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COMMONWEALTH OF AUSTRALIA.

PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS

R E P O R T

Relating to the Proposed

Erection of a

DAIRY RESEARCH LABORATORY

at

HIGHETT, VICTORIA.

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COMMONWEALTH OF AUSTRALIA

THE PARLIAMENTARY STANDING COMMITTEE ON PUBLIC WORKS.

DAIRY RESEARCH LABORATORY, HIGHETT, VICTORIA.

R E P O R T.

The Parliamentary Standing Committee on Public Works, to which the House of Representatives referred for investigation and report the question of the proposed erection of a building at Highett, Victoria, for a Dairy Research Laboratory, has the honour to report as follows:-

SECTION I - INTRODUCTION.

ORIGINAL ACTIVITIES.

1. The establishment of the Dairy Research Section was one of the earliest projects considered by the Executive Committee of the C.S.I.R. shortly after the foundation of that body in 1926, and it was recommended that there should be a Dairy Research Institute.
2. Prior to 1928 this suggestion had been discussed at some length with the State Departments of Agriculture, and the proposals of C.S.I.R. for dairy research were the subject of discussion by the Standing Committee on Agriculture. That Committee accordingly supported the suggestion that the C.S.I.R. should undertake research on problems affecting the dairy industry.
3. The State Departments of Agriculture have been concerned with the dairying industry from the very earliest times, particularly in connection with quality of production, nutrition, hygiene, and general dairy practice.
4. In the early days of the C.S.I.R. an agreement was made with the States that the C.S.I.R., in all aspects of its research programme, would deal principally with the more fundamental long-range problems of a regional rather than of a local character. A great deal of very detailed study was carried out in connection with certain diseases of dairy cattle, and much has been accomplished

in relation to closely associated plant and animal problems which have their influence on dairy production on the farm.

5. The Dairy Research Section deals specifically with problems which arise in the industrial rather than the agricultural end of the industry: it is concerned with the products rather than with the production, and many difficulties are encountered by the scientists handling this research.

6. Very little progress was made after the first steps were taken in 1928, until the last war and post-war period, the main contributions resulting from the work of Dr. W.J. Wiley, the present Commonwealth Dairy Expert.

THE WAR PROBLEMS.

7. The war brought a rapid increase in the number of problems calling for investigation, and the Dairy Research Section was able to anticipate to some extent the major difficulties which arose in the dairy industry as a result of the war. The staff of the Section was augmented during the war, and, since that period, has been further increased as suitable scientists became available.

SECTION II - THE PRESENT PROPOSAL.

LABORATORY ACCOMMODATION.

8. During the war the officers of the Dairy Research Section were provided with accommodation in the Division of Industrial Chemistry at Fishermen's Bend. After the war it became necessary to plan for special accommodation for the Dairy Research Section, not only because the space being occupied at Fishermen's Bend was now required by the Division of Industrial Chemistry for its own use, but also because of the necessity to provide for additional staff and laboratories to cope with the growth of work planned for the Section.

9. In 1947 the C.S.I.R. was faced with the urgent demand for accommodation in other sections in addition to that for the Dairy Research Section, and it was decided to obtain an area of 15 acres at Highett on which there was already in existence a building which, with some alteration, could provide accommodation

immediately for two of the sections requiring it. It was therefore decided to allot 4 acres of this area for the use of the Dairy Research Section, and plans have been drawn up, during a period of about four years, for the buildings^s needed immediately for the work of this Section.

THE BUILDINGS.

10. The building group consists of two buildings, one comprising the Laboratory and the other a Plant and Services Building. They are to be located in close proximity to the other C.S.I.R.O. buildings in that area.

The Laboratory.

11. The plans provide for a Laboratory to be constructed of brick and measuring 172 feet long by 43 feet wide. Owing to the use made of the contour of the ground the building will consist of a Ground Floor giving a nett area of 5,612 square feet, and a Lower Ground Floor giving 2,324 square feet.

The Plant and Services Building.

12. The Plant and Services Building will be of single storey height, and will be 111 feet long by 57 feet wide, giving a nett floor area of 5,702 square feet.

ESTIMATED COST.

