dental educational systems in New-Zealand.

The following results was obtained.

1. Dental faculty system was 5 years course, only one school, Faculty of Dentistry University of Otago in Dunedin, New-Zealand. one class was 40 students.
2. Dental nursing school system was 2 years course and 3 dental nursing school in New-Zealand. (Auckland, Wellington, Christchurch) One class was each 30 students.

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萬名の 都市였다.

그리고 大學村 鄴에 鄴는 南島에 屬하여 있으며 人口 15萬名밖에 안되는 스크트란드風의 保守的인 大學都市 이다.

뉴-질랜드의 教育制度는 9年(國民學校 6年, 中學校 3年)의 義務敎育과 高等學校 3年 그리고 一般大學은 四年制이며 醫科大學은 六年制이고 齒科大學은 五年制이다.

醫科大學은 옥크란드大學校 醫科大學과 오타고大學校 醫科大學이 있으나 齒科大學은 오타고大學校 齒科大學 오직 하나 뿐이다. 一學年定員은 男女 合하여 40名이었다.

齒科教育制度에서 擧는 수 없는 것은 齒科看護學校 制度로서 人口가 적었던 1921年부터 始作하여 지금은 호주·싱가폴·마레시아·후지·사모아·英國等에서 이 制度를 活用 發展시키고 있다.

그래서 이러한 制度를 比較研究하여 報告하는 바이다.

### I. 緒 論

뉴-질랜드는 總人口가 300萬밖에 되지 않으나 領土는 우리 나라의 2倍가량 되며 南北島로 나누어져 있다. 제일 큰 都市는 人口 80萬인 옥크란드이며 다음이 人口 40萬인 크라이스처치이고 首都인 웰링턴은 人口 30

## II. 齒科大學教育制度

五年制로서 1917년에 開校하여 今日까지 約 10000名의 齒科醫學士를 輩出되었고 모든 教育費는 國家가 負擔하며 卒業生에는 거의 모두 國公立病院 保健所 등에서 일하게 된다.

高等學校를 卒業하고 쉽게 大學에 進學할 수 있으나 卒業하기는 힘들고 엄격한 試驗을 거쳐 進級하게 되며 國家試驗을 거쳐 齒科醫師免許를 받게 된다.

大學은 오직 Dunedin에 Otago大學 하나 뿐이고 一年 定員은 40名이었다.

新入生은 每年 2月 1日에 入學하고, 다른 在學生들은 1月 10日 開講하게 되며 學年마다 學年末試驗을 걸쳐서 進級하게 된다.

學年別 學科科目을 보면 다음과 같다.

### The First Year

1. Physics
2. Chemistry
3. Biology
4. Histology and Dental histology
5. Biochemistry
6. Oral Biology

### The Second Year

1. Anatomy
2. Physiology
3. Biochemistry
4. Histology
5. Prosthetic Dentistry
6. Preventive Dentistry

### The Third Year

1. Bacteriology
2. Pathology
3. Operative Dentistry
4. Prosthetic Dentistry(including Dental Materials and Dental Technology)
5. Radiology
6. Preventive Dentistry
7. Orthodontics
8. Pedodontics

### The Fourth Year

1. Oral Surgery (including Exodontics)

2. Surgery and Medicine
3. Oral Pathology
4. Radiology
5. Anesthetics
6. Pharmacology and Therapeutics
7. Operative Dentistry
8. Crown and Bridge work
9. Prosthetic Dentistry
10. Preventive Dentistry
11. Orthodontics
12. Periodontics
13. Pedodontics

### The Fifth Year

1. Operative Dentistry (including Crown and Bridge work and Ceramics)
2. Prosthetic Dentistry
3. Oral Surgery
4. Preventive Dentistry
5. Orthodontics
6. Periodontics
7. Pedodontics
8. Dental Jurisprudence

學科目 內容을 보면 다음과 같다.

**ANATOMY:** including histology, neuroanatomy and gross anatomy of trunk organ system: Gross anatomy of the head and neck, lectures, tutorial or small group instruction, including demonstration and practical work in the dissecting room, anatomy museum and histology laboratory.

**BIOCHEMISTRY:** Chemical composition of the animal body: Biochemistry of digestion and excretion: energetics of the animal body: metabolism and nutrition and practical work.

