



**C. B. ALEXANDER PRESBYTERIAN AGRICULTURAL  
COLLEGE, TOCAL, PATERSON — PROSPECTUS**

# THE COLLEGE COUNCIL

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Banker

**ACTING PRINCIPAL:** G. C. McFARLANE, B.Ec.



G. C. McFarlane, B.Ec.  
Acting Principal

#### **STAFF**

Agricultural Economics Farm Management	G. C. McFarlane, B.Ec.
Beef Cattle Husbandry Horse Husbandry	B. W. Urquhart, H.D.A.
Dairy Husbandry Pig Husbandry Poultry Husbandry	R. B. Bate, H.D.A.
Farm Works and Machinery	David A. Wilson
Agronomy	Max Bolte, B.Sc.(Agr.)

#### **PART-TIME AND VISITING LECTURERS**

Animal Science	A. R. McTackett, B.V.Sc.(Syd.), M.V.Sc.(Qld.)
Elementary Surveying Farm Maintenance	J. M. Monteath, M.I.S.(Aust.), M.A.P.I.
Law for the Man on the Land	Edward A. Hunt, Solicitor
Public Relations	W. B. Bailey-Tart, B.Sc. Agr., H.D.A., M.P.R.I.A.
Farm Welding	Newcastle Technical College

Additional lectures on special aspects of the Course are delivered by visiting lecturers each year.

## HISTORY OF LAND AND COLLEGE

Situated in the Hunter Valley among some of the nation's most historic grazing properties, the College stands prominently on an original grant of land of 3,300 acres made to James Philips Webber in 1826. The lovely Georgian house, which will be admired by generations of students, was built by Felix Wilson when he acquired Tocal in 1839.

The heritage of Hereford stud breeding reached its peak through the Reynolds family and was carried on with distinction by Charles Boyd Alexander.

A noted pastoralist, Charles Alexander, with the help of his nieces the Misses Myrtle and Rita Curtis planned that his estate and the property should be used for the training of young men for a life on the land.

Ultimately, through his Trustees and the Equity Court it was made available to the Presbyterian Church for the establishment of an Agricultural College.

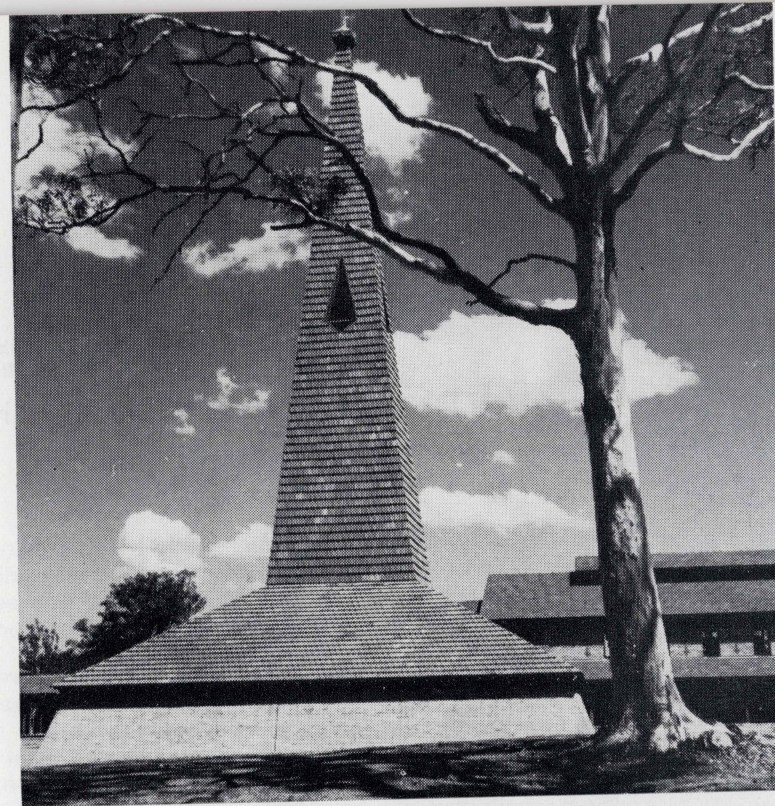
Further, it was found that 98 per cent of those entering farming did so without any special full-time vocational training.