13. The cost of the proposal as referred to the Committee was set down as:-

Buildings	£105,000
Electrical and other services			£33,500
Cost of bringing services to the site		...	<u>£13,600</u>
		Total	<u>£152,100</u>

SECTION III - THE COMMITTEE'S INVESTIGATIONS.

GENERAL.

14. The Committee studied the plans and took evidence from representatives of the C.S.I.R.O. in Melbourne in order to establish the official reasons for the project. Evidence was also taken in Melbourne from departmental officials in regard to

the buildings themselves, and the architectural and engineering details. Independent experts in the technical field were also asked to give evidence as to the desirability or otherwise of considerably expanding the work already being carried on in this sphere, and of establishing important laboratories at Highett.

15. In view of the concern expressed by the Minister when referring the work to the Committee, special attention was paid to the relative activities of Victorian state organisations and also to work of a comparable nature being carried on in other States. In this regard particular attention was necessary in the case of research being carried on in N.S.W., and evidence was sought in Sydney regarding activities in that State.

16. Visits of inspection were paid to the present laboratories in the premises at Fishermen's Bend, and to the site at Highett proposed for the new buildings. In N.S.W. the Committee visited the Hawkesbury Agricultural College, where research is being conducted and projected for the future, and also the Bread Research Institute of Australia at North Sydney, where some of the C.S.I.R.O. research is being put to practical use under factory conditions.

THE BUILDINGS.

Utilization of the Site.

17. The building group, consisting of the Laboratory Building and the Plant and Services Building, has been planned to make the most effective use of the site. The Laboratory Building is to have the main axis running East and West, taking advantage of the site contours to provide a portion of the accommodation required as a lower ground floor under the eastern end of the building. The Plant and Services Building is to have its main axis running North and South, thus taking advantage of the level section of the site to provide for easy access by road to the building.

The Laboratory Building.

18. The main purpose of the Laboratory Building is

to provide accommodation for the various activities of the Dairy Research Section, and also accommodation for the Administration Section together with Technical Library, etc. The building is to be 172 feet by 43 feet, and, owing to the slope of the ground, it will be possible to construct a lower ground floor, covering almost half of that area, under the eastern end of the ground floor.

19. The Ground Floor provides for 6 research laboratories arranged in a plan layout to suit the various laboratory activities determined after conferences with officers of the C.S.I.R.O. Four of the larger laboratories have been provided with separate offices for use of the senior research officers. General and Chemical Laboratories are planned with centrally placed common Balance Room and Fume Cupboard Room, isolation of these facilities being considered advisable. The Bacteriology Laboratory with Media Kitchen and Incubator Room have been placed on the South or cool side of the building, while constant temperature, dark rooms, and chemical store are centrally situated in order to service all laboratories.

20. The Administration Section comprises offices for the Officer-in-Charge, Technical Secretary, General Office, Typists, Library and Store. A staff luncheon room of suitable area has been included, and adequate toilet accommodation for both sexes has been planned.

21. The Lower Ground Floor will provide for a two car garage, a large store room 49 feet by 17 feet, two smaller store rooms, a glass-blowing room, and a plant room. No internal stairway is provided for access from the Lower Ground Floor to the laboratories on the Ground Floor, but the Committee was informed that the outer stairway is considered sufficient for the purpose, the plans having been prepared with the collaboration of the C.S.I.R.O. architect and the officials who will be using the buildings. As the evidence indicates a certain amount of doubt on this point, however, the Committee recommends

that further consideration be given to the matter, particularly in view of the distance which has to be traversed in the open from the Lower Ground Floor stores and workrooms to the laboratories and staff room on the Ground Floor above. It is considered that, during periods of inclement weather, it would be an advantage to be able to reach the Ground Floor under cover of the building.

The Plant and Services Building.

22. This building is primarily intended for small scale experimental manufacture of dairy products, and it is divided into two sections. The northern section incorporates the Boiler Room, to house the plant providing hot water and steam for the Laboratory Building, and the Refrigeration Plant Room. The southern section comprises Engineering and Woodworking Shop, Plant Room with adjacent cold rooms, Office and Laboratory. A portion of this section is at 10 feet height, providing mezzanine storage space in the Plant Room.

CONSTRUCTION.

Laboratory Building.