**PHYSIOLOGY:** elementary general physiology, physiology of blood circulatory, respiratory, alimentary, excretory, endocrine, muscular and nervous system of mammals and man.

**DENTAL TECHNOLOGY:** dental materials and clinical subjects laboratory methods for clinical purposes.

**BIOMATERIALS SCIENCE:** lecture course deals with the constitution, behaviour and properties of the various materials used in dentistry. The lectures are supplemented by laboratory investigation and

both are integrated with Dental Technology course.

**ORAL BIOLOGY:** The topics are: the development and ageing of the face, jaws and dentition: the structure, development and chemistry of dental and oral tissues: certain aspects of pathology which are peculiar to the teeth and jaws, namely plaque, caries, calculus and periodontal disease; oral cysts, fibrous dysplasia and related conditions. The aim of the course is to provide a biological basis for certain aspects of clinical dentistry.

**SOCIAL DENTISTRY:** The purpose of this course is to help students to understand the needs of their patients, to understand the attitudes of individuals and society to health and disease in general and dentistry in particular, and to examine the dentist in community health services. It covers methods of preventing dental disease and maintaining dental health through organised community, national and international and international efforts.

**PROSTHETIC DENTISTRY:** The course covers the principles and practice of prosthetic dentistry including both the laboratory and clinical management of full, single, partial and immediate prostheses.

**MEDICINE AND PHARMACOLOGY:** Lectures in medicine diagnosis, natural history and treatment of medical disorders will be discussed with special reference to those medical diseases which influence dental management and those which may present with oral pathology.

**METHODOLOGY AND STATISTICS:** The course is designed to give students and understanding of scientific method, guidance in the evaluation of the literature, and an introduction to biostatistics. The techniques of effective written and oral communication will be presented

**ORAL MEDICINE AND ORAL SURGERY:** Systematic instruction is given in the principles and practice of anesthesia (local and general): Radiology: minor oral surgery: the extraction of teeth: diagnosis: oral manifestations of systemic diseases: Pre-operative assessment and the management of post-operative complication. include some clinical pathology and clinical practice.

**CONSERVATIVE DENTISTRY:** basic operative procedures for conservation of diseased teeth: use of

related dental materials: clinical practice. basic crown and bridge procedures: advanced treatment of diseased and traumatically injured teeth: clinic practice.

**ORTHODONTICS:** Human variation: Human craniofacial growth: development of the dentition and occlusion: malocclusion, diagnosis and management of malocclusion in general practice.

**PERIODONTICS:** management of periodontal diseases and clinical practice.

**PREVENTIVE DENTISTRY:** Practical application methods of controlling and preventing dental diseases and on the education and motivation of patients nutrition and diet form part of the course. The programme include lectures, seminars and clinical practice.

**CHILDREN'S DENTISTRY:** The objective of the programme is to develop in the student an understanding of children and provide experience in the treatment of their dental problems. Clinical practice is supplemented by lectures and seminars.

科別 擔當教授의 現況은 다음과 같다.

Dean:

professor J. LeB. Warren BDS (NZ)  
MDS (Melb), FASRCS (Edin), FRACDS.

Department of Oral Medicine and Oral Surgery

Professor:

A.D. Macalister D.D.S. (NZ)  
FDSRCS (Eng), FRACDS, FICD (Professor since 1969)

Associate Professor:

K.I. Donaldson BDS (Syd)  
FDSRCS (Eng), FRACDS, FICD

J.K. Burclay BDS (Birm)  
MDS (Otago), FRACDS, LDSRCS (Eng)

Senior lecturer:

J.L. Edwards BDS (Otago)  
FDSRCS (Eng), FRACDS (Hospital department)

Lecturer:

K. MacK. Hunter MDS (Otago)  
Department of Conservative Dentistry

Professor:

E.E.J. Kirk MDS (NZ)  
FDSRCS (Eng), FRACDS

Associate professor:

H.S. Gray MDS (NZ). D.D.S. (Orago)

FRACDS

Senior lecturers:

J.C. Rodda, MDS. (Otago), FRACDS  
A.N.S. Stokes, BDS (NZ) MSC (Lond)  
B.G. Tidmarsh BDS (NZ), FRACDS

Lectures:

A. Ackerman B.D.S. (Otago)  
J.B. Robertson B.D.S. (otago) MSC (Lond)  
D.J. Lovell B.D.S. (Otago) (parttime)  
E.F. Simpson B.D.S. (Otago) (parttime)

Technical officer:

A. Barber and Bist

Department of Prosthetic Dentistry

professor:

J.W. Johnston D.D.S. (NZ) Diped (Otago)

Associate Professor (Dental Technology)

H.D. Bliss, MD.S. (Otago)  
LRDSRCS (Eng)

Senior Lecturer:

J.F. Burton MD.S. (Otago)

Lecturers: J.L. Smith B.D.S. (Otago)

appointment pending

Assistant Lecturer:

B.W. Roberts, B.D.S. (Otago)

Technical officers:

V.R.B. Saggs  
R.E. McCrack  
W.C. Kirk Fbist Faisdt

Department of Orthodontics:

Professor:

M.R. Kean, MD.S. (NZ)

FRACDS

Senior Lecturer:

E.M. Hariness, BDS (NZ) MSc (Wales)  
Dorth RCS (Eng), FRACDS

Lecturers:

D.P.J. Mc Clea BchD (Leeds) Dorth RCS  
FDSRCS (Edin)  
R.A. Hocevar ABDMD (Harvard)

Department of Periodontics

Associate professor and Head of Department:

A.J. Laws, MD.S. (NZ) FRACDS

Senior Lecturer:

Angela R.C. Pack BDS (Lond)

FDSRCS (Eng), LDSRCS (Eng)

Lecturer:

D.W. Hoiborow, BDS (Otago)  
FDSRCS (Edin)

Department of Preventive and Social Dentistry

Professor: D.J. Beck

MSc (Roch), D.D.S. (Otago)

FRACDS

Senior Lecturers:

D.H. McClymont, B.D.S. (NZ), DDPH (Otago)  
FRACDS

R.H. Brown D.D.S. (Otago)

R.M. King, BDS (NZ) MS (Nich)

FRACDS (parttime)

Lecturer: (Nutrition)

Maria E. Thomson Staatexamen (Nurnberg)

DIPHSC (parttime)

Department of Hospital Dentistry

Senior Lecturer and Head of Department (Senior  
Dental Surgeon)

J.L. Edwards BDS (Otago)

FDSRCS (Eng), FRACDS

Lecturer:

D.N. Thorburn BDS (Otago)

FDSRCS (Eng)

Dental House Sergeants: two appointed annually

Department of Dental Sciences

Professor: A.C. Smilie MD.S. (NZ) Ph.D. (Otago)

Senior Lectures:

C.P.M. Geary, BDS (NZ) PHD (Otago)

FRACDS

J.A.A. Hood, BSc MD.S. (Otago)

FRACDS

Lecturer: M.D. McMillan, MDS (Otago)

Technical Officer: Nanette G. Taylor

ANZist

學科別 代表的인 參考書는 다음과 같다.

TEXTBOOKS:

1. Physics for Life Sciences (McGraw-Hill, 1973)
2. Garrett: chemistry, A study of Matter, 2nd. edn. (Wiley, 1972)
3. Mitchell G.A.G.: Basic Anatomy 2nd. edn. (Livingston, 1967)
4. Scott, J.H.: Dental Anatomy, 7th. Edn. (Livingstone, 1974)