The Council accepted the fact that Australia had entered its most exciting and vigorous phase of pastoral and agricultural development, embracing almost revolutionary concepts of pasture improvement and stock husbandry in which management training was imperative and rapidly assuming greater importance than ever previously recognised.

The urgency with which the task was approached was emphasised by the then Prime Minister, the Right Honourable, Sir Robert Menzies, K.T., C.H., Q.C., M.P., who officially opened the College on 6th November, 1965.

"It is indeed staggering," Sir Robert said, "that within two years of the order granting the Alexander benefaction to the Presbyterian Church the buildings were sufficiently advanced in March, 1965, to accommodate the first 15 students and that within another year the College will have admitted a second group making in all 60 students in residence for training that year" — 1966.

In fact the College will have 90 students in residence in 1967. The College lands in all comprise about 5,000 acres having a frontage of over three miles to the Paterson river and extends westward over the hills for approximately 5 miles. An air strip suitable for light aircraft has been constructed several miles to the west of the College buildings.



Everything about the College buildings is designed in the spirit of colonial simplicity which distinguishes the best architecture of the district.

Much emphasis has been laid on traditional skills and hand-work in the structures. This can be seen in the timber styles supporting the cloister and verandah roofs.

The College was built under the supervision and according to the designs of the architects, Messrs. Ian McKay and Philip Cox. It is interesting to note that they gained the distinguished honour of receiving the 1965 Sir John Sulman Architectural Award for the building.

In discussing the College buildings one of Sydney's leading Architects uses these words:

"The merit of the College is in the highly developed skill in the use of bricks, tile roofs, timber construction and to some degree concrete, all commonplace materials, which have been used in a most thoughtful and uncommon way to produce interest and even excitement. This is particularly evident in the virtuosity of the timber-constructed spire."



Charles Boyd Alexander.  
from an oil painting

## THE BENEFACTOR

Charles Boyd Alexander was born at Ballarat, Victoria, in 1864, a son of Scottish parents who came to Australia ten years earlier.

In 1904, he moved to Bulga, near Singleton, with his mother and family. During the following years, he acquired extensive areas of grazing and farming lands in the district.

Charles Alexander bought Tocal in 1927 and lived in the famous homestead until his death in 1947. It was while living at Tocal that he drew up his Will containing provisions which ultimately made possible the establishment of the C. B. Alexander College by the Presbyterian Church.



Historic homestead of Tocal.



## THE BUILDINGS AND STUDENTS' FACILITIES

The buildings of the College have been set on a hilltop spur with a commanding view of the river. They form a series of courts, linked by galleries and cloisters with the Chapel in the Great Quadrangle forming the pivot of the whole design.

The quadrangle, open to the northwest, commands a sweeping view across the valley to Old Tocal and the hills beyond. Turning in off the highway, the drive sweeps towards the front of the College. Here the Assembly Hall of magnificent proportions and the foyer adjoin the spacious entrance vestibule.

Grouped to satisfy aesthetic and efficiency criteria, visitors can quickly inspect the lecture rooms, science laboratory, secretarial and staff rooms, common rooms for staff and students, the dining room with its fine view over the valley, the kitchen with all modern labour-saving devices designed to cater for the ultimate complement of 120 students. Each student is provided with his own study bedroom.

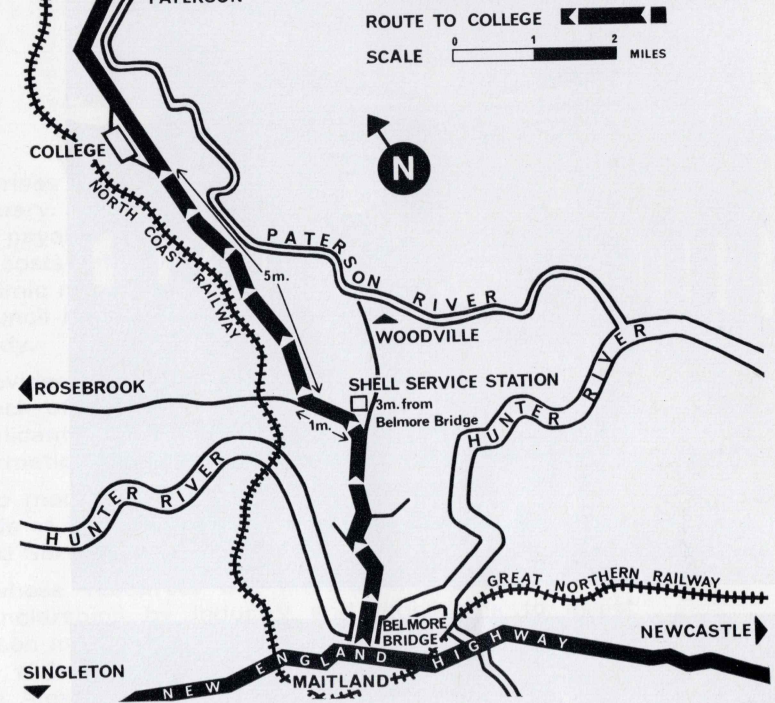
The Principal's residence and that of the Vice-Principal incorporate the constant colonial verandah architecture.