23. External walls are to be brick cavity bearing walls, and internal partitions are to be of $4\frac{1}{2}$ inch brick supported on 9 inch brick foundation walls. Externally the building will be faced with salmon coloured bricks.

24. The floors will be of timber construction generally, but reinforced concrete will be used to that part of the Ground Floor forming the ceiling to the Lower Ground Floor. Floors generally will be covered with linoleum, with felt underlay over timber floors and $\frac{1}{2}$ inch canite underlay over the concrete floor sections.

25. Roof construction will be of steel roof trusses spaced at 10 feet centres, with timber purlins, and covered with corrugated asbestos cement sheeting. Windows are all to be of timber construction, while the doors will be of flush wood and half glass.

Plant and Services Building.

26. External walls are to be of red face brick, while the internal partitions will be of 9 inch thick brickwork, except for glazed partitions to Laboratory and offices. The partition dividing the Plant Room and the Engineering Room will be of timber framing so that it may be easily removed if it becomes necessary to extend the Plant Room at a later date.

27. Floors will be of concrete with granolithic finish. Windows are to be of timber framing with pivotted sashes provided at head to afford good circulation of air. Flush wood and half glass doors will be provided, while the ceilings will be of asbestos cement sheets.

28. Special treatment is provided for the walls, floors, and ceilings of the cold rooms which are to be lined with cork insulation to the requisite thickness for their respective temperatures.

ELECTRICAL AND ENGINEERING SERVICES.

Lighting.

29. With the exception of the Library the lighting throughout both buildings is to be by enclosed incandescent fittings, a total of 163 fittings being involved. The Library will have fluorescent lighting.

Electric Power.

30. In the Laboratory it is planned to instal 119 outlets fed from 8 special load centres, and one sub-distribution board for mechanical services. In the Services Building there will be 5 outlets with two further special load centres and three sub-distribution boards to supply mechanical services. The electrical installation has been based upon an estimated annual consumption of 96,000 kilowatts, costing approximately £750 p.a.

Mechanical Services.

31. Mechanical ventilation will be provided in laboratories, offices, staff room and library. Three fume cupboard exhausts are to be provided for the Special Laboratory and for the

General and Chemical Laboratories.

Air Conditioning Plant.

32. Full air conditioning plant is necessary for the Constant Temperature Room, to provide accurate dry bulb temperature and upper limit humidity continuously. The plant is to be fully automatic and provided with pneumatic controls to maintain the set dry bulb temperature within one degree in the Constant Temperature Room, and five degrees in the Ante-room. Provision is also to be made for the plant to use 100% fresh air when required.

Cold Room Refrigeration.

33. The two cold rooms in the Services Building will each be provided with an independent fully automatic refrigeration plant, with automatic defrosting equipment.

34. The Committee was informed that the proposed mechanical and refrigeration plant is of the most modern type, and would be equal to any in the world.

Hot Water Heating.

35. A hot water heating system will provide winter heating for the Plant and Services Building and for the Laboratory mechanical ventilation plant. The boiler will be provided with fully automatic oil fired burner, supplied with fuel from an underground storage tank located outside the Boiler Room. The Committee was informed that the oil fired system proposed was more economical to instal than a system operated from electric generators. It is also claimed that it heats up more quickly and, by burning furnace oil which is readily available, it is economical to maintain and operate.

Steam Generating Plant.

36. Steam, hot water supply, and vacuum services are to be provided throughout the Laboratory Building. Two 800 lbs. per hour oil fired steam generators will be installed in the Boiler Room and connected to a common steam header. The generators will be self-contained and fully automatic and are to

be of the forced circulation type.

ROADWAY AND SERVICES.

37. A paved road with concrete kerb and channels will provide for entrance to the buildings to connect with the existing entrance from Graham Road. Water service will be connected by a 4 inch main having hydrants and hoses to cover the area, while a 6 inch sewerage reticulation will connect to the existing system in the locality. An extension of the existing 4 inch gas reticulation will be made, with branches to the various points required.

LABOUR AND MATERIALS TO BE USED.

38. The main structural materials to be used are reinforced concrete, cement, clay bricks, structural steel, corrugated and plain asbestos cement sheeting, and timber for joinery and floors.