5. Vander et al.: Human Physiology (McGraw-Hill, 1975)
6. White: Principles of Biochemistry, 5th. edn. (McGraw-Hill, 1973)
7. Bloom, W.: Textbook of Histology 9th. edn. (Saunders, 1975)
8. Griffin, C.J.: The Temporomandibular Joint Syndrome. (Karger, 1975)
9. Sicher, H.: Orban's Oral Histology and Embryology (C.V. Mosby, 1972)
10. Dunning, J.M.: Principles of Dental Public Health (Harvard U.P., 1970)
11. Nolte, W.A.: Oral Microbiology, 2nd. edn. (Mosby, 1973)
12. Walter, J.B.: Principles of Pathology for Dental Students. (Churchill, 1975)
13. Grossman, L.I.: Endodontic Practice, 8th. edn. (Lea & Febiger, 1974)
14. Schultz, L.C.: Operative Dentistry. (Lea & Febiger, 1966)
15. Langland and Sippy: Textbook of Dental Radiology. (Charles Thomas, 1963)
16. Roberts, D.H.: Local Analgesia in Dentistry. (1st. Ed. Wright, 1970)
17. Howe, G.L.: Extraction of Teeth. (2nd. ed. Wright, 1970)
18. Schafer, W.G.: Oral Pathology. (Saunders, 1974)
19. Howe, G.L.: Minor Oral Surgery. (Wright, 1971)
20. Killey, H.C.: Fracture of the Mandible. (Wright, 1971)
21. Moore, J.R.: Principles of Oral Surgery. (Pergamon, 1965)
22. Kay, L.W.: Drugs in Dentistry. (Wright, 1971)
23. Johnston, J.F.: Modern practice in Crown & Bridge Prosthodontics, (Saunders, 1965)
24. Osborne, J.: Partial Dentures. (Blackwell, 1974)
25. Boucher, C.O.: Prosthodontic Treatment for Edentulous Patients, (Mosby, 1975)
26. Moyers, R.E.: Handbook of Orthodontics for Student and General Practitioner, (year book pub., 1973)
27. Orban, B.J.: Periodontics, (Mosby, 1973)
28. McDonald, R.E.: Dentistry for the Child and Adolescent, (Mosby, 1974)
29. Johnston, J.F.: Modern Practice in Dental Ceramics, (Saunders, 1976)
30. Killey, H.C.: The Impacted Wisdom To th. (Livingstone, 1975)
31. Killey, H.C.: Benign Cystic lesions of the Jaw, (Livingstone, 1972)

一二年은 Basic Dental Sciences를 하게 되며 三四學年은 臨床基礎와 臨床科目등을 모두 끝내고 五學年은 Intern Course로서 group (6-5名)別로 各科를 돌면서

教授의 指導下에서 患者를 보고 있었다.

卒業試驗에 合格하게 되면 齒醫學士(B.D.S.: Degree of Bachelor of Dental Surgery)를 받게 된다.

### 齒醫學碩士過程

(M.D.S.: Degree of master of Dental Surgery)

뉴질랜드에서 齒醫學士를 받은 사람이 入學할 있으며 二年制로서 大學院에서 full time 修了하고 科에서 Training을 받아야만 認定된다.

(least two academic years(80 weeks) of full time Study and Research)

두번의 筆記試驗을 보거나 教授가 認定하면 口頭試이나 臨床試驗으로 代身할 수 있다.

### 齒醫學博士過程

(D.D.S.: Doctor of Dental science)

이는 原則적으로 知識과 臨床研究를 目的으로 하 것이며 Otago大學校에서 齒醫學士를 取得한 사람으로 五年以上 大學에서 研究하였어야 하며 3回以上の 試을 거쳐 論文을 提出하게 되며 大學院委員會에서 審에 通過되어야 齒醫學博士를 받게 되는데 이는 대 Otago大學校 齒科大學教授資格이 認定되는 것이다.

## II. 齒科看護學制度

뉴질랜드에서 人口가 적었든 1921년부터 이 齒科講學校制度를 처음 始作하였고 그 目的은 齒科醫師는 그 들어나는 兒童(2½年-13年)을 다 治療할 수 으므로 齒科醫師의 指導下에 齒科看護員으로 하여금 齒의 拔去와 充填 그리고 弗索塗布, 口腔清掃와 口腔生教育(칫솔使用法)등을 實施한다.

뉴질랜드의 齒科看護學校는 三大都市에 一個式있 印, 옥크랜드(Auckland), 크라이스처치(Christchurch) 그리고 首都인 웰링턴(wellington)에 있으며 한 年이 30名式으로 定員이 되어 있으며 全國에 約 1000의 齒科看護員이 學校齒科와 保健所 등에서 어린이를 治療하게 된다.

學費는 모두 國家가 負擔하고 每月 約 200弗(U.S. 程度)의 獎學金을 支給하고 모두 寄宿舍에 起居하고 業後에는 義動的으로 國公立醫療機關에서 勤務하게 다.