## AIMS OF THE COLLEGE

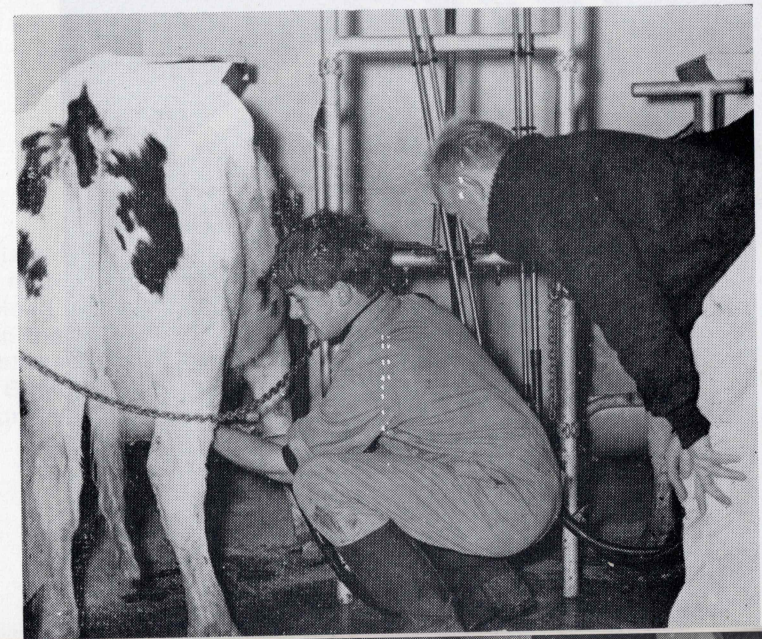
Our purpose is to impart scientific information and to provide training in management of pastoral properties — the emphasis being on cattle husbandry — and a sound working knowledge of agricultural economics. Such training must be designed to develop an ability to reason on technical and managerial problems, to use initiative and so make intelligent decisions. Further it is expected that the total life of the College will be such as to provide an education for young men in the widest possible sense so that they will learn to think critically, and develop the ability to bring sound judgment to bear on any given situation. It is hoped that on completion of the course a young man will be able to take his place readily in the complex farming industry of today, and also will make a distinctive contribution to the wider community as a responsible Christian citizen.