39. In response to inquiries made it was ascertained that the construction of this building would not cause materials to be held from use for the construction of housing to any great extent. There has been an increase in the production of timber and cement, and the amount of structural steel required will probably be drawn from stocks already imported. There has been a change in the availability of labour, and it has been more readily available in recent months. It is therefore considered that the supply of materials generally will be accelerated as a consequence of more labour being available.

THE SITE.

40. The site proposed comprises an area approximately 450 feet by 430 feet, being portion of the allotment at present under the control of the C.S.I.R.O., facing Graham Road, Highett. The allotment was originally acquired by the Commonwealth in 1942 and was transferred to the C.S.I.R.O. in 1945. The distance from Melbourne is approximately $10\frac{1}{2}$ miles by road, and less than a quarter of a mile from the Highett railways station.

41. The land is cleared and has a general fall

towards the North East. It has loamy soil which varies in depth from 1 foot to 10 feet, but underneath there is good, firm clay, making it very suitable for building purposes.

42. The suggestion was put forward that a more suitable site for the Dairy Research Section should be selected in close proximity to a dairy farm, and the Committee sought evidence in this regard from persons experienced in research work of this nature. It was explained to the Committee that different sites had been considered from time to time, and the advantages to be gained from carrying out the research work in various localities had been carefully weighed. It was finally decided that the specialised research work being done by the Dairy Research Section required laboratories and equipment which are not mainly dependent upon their location for most effective work, while the other considerations, such as proximity to other C.S.I.R.O. research laboratories, residential areas, and easy transport to the city and factories, make the Highett site preferable. The Committee considered all the views advanced and is satisfied that the site proposed at Highett is the most suitable under the circumstances.

ESTIMATED COST.

43. The estimated cost of the project as submitted to the Committee was as follows:-

	£	£
Laboratory building and Plant and Services Building ...		105,000
Electrical Services ...		4,500
Mechanical Services -		
Mechanical ventilation of Laboratory Building ...	10,150	
Constant Temperature Room A.C. plant	4,700	
Cold Room refrigeration ...	2,700	
Hot water heating system ...	5,150	
Steam generating plant & miscellaneous mechanical services ...	<u>6,300</u>	29,000
Cost of bringing services to site -		
Electrical ...	3,500	
Roads and drainage ...	7,000	
Sewerage ...	1,240	
Water supply ...	1,260	
Gas ...	<u>600</u>	13,600
Total estimated cost		<u>£152,100</u>

11.

44. The amount estimated as the total cost was quoted by the Minister for Works and Housing, at the time of referring the work to the Committee, as £122,000. In explaining the increase of £30,000 it was pointed out to the Committee that £13,600, being the cost of bringing the services to the site, was not previously included. In addition the amount of £16,500, representing increases in costs since the previous estimate was prepared in July, 1951, was now included to bring the total to the figure required by ruling prices.

TIME OF COMPLETION.

45. The working drawings, specification and bill of quantities have been prepared, and, if approval is given for the project, the work could be put in hand within approximately six weeks from the date of approval. The estimated time of completion is approximately 18 months from the date of signing of the contract.

ARCHITECTURE.

46. The buildings will be of plain construction and of a utilitarian appearance, with no considerable pretensions to architectural eminence. As the locality is a semi-industrial one with some factories in the vicinity, and the adjoining buildings housing the C.S.I.R.O. activities are war-time buildings converted to present day use, it is considered desirable to concentrate on an economical structure without any unnecessary embellishments. The Committee was informed that the plans have been discussed with local authorities, and no difficulties need be anticipated regarding services to the building. After taking evidence from the architects and those responsible for the building, the Committee is satisfied that the plans will provide a structure suitable for the Dairy Research work projected.

NECESSITY FOR THE BUILDINGS.

General.

47. In order to obtain satisfactory evidence upon which to base decisions concerning the possible overlapping of activities

in the field of dairy research the Committee sought evidence from independent witnesses in Victoria and New South Wales, and also obtained information of dairy research work being carried on in other States and countries.

48. From a careful study of all the evidence obtained it has been established that the type of dairy research being carried out at present by the Dairy Research Section at Fishermen's Bend, Victoria, is related almost entirely to problems connected with the products of the dairy farm rather than to any problems of actual production of the milk, except insofar as the separate problems are interdependent.