齒科看護學校는 二年制로서 講義와 實習을 하게 된 敎科目과 內容은 다음과 같다.

part I: Pre-clinical (10 months)

part II: clinical (14 months)

## Part I Pre-clinical period (10 months)

mainly operative technique work, chairside assisting and some poster work

lectures: Dental Anatomy, Histology, General Anatomy of head and neck, General Histology, General Nursing, Hygiene and Chair side Assisting, General Pathology, Bacteriology, Operative Techniques and Use and care of instruments.

## Part II Clinical period (14 months)

practical (clinical) work and lectures.

Practical Training: Curative and preventive work on child patients including topical application of fluoride and dental health education at the chair side.

extraction of deciduous teeth under local infiltration

Lectures: Dental Surgery and Pathology, Preventive Dentistry, Orthodontic, Local Anesthesia and Extractions, Children's Dentistry, Child Management, etc.

入學하여 2년이 經過된 다음 最終試驗을 보는데 口頭로 理論로 臨床實習을 거쳐 合格하면 卒業을 하고 齒科看護員免許를 取得하게 된다.

### III. 總括 및 考按

뉴질랜드에서 五年制 齒科大學을 卒業한 齒科醫師가 約 1000名이고 齒科看護員도 約 1000名으로서 人口 3000名에 齒科醫師 1名과 齒科看護員 一名이 治療하게 된다. 오타고大學校 齒科大學病院을 보면 口腔外科에 口腔病理科와 齒科放射線科가 포함되어 있으며 使存科에 齒周科와 小兒齒科가 함께 있고 補綴科에 교정과가 포함되어 있으며 豫防齒科가 診療科로서 病院에 設置되어 있었다.

五學年 齒科大學生들은 各科別로 돌면서 直接患者를 敎授의 指導下에서 治療를 하고 있었으며 어려운 경우는 인턴 레지던트, 敎授들이 取級하고 있었다.

싱가폴大學校 齒科大學과 마라야大學校 齒科大學은 英國의 敎育制度를 받고 있지만 齒科大學은 四年制로서 一學年은 基礎醫學을 하고 二學年은 齒科基礎醫學을 하고 三四學年은 臨床醫學을 하고 四學年은 Intern Course로서 各科를 돌면서 患者를 治療하고 있었다.

싱가폴, 마라야 大學病院(齒科)은 學校側의 敎授들과 政府(보사부)측의 치과의사들과 함께 있으면서 患者를 自己들 것만 取級하고 있었다.

齒科大學病院 臨床科로서는 保存科, 補綴科, 小兒齒科, 口腔外科學, 豫防齒科와 口腔病理科가 있었다.

齒科看護學校는 1921년에 뉴질랜드에서 처음 始作하여 호주, 싱가포르, 마세시아, 英國, 캐나다 등에서 發展되어 왔으며, 호주(Australia)에서는 成長期에 있어서 齒牙齶蝕病 發生은 特別히 國民學校兒童에 있어서 크게 나타나기 때문에 그 對策으로 發展된 것이 齒科治療士(Dental Therapist)와 齒科看護員(Dental nurse) 制度를 活用하고 있다.

싱가폴에서는 齒科看護員과 齒科治療士制度가 있는데 齒科看護員은 國民學校兒童을 治療하고 齒治療士는 中學生과 高等學生(13~18歲)을 齒科醫師의 指導下에서 治療한다.

마세시아에서는 齒科看護員制度和 齒科技工士(Dental Technicians) 그리고 齒科補助員(Dental Smgery Assistants)가 있는데 齒科看護員制度는 他國들과 同一하나 齒科技工士와 補助員은 單獨으로 治療를 할 수 없고 오직 齒科醫師를 補助할 뿐이었다.

### IV. 結 論

뉴질랜드의 齒科敎育制度를 研究하여 다음과 같은 結論을 얻었다.

1) 뉴질랜드의 齒科大學敎育制度는 五年制로서 오타고大學校 齒科大學 一個校로서 一學年 定員은 四十名이었다.

2) 齒科看護學校制度는 二年制로서 三個較(우크란드, 웰링턴, 크라이스처치)가 있었으며 一學年 定員은 各校마다 三十名씩이었다.

### V. 參 考 文 獻

- 1) The University of Otago Calander 1976.
- 2) The University of Sydney Calander 1976.
- 3) The University of Sydney Dentistry handbook 1976.
- 4) Universiti malaya, Kalendar 1976—1977.
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