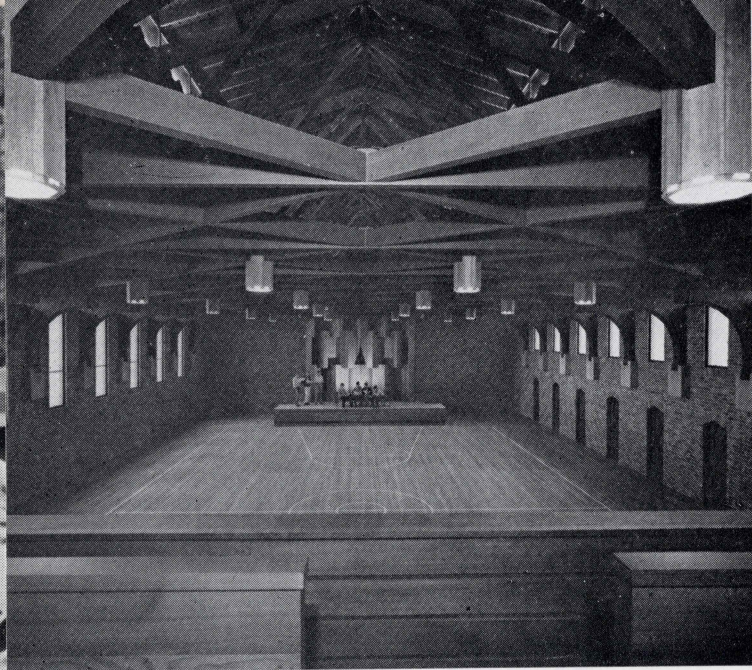


## FARM ACTIVITIES

Throughout the course a balance is preserved between the lecture programme, demonstrations and practical training. Each student actively participates in every aspect of farm routine and the overall development of the property including care and handling of livestock, horse-breaking and riding, operation of farm machinery, irrigation practices, fencing, yard-building, erection of farm buildings, cropping (with particular reference to fodder crops), pasture improvement, fodder conservation, land clearing, re-afforestation and allied activities.

Students are expected also, to gain further practical experience on approved properties for specified periods during College vacations.





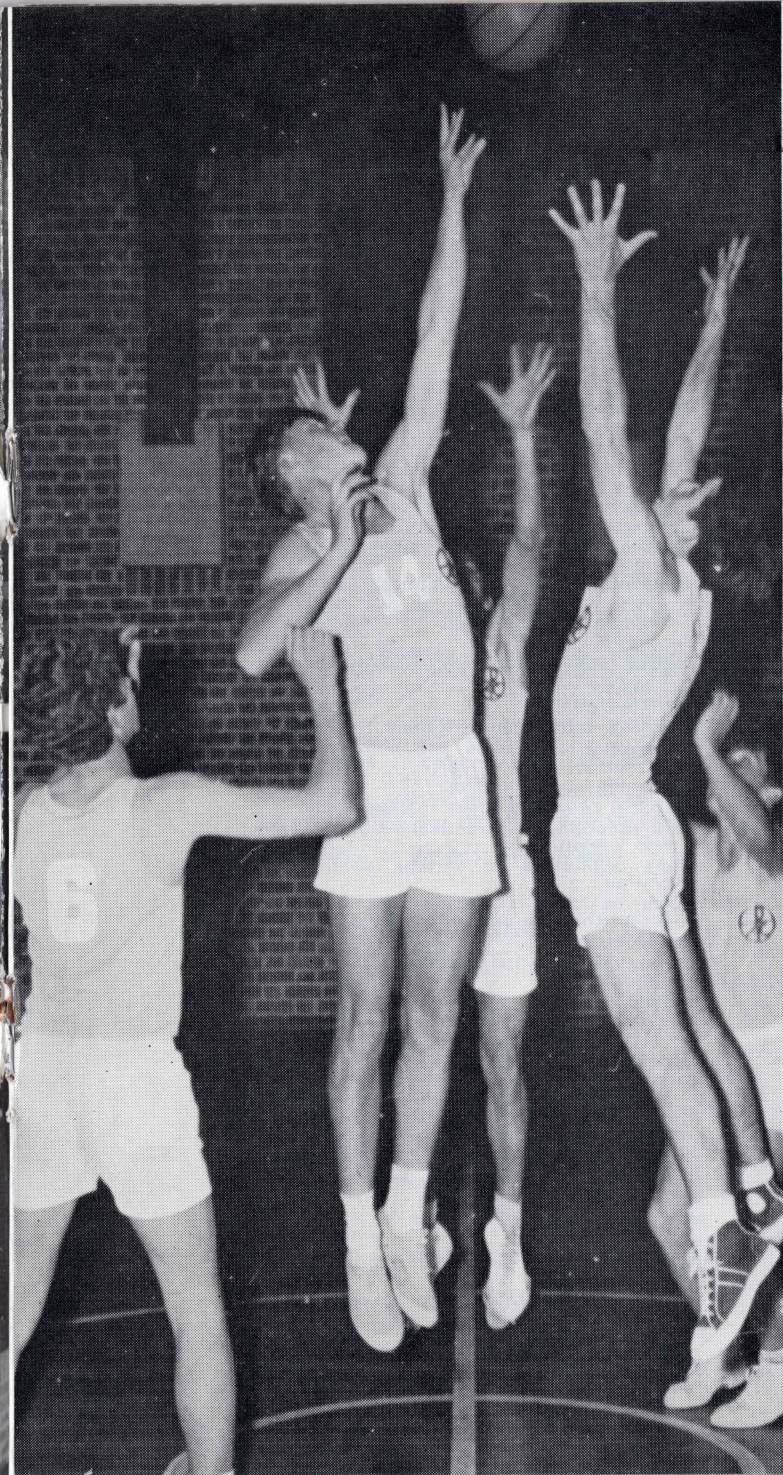
## BROAD OUTLINE OF THE COURSE CONDITIONS