49. While it was found that a considerable amount of research is being carried out in most States in connection with the production of milk, pasture improvement, nutrition, herd-testing, and similar problems, there appeared to be very little research being carried out on the problems connected with the products during transportation or treatment at factories. The main exceptions to this state of affairs seem to be in N.S.W., where some research is being carried out at Hawkebury College by the State Agricultural Department, and a certain amount which has been done in Queensland.

State Activities.

50. It was pointed out that the States are mainly occupied in tutorial and educational work, and with administration, inspection, and control of the conditions operating in the dairy farms, factories, and distribution of the products. The State Departments have enabled the industry to attend more satisfactorily to the nutrition of the dairy cow, through pasture improvement and management; dairy herds have been improved by herd testing and disease control; and instruction has been given to farmers and to dairy operatives on milking practice and general dairy operation.

Commonwealth activities in Dairy Products Research.

51. In the early days of C.S.I.R. an agreement was made

with the States that C.S.I.R., in all aspects of its research programme, would deal principally with the more fundamental long-range problems of a regional rather than a local character. The Dairy Research Section therefore aims to confine its attention to the accumulation of new knowledge which can be incorporated in the range of information that the State Departments can use, either to pass on directly to dairy farmers and factories, or in the administrative control of the industry. It deals with problems which arise in the transportation, processing or manufacture which all milk or cream must undergo between the dairy farm and the point of consumption. It is concerned with the industrial rather than the agricultural end of the industry. It deals with the chemical, bacteriological and engineering aspects of milk processing, and also of the manufacture of butter, cheese, condensed and dried milks, casein, lactose and the many minor dairy products.

52. Past activities of the Section have been carried on over the years as staff and facilities became available, and research has been carried on into problems connected with wood taint derived from boxes made of Australian woods, deterioration of tinned butter in the tropics, compression of milk powder to save shipping space, the effect of light on the flavour of milk, utilisation of vast quantities of waste skin milk, cheese starters, and many other aspects of the industry.

53. Some of the activities of the C.S.I.R.O. are carried out at other institutions and in other States as occasion demands. At present valuable research is being conducted by C.S.I.R.O. officers at the Werribee School of Dairy Technology, in collaboration with the scientists there, while other investigations are being carried out at the Bread Research Institute of Australia in Sydney, in connection with the possibility of using skin milk in bread making. The Committee visited this Institute and saw the methods being used by the scientists there, where the work of privately financed research workers is being carried on in company with the C.S.I.R.O. research officials.

54. During the course of the evidence the Committee was also informed of certain work which had been carried out in Queensland, and some interesting comparisons were made with work and conditions in New Zealand, where dairy farming and dairy research are very important factors in the economy of the country.

Duplicated Effort.

55. Past experience has shown that, in the main, the State and Commonwealth research officers have carried out investigations which have been clearly defined and related closely to the respective spheres determined upon. However, the evidence shows that it is sometimes difficult to define what is fundamental research, and a number of problems have been investigated by both State and Commonwealth scientists. Some doubt therefore arose in the minds of the members of the Committee concerning the effectiveness of the methods used to co-ordinate the efforts of the workers and facilities available.

56. A great deal of work has been done by the C.S.I.R.O. in connection with cheese starter problems, particularly the problem of bacteriophage, a virus disease of cheese starter cultures which causes cessation of acid production in the cheese vat. The evidence shows that the N.S.W. State research officers have also been engaged on the bacteriophage problem for a long period of time. Other problems which have received the attention of both State and Commonwealth research scientists include experiments with tinned butter, the effect of certain weeds on milk, and others. However, Dr. Noble, the Director, N.S.W. Department of Agriculture, when giving evidence on this point, explained that, although it is sometimes found that two men might be working on the same problem, that is not as bad as it sounds. It is evident that some difficult problems will be solved more readily by two men working independently than by one man alone. He emphasizes, however, that the State can do virtually no fundamental research work, and it should be remembered that quite often the very best results in scientific work are those based on fundamental research.

He also explained that, although the scientists on the staff of the Hawkesbury College felt the benefit of a certain amount of research in connection with their tutorial work, the fundamental research work should be carried out by the C.S.I.R.O., because their men would not be subjected to the same distractions as those engaged in the work of the College. It can therefore reasonably be claimed that, in general terms, the work proposed at the new laboratories at Highett will not be a duplication of that carried out elsewhere in Australia, though there have been some instances of overlapping in the past. Duplication and loss of valuable research efforts will only be prevented, however, if complete co-ordination is exercised over all the activities contemplated in this field.