1. Introductory Chemistry and Physics
2. Plant and Animal Biology
3. Plant and Soil Science
4. Animal Science
5. Production and Marketing of Livestock and Livestock Products
6. Economics and Management
7. Mechanization and Construction
8. Climatology
9. Forestry
10. Laws and Regulations on Production and Marketing
11. Elementary Surveying and Farm Maintenance
12. Training for Citizenship



A requirement, under the terms of the Benefaction, is that students be of Protestant Faith. The minimum educational requirement for admission is the New South Wales School Certificate or its equivalent in other States. Students should be at least sixteen years of age at entry.

Diplomas, or Diplomas with Honours, will be awarded to students who complete the full course with success.



## TERMS

The year comprises three terms and commences on the first Monday in February. The course is for two years and the fees are \$350 per term payable one term in advance—total \$1,050 per annum. Rising costs and providing scholarships has made this charge an economic necessity, as to the time of publication of this syllabus the Council has had no Governmental or private financial support or subsidy.

The Council provides a limited number of Bursaries for students who, through lack of means, would be unable otherwise to take the course. Applicants for Bursaries should write to the Principal for further information.

Provision is also made for the admission of a limited number of nominated Wards of Legacy, and some preference also is given to sons of Returned Servicemen and Women.

The Council, whose resources are limited, will encourage the granting of Scholarships by industry and individuals to assist students. A person interested in sharing in our enterprise, may, in the will, make a bequest to the Presbyterian Church for the purposes of the Alexander Presbyterian Agricultural College, and thus provide for College expansion and development.

## SPORT

The Council realises the importance of active sport in the development of young manhood and has at considerable cost, built a first class combined cricket, football ground and athletic field in close proximity to the College. Two fine stabilised-clay tennis courts have been established and the Assembly Hall has been built to accommodate a Basketball Court. Competitive sport is taking place and will be encouraged.

# CURRICULUM

## 1. INTRODUCTORY CHEMISTRY AND PHYSICS

Revision as required of certain sections of the general science course covered at Secondary School level.

## 2. BIOLOGY

Comparative study of living things.

**Plant Biology:**

Anatomy and physiology of seed plants.

Plant nutrition.

Plant reproduction.

Growth and development of plants.

**Animal Biology:**

Anatomy and physiology of animals.

Animal nutrition.

Animal reproduction.

Growth and development of animals.

**Ecology.**

**Evolution, heredity and breeding.**

**Entomology — identification, life history and control of insect pests — beneficial insects.**

**Microbiology.**

**Dairy Science.**

## 3. SOIL SCIENCE

**Soil Formation.**

**Soil Types.**

**Soil Physics.**

Physical properties of soil.

Mechanical composition of soil.

The influences of temperature, water, aeration and drainage.

Colloids of the soil.

**Soil Chemistry.**

Sources of nutrients.

Primary minerals in the soil.

Acidity and alkalinity.

Organic matter.

The roles of calcium, magnesium, potassium, iron, manganese, sulphur and various minor elements in plant growth.

Plant response to fertilisers.

The nitrogen cycle.

**Soil erosion, and depletion of soil fertility.**

## 4. PLANT SCIENCE

**Plant species.**

**Crop husbandry.**

**Pasture husbandry.**

**Protection of plants against insects, pests and diseases.**

**Weeds and their control.**

## 5. ANIMAL SCIENCE

**Animal types and breeds.**

**Animal care and husbandry.**

**Types of commercial livestock enterprises.**

**Pure bred livestock production.**

**Livestock judging.**

**Slaughtering and butchering.**

**Livestock diseases and accidents.**

**Treatment of disease.**

**Parasitology.**

**Poisoning.**

## 6. PRODUCTION AND MARKETING OF LIVESTOCK AND LIVESTOCK PRODUCTS

**Beef Cattle.**

Introduction to the beef cattle industry.

Characteristics of beef cattle — type and faults.

Breeds of beef cattle.

Management of commercial herds — types of enterprises — watering — yards — fences — handling — mating — calving — mothering.

Management of stud cattle.

Identification of cattle — commercial and stud cattle.

Dentition of cattle.

Estimation of live and dressed weights.

Markets, etc.

Judging.

Slaughtering.

Carcase appraisal.

**Dairy cattle and Dairying.**

Origin, classification of cattle, terms and definitions.

Dairy type and selection of stock.

Management of the cow and herd.

Mating systems — including Artificial Insemination.

Identification — branding and tattooing.

Breeds — Societies and Herdbooks.

Dehorning.

Calf rearing.

Herd Recording.

**Breeding —** Sire survey, Grading up, selection.

**Feeding —** Nutrition.

**Records —** Breeding and management.

**Diseases affecting dairy cattle (specific).**

**Composition of milk —** chemical and physical properties.

**Structure of the udder —** milk secretion and ejection.

**Principles of mechanical milking.**

**Milking machines.**

**Factors affecting quality and quantity of milk.**

**Construction of dairy buildings.**

**Production of quality milk and cream —** hygiene and cleaning.

**Separation.**

**Testing milk and cream —** butterfat and S.N.F.

**Demonstrations.**

**Handling and milking —** dairy hygiene.

**Recognition of breeds and points of conformation —** Judging.

**Dehorning and branding.**

**Practical farm and stock management.**

**Herd recording —** practical testing of milk and cream.

**Films applicable to various sections of course.**

**Visits to local farms and manufacturing establishments and shows.**

**Pig Husbandry.**

Origin, classification of breeds, terms and definitions.

**Breeds.**

**Breeding —** selection of stock — systems of breeding.

**Housing.**

**Care and management —** sow, boar, replacement of stock, weaning, castration, sale of stock.

Identification of pigs.

**Feeding.**

**Carcase quality.**

**Slaughtering and marketing.**

**Record keeping.**

**Demonstrations.**

**Recognition of breeds and points of conformation.**

**Identifying pigs and record keeping.**

**Feeding —** foodstuffs, preparation of rations.

**Management of stock —** boars, sows, young stock.

## **Poultry.**

Types and breeds of poultry — breeding for egg production and poultry meat production.

Hatching and rearing pullets and poultry for meat.

Principles of nutrition and feeding.

Principles of housing.

Health and hygiene in poultry production.

Culling.

Operation and maintenance of equipment — incubators, brooders, feeding and watering equipment.

Grading, packing, processing and marketing of eggs and broilers.

## **Horses.**

Horse population and distribution.

Horse types — ponies, light horses, draught horses.

Breeds of horses.

Animal structure and function as related to horses.

Parts of the horse — conformation — faults.

Description of horses — colour and marking.

Care and attention — grooming, saddling, watering, feeding, general care, saddle galls, sore backs and their causes and remedies.

Breeding — practices, problems, breeding cycle, gestation, foaling.

Health and hygiene — siting of stables, drainage and fittings.

Dentition — ageing and teeth structure.

Horse breaking — methods, approach and restraint.

Importance of the foot and shoeing.

## **7. ECONOMICS AND MANAGEMENT**

Land Use.

Land Tenure.

Farm records and their analysis.

Demand, supply and market price under pure competition.

Consumers' indifference curves.

Cost theory.

Marginal analysis.

Production economics.

Budgeting, programming and gross margin analysis.

Economics of soil, water and fodder conservation.

Economic strategy to meet risk and uncertainty.

"Efficiency" in agricultural production.

Marketing farm products — price theory, marketing Boards and Co-operatives.

Farm finance and investment.

Protection and subsidies in agriculture.

Agricultural policies and prospects.

Farm work and method study.

## **Getting started in farming.**

Farmers' organisations and their role in policy formation and price administration.

## **8. MECHANIZATION AND CONSTRUCTION**

### **Mechanization.**

Power sources — electricity, diesel engines, internal combustion engines, vapourising fuel engines.

Principles of power transmission.

Engine systems — cooling, ignition, fuel, lubrication.

Principles of electric motors.

Principles of refrigeration.

Principles of irrigation engineering — water pumping, pumps, irrigation plant.

Engineering principles in the design of tractors and implements.