Co-ordination of Research.

57. As a result of its inquiries the Committee felt that there was a need for some special action towards co-ordination of effort in the dairy research work, in order to make best use of the men available, and also to use the equipment, provided at such great expense, to the best advantage. This opinion was generally held by the witnesses, and the Committee was informed of efforts having been made in the past with such an object in view. In fact there exists at the present time two committees whose functions include the co-ordination of research amongst the bodies represented upon them. In N.S.W. there is a Research Co-ordination Committee consisting of the Chairman of the N.S.W. Public Service Board, and delegates appointed by the N.S.W. University of Technology, the University of Sydney, the C.S.I.R.O., the Department of Conservation, and the Department of Agriculture. This committee meets three times a year. There is also the Standing Committee on Agriculture, which is composed of the permanent heads of each State Department of Agriculture and the representative of the C.S.I.R.O., and it meets two or three times a year. The opinion was expressed that co-ordination between the various States could best be effected through this committee.

58. Although these two co-ordination committees no doubt possess the power to control the various activities concerned, it would appear that, in practice, the great volume of work to be carried out, and the large number of problems requiring to be investigated in all the various phases of agriculture in the States, make it difficult to ensure that the co-ordination of all the individual efforts actually takes place. The Public Works Committee, therefore, is of opinion that, however difficult it is to attend to all the problems arising in the various sections of scientific work dealt with by the Standing Committee on Agriculture, special attention should be given to the activities connected with the dairy research projects, if the provision of the large laboratories at Highett and also the extensive additions by the State Government at Hawkesbury College are to be thoroughly justified. The Committee was greatly impressed by the valuable and enthusiastic work being carried out by the scientists interviewed during the visits of inspection, and feels that there is ample scope and complete justification for the provision of the proposed equipment. It is also convinced that complete co-ordination of all the activities in the field of dairy research could be attained if special steps were taken by the Standing Committee on Agriculture to have the plans and activities of this section of their interests completely and regularly surveyed and controlled, with a view to ensuring that all the valuable equipment, and all the research efforts are used to attain the desired results as efficiently as possible.

Location of Equipment.

59. If the question of co-ordination is effectively dealt with the question of the location of the Dairy Research Laboratories becomes primarily a matter of maximum convenience in placing the equipment where it will be used to obtain the best results. In an earlier section of this report the Committee has decided that, under the circumstances studied, the site at Highett is the most suitable for the location of the building. In the evidence letters were quoted from the Agricultural

Departments of South Australia and New South Wales urging the extension of the Dairy Research Section as proposed, and Dr. Noble has explained that, when the plans of the new research section at Hawkesbury College were drawn up it was not intended that the staff there should be employed exclusively on fundamental research. He agrees that such research should be carried out at Highett.

60. The possibility of placing the new equipment at Hawkesbury College as a section of the C.S.I.R.O. was also explored, and, theoretically such a course could no doubt be carried out. Following the visit to Hawkesbury College some members were of the opinion that this course should be adopted, and the decision arrived at by the Committee, after full consideration of the matter, is shown by the following extract from its minutes of proceedings, namely:-

"Senator O'Byrne moved -

That the Dairy Research Section will be able to do its most effective work if located at Highett in association with other sections of the C.S.I.R.O. there, and the Committee recommends that the laboratories be constructed at Highett in accordance with the plans referred to the Committee.

The motion was seconded by Mr. Bird.

The Committee divided -

<u>Ayes 6.</u>	<u>Noes 2.</u>
Senator O'Byrne.	Senator Reid.
Senator Henty.	Mr. Crammer.
Mr. Bird.	
Mr. Bowden.	
Mr. McDonald.	
Mr. O'Connor.	

and so it was resolved in the affirmative."

Extension of Activities and Accommodation.