The application of engineering principles in the use of particular types of power sources, implements or equipment for particular farm operations — hydraulics, three-point linkage, belts, pulleys.

Care and maintenance of tractors, vehicles, machinery and equipment.

Safety precautions in the use of tractors and implements.

### **Metalwork.**

Care and safety in the use of machines, tools, welding equipment and gas cutting equipment.

Types and uses of tools and equipment.

Welding and cutting — oxy-acetylene welding, electric welding, flame cutting, hard surfacing.

Soldering and simple plumbing.

### **Woodwork and Building Construction.**

Care and safety in the use of tools.

Types and uses of tools and woodworking machines.

Uses for the different types of timber and other building materials.

Timber treatment.

Design and construction of farm — buildings and fences.

Principles of drainage for farm buildings.

Methods of vermin proofing.

Construction of gates and ramps.

Construction of stock watering facilities.

## **9. ELEMENTARY SURVEYING AND FARM MAINTENANCE**

### **General.**

The nature of survey marks.

How to run a fence line.

Laying out of acreage.

Squaring out a building.

Roadway construction.

Elementary surveying.

### **Siting.**

Choice and laying of materials.

Methods of construction.

Culvert construction.

### **Drainage.**

Principles of drainage for roadways and buildings.

Property drainage.

Methods of drainage.

Laying out contour drains.

Dam construction.

Grading and levelling land.

Earth movement methods.

Where to go for assistance.

Property planning and property law.

Property maps — what types of maps are available and where to obtain them (air photos, aeronautical maps).

Property layout.

Property titles and restrictions on titles.

## **10. CLIMATOLOGY**

Climatic influences on plant and animal production.

Climatic risk and rainfall variability.

The principles of water storage and irrigation as means of modifying the influence of climatic factors.

## **11. FORESTRY**

Uses for trees on farming and grazing properties.

Types of useful trees.

Husbandry of trees.

Commercial development of trees for timber.

## **12. LAWS AND REGULATIONS RELATING TO THE PRODUCTION AND MARKETING OF FARM PRODUCTS**

Laws relating to land tenure.

Marketing acts and regulations.

Water Supplies Act.

Co-operation Acts.

Laws relating to agriculture generally.

Laws relating to the dairy industry.

Laws relating to the beef cattle industry.

## **13. TRAINING FOR CITIZENSHIP**

To provide leadership in the Christian Faith, Chapel services are held each Sunday evening and there is a short devotional period each evening on week days. Students are encouraged to participate in discussions, study groups and debates on important moral, social and religious questions.



## A MESSAGE TO AUSTRALIANS

The College Council believes that it is undertaking a cause of national importance in providing training for Australian young men to fit them for their vocation on the land. To accomplish this, it decided to build substantially well, as can be seen, and—such was the need—with great speed and energy. With some pride we announced that within four years of the granting of this benefaction by the Equity Court the College will have 90 students in residence for training.

To accomplish this achievement the Council has expended its capital and now for sustenance and growth it depends for finance on three things:—

Firstly, students' fees.

Secondly, profitability of its farming enterprises — dairy and beef, and;

Thirdly, with assistance it can attract from Governmental sources, private industry or individual benefactions.

First, students' fees — Giving bursaries, as the Council does, does not cover normal running costs — secondly, profitability of the enterprises must be affected by seasonal conditions and from the fact that farm development also must be associated with student training which affects the financial return. Thirdly, the College, as it develops, must demonstrate through its work with the students that there is value to the nation in the enterprise before Governmental help is likely to be forthcoming. Industry particularly associated with the land, can assist by financing bursaries, underwriting a particular phase of training and thus reduce the financial burden of the Council.

Private benefactors are invited to help financially or to remember the College in the Will or Codicil.

The first can be done by a cheque to the Presbyterian Church of New South Wales for the College building fund which attracts an income tax concession and, furthermore, a bequest to the Presbyterian Church of New South Wales for the benefit of the C. B. Alexander Presbyterian Agricultural College would be a suitable form to be used in a Will.

Respectfully, it is suggested that a bequest to the College by a benefactor would be a practical exercising of charity and useful giving, and to any person interested, we invite inquiry and inspection of the College at "Tocal". In this way, the benefactor may help the College Council in its self-imposed task in training young Australians to be — as our motto suggests — Better Farmers and Better Men.