61. One of the reasons advanced as an indication of the necessity for the new building was the need to expand the staff to cope with the increasing volume of problems to be dealt with in the field of dairy research. It is planned to increase the staff from the present strength of 21 to 30 by 1955. This will make it essential to provide additional accommodation to that at present being used at Fishermen's Bend. In addition, the premises already occupied at Fishermen's Bend were loaned by the Division of Industrial Chemistry during the war, and they are now urgently required by that Division, thus making it essential for the Dairy Research Section to find alternative accommodation as soon as possible.

62. The proposal to erect the laboratories and extend the work of the Dairy Research Section has been given very substantial encouragement by the Australian Dairy Produce Board who, in 1947, offered the sum of £10,000 towards the cost of

erecting the laboratories. In 1951, when it was realised that the cost of the proposed buildings would greatly exceed the amount originally estimated, an additional £10,000 was offered towards the cost.

63. All the witnesses agree that, as production of dairy commodities must be rapidly increased, there is an urgent necessity to extend the work of the Dairy Research Section, and the Committee recommends that the proposed buildings be erected as soon as it is possible to do so.

Successful Results.

64. During the Committee's visits of inspection of the various laboratories the members were impressed by the spirit of enthusiasm shown by the scientists in their projects, as well as by the valuable results obtained and being put to practical use in the interests of the public generally, and of the dairy industry in particular. Two instances, that of the supply of cheese starters to the cheese factories, and that of the preparation of skim milk for use as egg substitute, serve to illustrate the present practice by which results are freely distributed to those who are willing to use them.

65. A great deal of research has been necessary to obtain the results achieved, and private factories are now able to make use of such results to their own substantial profit, without expense. The Commonwealth is spending large sums of money in erecting buildings and maintaining scientific research, and it would appear that those obtaining direct benefit from the results should pay something towards the cost of the work, even though there are initial difficulties in inducing sections of the industry to adopt the methods found to be most useful.

66. Inquiries in the matter indicated to the Committee that the scientists are characteristically unconcerned about the profits to be obtained from their research, so long as their efforts are crowned with success and the country is correspond-

ingly enriched. A more practical arrangement was noted in the visit to the Bread Research Institute of Australia at North Sydney, where research along various lines has been carried on for some time by the voluntary payment of a levy by the bakers associated with the Institute, and much valuable information has been disseminated amongst the bakers concerned. Recently the C.S.I.R.O. loaned a research officer to the Institute, and his efforts are being added to the investigations, so that further notable work is being pushed forward, with the object of increasing the service to the bakers, and also of providing important benefits to the public by introducing improvements to the bread consumed.

67. The Committee is of opinion that it should be possible to make some arrangements by which those who will directly benefit by the success of research projects should be asked to pay, or to make donations, to funds which would further the work.

SECTION IV - THE COMMITTEE'S DECISIONS.

Summary of Recommendations.

68. The following is a summary of the recommendations made by the Committee after investigation of the project and study of the evidence:-

1. The plans will provide a structure suitable for the dairy research work projected. (paragraph 46)
2. The site proposed at Highett is the most suitable under the circumstances. (paragraph 42)
3. Further consideration should be given to the desirability of providing internal access from the Lower Ground Floor to the Ground Floor. (paragraph 21)
4. Construction of the building is not likely to seriously affect home building to any considerable extent. (paragraph 39)
5. The work at the new laboratories will not duplicate that being carried out elsewhere in Australia, provided

- proper action is taken to co-ordinate the research activities in this sphere. (paragraph 56)
6. Special action should be taken to effect co-ordination of all activities connected with dairy research projects in Australia, if provision of large laboratories is to be thoroughly justified. (paragraph 58)
 7. Complete co-ordination of all activities could be obtained if special steps were taken by the Standing Committee on Agriculture to have the plans and activities of this section of their responsibilities regularly surveyed and controlled. (paragraph 58)
 8. The Dairy Research Section will be able to do its most effective work if located at Highett, and therefore the proposed laboratories should be constructed there, in accordance with the plans referred to the Committee. (paragraph 60)
 9. As production of dairy commodities must be rapidly increased there is an urgent necessity to extend the work of the Dairy Research Section. The building of laboratories should, therefore, be commenced as soon as possible. (paragraph 63)
 10. It is desirable to explore the possibility of making arrangements by which those who will directly benefit by the success of research projects should be asked to pay, or to make donations, to funds which would further the work. (paragraph 67)

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